Cal Poly Graphic Communications PDF/VT Test File Suite

Version 1.0.1

PDF/VT

Documentation & Release Notes

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Abstract

The Cal Poly Graphic Communications PDF/VT Test File Suite provides a collection of four sets of graphically-rich, robust, valid PDF/VT files for testing and demonstrating products claiming support of consumption of files conforming to the ISO 16612-2 PDF/VT standard. This publication documents this test suite, providing detailed information regarding the PDF/VT test files, their characteristics, their use, and restrictions upon such use as well as release notes. It also documents the PDF/VT Test File Project at Cal Poly San Luis Obispo during the 2013 Winter and Spring academic quarters.

The PDF/VT Test File Project is sponsored and supported by Adobe Systems Incorporated and XMPie, a Xerox Company.

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California Polytechnic State University, San Luis Obispo

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The Cal Poly GrC PDF/VT Test File Project

Background

PDF/VT

The ISO 16612-2:2010 standard defines the PDF/VT document format and methods to enable reliable document exchange for variable data and transactional printing. Based upon ISO PDF/X-4 and PDF/X-5 standards, it allows the specification of document structure and layout, content data, and interaction of graphical objects in a graphics model that supports transparency and both device-dependent and device-independent color spaces.

The DNA of PDF/VT is the use of PDF XObjects and robust metadata to facilitate production.

The standard provides for three conformance levels:

- PDF/VT-1 is complete single file exchange based on PDF/X-4 using Image XObjects to represent repeating raster images and Forms XObjects to represent either vector, text, or grouped mixtures of vector, text, and raster image objects.
- PDF/VT-2 is multi-file exchange based upon PDF/X-4p and/or PDF/X-5 standards. External graphics reference is provided for by use of Reference XObjects.
- PDF/VT-2s is for "streamed" delivery of VDP content via a MIME package consisting of job control and "chunks" of PDF/VT-1 and/or PDF/VT-2 files.

Generally speaking, the caching of the output of rendering of XObjects at the RIP provides for very high PDF print job rendering performance compared to either PDF job streams that don't make use of XObjects or RIPs that do not attempt to optimize output based on caching XObject output.

PDF/VT metadata is of two forms:

- DPart (Document Part) metadata. PDF/VT provides for a structure of metadata that provides for grouping of pages of the PDF file associated with a particular "record" of the data used to create a VDP campaign item. DPart metadata also accommodates identification of different page types (such as "brochure" and "envelope") as well as allowing for exposure of key/name pairs associated with the data from the VDP campaign's original data sources. Effective use of such metadata requires a PDF/VT implementation that associates job ticket information (such as that available with JDF) or console operations with the corresponding DPart metadata.
- XObject scoping metadata provides for "hints" for the RIP associated with where and how XObjects are used (for example, single reference or multiple references). XObject encapsulation metadata provides further hinting information as to whether all graphic state information for rendering a particular XObject is contained within the XObject's definition itself. Such metadata is not required in a PDF/VT file. Nor is a conforming PDF/VT renderer required to process such metadata if present. It is available to assist RIPs that do not have particularly sophisticated XObject caching mechanisms.

History of the PDF/VT Standard

Prior to development of the PDF/VT specification, PDF was not viewed favorably for VDP, primarily due to file size as well as PDF file creation and rendering performance issues.

Most VDP was performed using proprietary solutions as well as PPML, mostly based upon special implementations of PostScript "underneath."

As major publishing applications began supporting live transparency and ICC color management and designers sought to create more graphically-complex, colorful VDP campaigns, these existing VDP solutions became less satisfactory.

As ISO TC130 WG2/TF2 commenced work on the new PDF/X-4 and PDF/X-5 standards supporting live transparency and ICC color management, a number of industry experts began to seriously discuss the possibility of creating a PDF subset standard

based upon PDF/X-4 and PDF/X-5 and use of PDF XObjects to represent repeating objects. The result of such discussions was the chartering of ISO TC130 WG2/TF3 to commence work on development of the PDF/VT standard in Spring 2007. Tim Donahue of Eastman Kodak serves as chair of this task force. Dov Isaacs of Adobe Systems serves as co-chair of the task force.

After three years of intense and extensive development work including participation of many experts from numerous companies and industry organizations, the PDF/VT standard was ratified and published by ISO in late 2010 as ISO 16612-2:2010 PDF/VT.

The PDF/VT specification is available for purchase from ISO at <http://www.iso.org/iso/home/store/catalogue_tc/catalogue_detail.htm?csnumber=46428>. Note, though, that the specification was neither designed for nor is it conducive for laymen wanting an introduction to the standard and its use!

Benefits of PDF/VT workflow

There are numerous advantages to use of PDF/VT based VDP workflows in contrast to previously existing VDP workflows. These include but are not limited to:

- Unified PDF Print Publishing Workflow – for all digital printing including VDP, a single workflow saves on operational costs including software and training.
- Ability to readily display and preflight VDP output using standard PDF tools as opposed to proprietary tools which often simply convert the other VDP protocols into PDF for viewing!
- Support for the entire PDF imaging model – PDF/VT poses no restrictions against color management and especially graphics features such as live transparency.
- For print service providers, PDF/VT breaks the dependency on vendor-specific VDP solutions. It facilitates and encourages rational choice of digital presses and RIPs based on true needs as opposed to dependency on proprietary VDP solutions.

Challenges for PDF/VT Adoption

Although standard published in 2010, the industry had a "chicken and egg" problem with regards to widespread adoption of PDF/VT for VDP.

Perspective of digital print system suppliers: Why create PDF/VT-compliant and optimized RIPs if no applications are actually creating PDF/VT files?

Perspective of VDP software developers: Why create PDF/VT files if there are no RIPs supporting them?

Perspective of Print Service Providers: The only thing really shipping in quantity are press releases. Show me the gear and the software and then I might consider PDF/VT!

It became increasing clear by 2013 that it was necessary to "kick-start" PDF/VT adoption by demonstrating viability with real files that would prove PDF/VT's benefits on recent vintage RIPs and digital print systems.

Requirements for a PDF/VT Application Test File Suite

In planning for a PDF/VT application test suite, the following requirements and considerations were identified:

- Demonstrate that PDF/VT generation is indeed already "real and viable" using available commercial products.
- Facilitate "apples-to-apples" feature, quality, and performance comparison of products claiming support for the PDF/VT standard.
- Realistic content – graphically-rich, personalized content using ICC color management and "reasonable" amounts of transparency effects, not coerced use of imaging model capabilities and effects or density of use of same not representative of real world VDP content going forward.
- Professional high graphic quality – The visual quality and general attractiveness of the content needs to be of a quality that is conducive for vendors wanting to use the files for live demonstration of devices supporting PDF/VT at trade shows and other venues.

- File length – Most existing purported PDF/VT sample files that we have seen to date were very short (100 pages or less) with "cheesy" graphics.

  However, most VDP jobs consist of many thousands of pages and are run on devices with performance of up to hundreds of pages per minute. Long file lengths in terms of both record and page count are necessary for true *performance testing* on high speed devices and RIPs as well as for *volume testing* to shake out unknown implementation restrictions, memory leaks, caching issues, etc.

  On the other hand, subset files of these long files are necessary for debugging tasks. Tools to divide up PDF/VT files "after the fact" are not yet available.

- DPart metadata – Such metadata is necessary for testing and demonstrating record and/or document part selective printing and imposition features of RIPs supporting PDF/VT.

- No DRM issues – In order to facilitate public use of these PDF/VT test files, there must be no DRM (digital rights management) issues with regards to digital assets used in the files including all fonts, images, and fictitious data.

- Availability – To encourage use, the test files need to be free and easy available to all who have need for them with minimal restrictions on their use.

Implementation of The Cal Poly GrC PDF/VT Test File Project

The plan for the Cal Poly GrC PDF/VT Test File Project was developed by Dov Isaacs of Adobe Systems during Autumn 2013 in conjunction with Harvey Levenson, Cal Poly GrC Department Head in consultation with additional Cal Poly GrC faculty as well as with engineering, marketing, and sales resources at Adobe and XMPie.

The Course

The overall strategy was to incorporate the test file development into a two academic quarter sequence of upper-level undergraduate courses offered during the 2013 Winter and Spring quarters – *GrC 452 Emerging Technologies: Variable Data Publishing – Design, Production, and Analysis*. The instructor of record for these courses was Dov Isaacs, a Principal Scientist at Adobe Systems, who served as a volunteer Industry Research Professor at Cal Poly for the two academic quarters. He was assisted on campus by Cal Poly GrC faculty member Professor Howard Vogl.

The Winter quarter of GrC 452 was primarily a lecture course open to all with lectures on reliable PDF publishing workflows, VDP, PDF standards (including PDF/X-4 and PDF/VT), use of VDP software (specifically XMPie uCreate Print in conjunction with InDesign), and use of Adobe Acrobat to analyze and if necessary repair PDF files. 35 students participated in this first-ever course covering many topics never formally broached in a university course environment.

The Spring quarter of GrC 452 was a lab course implementing the four VDP campaigns. Seventeen students selected by GrC faculty recommendation during the previous Fall quarter participated, divided into four teams, one for each of four VDP campaigns for which test files were to be developed.

VDP Campaign & Document Development

The four VDP campaigns and prototype documents were developed by these students during the Winter quarter in anticipation of the Spring quarter course. The Cerebellum, Food, Travel, and Wine VDP campaigns and their resultant output are described in detail in the last four sections of this publication.

For development of the source documents, data, and imagery for the test files, the students used Adobe InDesign 8, Adobe Illustrator 16, Adobe Photoshop 13, Adobe Acrobat 11 Pro, and Adobe Font Folio 11 (licenses donated by Adobe for this project) as well as XMPie UCreate Print 6.x (licenses donated by XMPie). On-campus work was supervised by Howard Vogl with support of other GrC faculty members including Lorraine Donegan, Colleen Twomey, and Brian Lawler. Eric Johnson, GrC's Information Technology Consultant provided internal infrastructure support as well as the

development of the 20,000 record fictional databases for each of the VDP campaigns.

During the Spring quarter, several on-campus status reviews of the students' work were held with Dov Isaacs. Appropriate adjustments were then made in design and implementation as necessary.

At the end of the Spring quarter in May 2013, archives of the source files (InDesign documents, imagery, fonts, and database files) were packaged and delivered to Dov Isaacs at Adobe as Version 1.

Post-Project Adjustments & Packaging

Upon delivery of Version 1 of the source files, it was necessary to attempt to generate the necessary PDF/VT files for the desired record lengths, test the resultant PDF/VT files for validity and performance, and make adjustments as necessary.

PDF/VT File Generation Issues – Due to 32-bit address space limitation issues associated with InDesign 8 and the corresponding version of XMPie uCreate Print, we had problems generating the longer PDF/VT files. In collaboration with XMPie's Netanya, Israel-based engineering team, we were able to get special builds of XMPie uCreate Print that finessed these problems as best as possible until 64-bit InDesign 9 and a corresponding XMPie uCreate Print version is available.

Performance Issues – No special instructions were given to the Cal Poly GrC project team in terms of designing the documents for optimal PDF/VT rendering performance. The project was challenging enough for the students given the time constraints without getting them involved in very "uncharted territory" of design for performance optimization.

Our examination of the PDF/VT files generated from the Version 1 documents clearly showed that although the InDesign and XMPie software performed "as advertised" in creating PDF/VT using Image XObjects and Forms XObjects, there were dramatic PDF/VT test file performance improvements that could be achieved:

- Combining as many non-variable items on pages as groups and even pre-composing full pages of content based on limited choices of content make a tremendous difference in the number of XObjects generated and how they are accessed.
- Use isolated blending transparency groups as much as possible for content to allow XObject caching to be most effective. (An XObject that may need to be involved with transparency blending of objects underneath it cannot be as effectively cached as an XObject for which it is known that no transparency blending will potentially occur with objects underneath.)

All four of the VDP campaigns recognized significant performance gains by such content rearrangement and transparency blending isolation.

After the above-mentioned adjustments were made, final PDF/VT files were generated and this documentation was authored.

Acknowledgments

We acknowledge the generous support of the following organizations and individuals for this project:

Cal Poly San Luis Obispo GrC Faculty & Staff:
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Lorraine Donegan
Colleen Twomey
Brian Lawler
Eric Johnson

Cal Poly San Luis Obispo GrC Students (listed with their respective VDP Campaign documentation)

Adobe Systems Incorporated:
Harry Miller
Bakul Agarwal
Gaurav Kumar Choudhary
Mark Lewiecki

XMPie:
Judy Berlin
Amit Cohen
Gal Kahana
Zvika Leybovich
Roman Sternin
Hanan Weisman
Idan Youval

PDF Association:
Olaf Drümmer

Other:
Reuven Sherwin (formerly of *XMPie*)

Digital Asset Considerations

Imagery

All digital imagery used in these documents was donated by the student participants in the Cal Poly GrC PDF/VT Test File Project. The test files may be distributed, printed, and displayed with the imagery intact. However, the imagery may not be extracted and used for any other purposes whatsoever.

Fonts

All fonts used in the Cal Poly GrC PDF/VT Test Files Suite are licensed from the Adobe Type Library permitting at least "preview and print embedding" within PDF files and do not require royalty payment for distribution of the PDF files with such fonts embedded.

Data

All names, addresses, and other data in this work are fictitious. Any resemblance to real persons, living or deceased, to real addresses, or any other real data is purely coincidental.

Source Document Availability

The source InDesign documents, digital images, and data files are not available for distribution. The publicly-distributed test files consist strictly of the PDF/VT-1 files generated from such documents, digital images, and data files.

File Availability

The files of the Cal Poly GrC PDF/VT Test File Suite, including a PDF copy of this documentation file, may be downloaded at no cost from the download section of the PDF Association's website at <http://www.pdfa.org/downloads/>. No login id is required for this download. These files may not be publicly redistributed from any other venue.

Restrictions

The files of the Cal Poly GrC PDF/VT Test File Suite may be freely distributed and used for testing and demonstration purposes, public or private, with the condition that they may not be altered in any manner.

Warranty

The Cal Poly GrC PDF/VT Test File Suite is offered "as-is" with no implied warranty of any type.

Problem Reporting & Suggestions

Please feel free to report any problems (in the PDF/VT-1 files or the documentation or to offer suggestions for future enhancements of this test suite to Dov Isaacs at <dov@dovisaacs.com> or Howard Vogl at <hvogl@calpoly.edu>.

Your feedback will be most appreciated. Thank you!

Release Notes – Version 1.0.1

Version 1.0.1 is the first public release of the Cal Poly Graphic Communications PDF/VT Test File Suite. (Version 1 was the internal release of the source files from the students for subsequent PDF/VT-1 file generation, performance tuning, documentation, and integration.)

File Availability

The 29 files listed below in the File Manifest, including a PDF copy of this documentation file, may be downloaded at no cost from the download section of the PDF Association's website at <http://www.pdfa.org/downloads/>. No login id is required for this download. These files may not be publicly redistributed from any other venue.

Please strictly observe the restrictions on file modification specified earlier in this publication.

Note that the PDF/VT specification itself is not a free download. It is available for purchase from ISO at <http://www.iso.org/iso/home/store/catalogue_tc/catalogue_detail.htm?csnumber=46428>

File Manifest – Version 1.0.1

Container File	Size (bytes)	File Name	Size (bytes)	Pages	Contents
– n/a –	*– n/a –*	Documentation & Release Notes V1.0.1.pdf	~23,700,000	60	Documentation and release notes
Cerebellum V1.0.1 - 10.zip	4,290,242	Cerebellum V1.0.1 - 10.pdf	4,896,000	130	Cerebellum PDF/VT – First 10 records
Cerebellum V1.0.1 - 100.zip	5,601,501	Cerebellum V1.0.1 - 100.pdf	7,896,793	1,300	Cerebellum PDF/VT – First 100 records
Cerebellum V1.0.1 - 500.zip	8,021,600	Cerebellum V1.0.1 - 500.pdf	17,698,485	6,500	Cerebellum PDF/VT – First 500 records
Cerebellum V1.0.1 - 1000.zip	11,088,352	Cerebellum V1.0.1 - 1000.pdf	30,011,295	13,000	Cerebellum PDF/VT – First 1,000 records
Cerebellum V1.0.1 - 5000.zip	34,780,009	Cerebellum V1.0.1 - 5000.pdf	129,469,388	65,000	Cerebellum PDF/VT – First 5,000 records
Cerebellum V1.0.1 - 10000.zip	68,329,634	Cerebellum V1.0.1 - 10000.pdf	257,213,808	130,000	Cerebellum PDF/VT – First 10,000 records
Cerebellum V1.0.1 - 15000.zip	111,319,372	Cerebellum V1.0.1 - 15000.pdf	402,067,220	195,000	Cerebellum PDF/VT – First 15,000 records
Food V1.0.1 - 10.zip	13,822,876	Food V1.0.1 - 10.pdf	14,672,902	100	Food PDF/VT – First 10 records
Food V1.0.1 - 100.zip	20,415,499	Food V1.0.1 - 100.pdf	23,109,605	1,000	Food PDF/VT – First 100 records
Food V1.0.1 - 500.zip	22,404,013	Food V1.0.1 - 500.pdf	31,573,272	5,000	Food PDF/VT – First 500 records
Food V1.0.1 - 1000.zip	24,812,718	Food V1.0.1 - 1000.pdf	42,215,872	10,000	Food PDF/VT – First 1,000 records
Food V1.0.1 - 5000.zip	44,066,174	Food V1.0.1 - 5000.pdf	128,296,530	50,000	Food PDF/VT – First 5,000 records
Food V1.0.1 - 10000.zip	68,308,963	Food V1.0.1 - 10000.pdf	236,166,656	100,000	Food PDF/VT – First 10,000 records
Food V1.0.1 - 15000.zip	92,374,448	Food V1.0.1 - 15000.pdf	345,287,851	150,000	Food PDF/VT – First 15,000 records
Travel V1.0.1 - 10.zip	27,033,909	Travel V1.0.1 - 10.pdf	27,986,727	40	Travel PDF/VT – First 10 records
Travel V1.0.1 - 100.zip	53,297,905	Travel V1.0.1 - 100.pdf	56,703,222	400	Travel PDF/VT – First 100 records
Travel V1.0.1 - 500.zip	68,284,756	Travel V1.0.1 - 500.pdf	80,641,751	2,000	Travel PDF/VT – First 500 records
Travel V1.0.1 - 1000.zip	86,920,861	Travel V1.0.1 - 1000.pdf	110,407,021	4,000	Travel PDF/VT – First 1,000 records
Travel V1.0.1 - 5000.zip	234,841,138	Travel V1.0.1 - 5000.pdf	347,485,178	20,000	Travel PDF/VT – First 5,000 records
Travel V1.0.1 - 10000.zip	420,485,849	Travel V1.0.1 - 10000.pdf	644,888,523	40,000	Travel PDF/VT – First 10,000 records
Travel V1.0.1 - 15000.zip	595,273,040	Travel V1.0.1 - 15000.pdf	926,000,531	60,000	Travel PDF/VT – First 15,000 records
Wine V1.0.1 - 10.zip	53,854,115	Wine V1.0.1 - 10.pdf	54,601,189	100	Wine PDF/VT – First 10 records
Wine V1.0.1 - 100.zip	54,841,962	Wine V1.0.1 - 100.pdf	56,799,795	1,000	Wine PDF/VT – First 100 records
Wine V1.0.1 - 500.zip	56,047,715	Wine V1.0.1 - 500.pdf	63,126,744	5,000	Wine PDF/VT – First 500 records
Wine V1.0.1 - 1000.zip	57,490,551	Wine V1.0.1 - 1000.pdf	71,042,198	10,000	Wine PDF/VT – First 1,000 records
Wine V1.0.1 - 5000.zip	69,965,844	Wine V1.0.1 - 5000.pdf	135,255,448	50,000	Wine PDF/VT – First 5,000 records
Wine V1.0.1 - 10000.zip	84,876,460	Wine V1.0.1 - 10000.pdf	215,622,170	100,000	Wine PDF/VT – First 10,000 records
Wine V1.0.1 - 15000.zip	100,054,234	Wine V1.0.1 - 15000.pdf	296,674,740	150,000	Wine PDF/VT – First 15,000 records

Known Issues & Limitations – Version 1.0.1

Record Count

Although the Cal Poly Graphic Communications PDF/VT Test File Suite was designed with a 20,000 record database, Version 1.0.1 is limited to the first 15,000 records due to 32-bit address space limitation issues associated with InDesign 8 and the corresponding version of XMPie uCreate Print (version 6.5 build 6760).

We expect to address this limitation in a future version of this test suite using the 64-bit version of InDesign 9 and the corresponding XMPie uCreate Print version.

Font Subset Optimization

Subsets of fonts used in the documents are not fully merged and optimized, resulting in extraneous font and glyph definitions in the PDF/VT-1 output files. This may result in very slight performance overhead and some file size bloat.

Stream Compression

Many streams within the PDF/VT-1 files, especially those with DPart data, are not compressed resulting in inordinate file size bloat. (This may be readily seen by the difference in the size of the .ZIP container files versus the size of the decompressed PDF files therein.) This should not affect rendering performance but for very large files, could be an issue for low memory configuration RIPs.

DPart DPM

The PDF/VT-1 files correctly provide DPart DPM data for MediaType and Record.

The MediaType field allows for page selection for print based on the "part" of the document, such as booklet, poster, postcard, etc. The available MediaType for each VDP campaign are provided with the documentation of each campaign in the following sections.

The Record field contains the relative record number within the PDF/VT-1 file, also useful for selectively printing the pages associated with particular record numbers.

There is also DPart DPM data associated with the field names and values of the database used for the particular VDP campaign. XMPie uCreate Print does not provide a means by which such fields may selectively be output at DPart DPM. Furthermore, included in these database fields and values are intermediate rules and values used in the VDP composition process. These DPart DPM fields may also be used for selective print. The primary effect of the extraneous definitions is some degree of file bloat; performance should not be significantly impacted.

Note that the ability to selectively print depends upon the PDF/VT support provided by your RIP. It must provide a means of associating job ticket information (JDF or otherwise) or console commands with the DPart DPM data within a particular PDF/VT file.

XMPie is aware of our request for selective output of DPart DPM for database and internal data.

XObject Support

Both InDesign and XMPie UCreate Print support PDF export optimization via use of Image XObjects and Forms XObjects. Much of the performance tuning performed for version 1.0.1 was associated with coercing optimal generation of such XObjects as well as explicit specification of transparency isolation where appropriate.

Neither XObject scoping nor XObject encapsulation metadata are currently supported by either InDesign or XMPie UCreate Print. Such metadata support is *not* a requirement for PDF/VT-1 file generators. Intelligent PDF/VT renderers can readily implement caching algorithms to intelligently deal with these issues with minimal if any performance degradation.

VDP Campaign: Cerebellum

The Cerebellum VDP campaign creates a customized twelve page welcome booklet and a poster for attendees of a fictitious music festival, Cerebellum. The customization is based upon a 20,000 record database with fictitious names, addresses, gender, age, music preferences, and food preferences of the attendees.

The twelve pages of the welcome booklet are each 6" by 6" plus 0.125" bleed on all four sides. The poster is 11" by 17" plus 0.125" bleed on all four sides.

For each record in the database, there are 10 pages generated in the PDF/VT-1 file. Thus, for the 10 record PDF/VT-1 test file, there are 100 pages, 1000 pages for the 100 record PDF/VT-1 test file, 5000 pages for the 500 record PDF/VT-1 test file, etc. up to 150,000 pages for the 15,000 record PDF/VT-1 test file.

Brief descriptions of the makeup and content of each page as well as imposition suggestions are provided below.

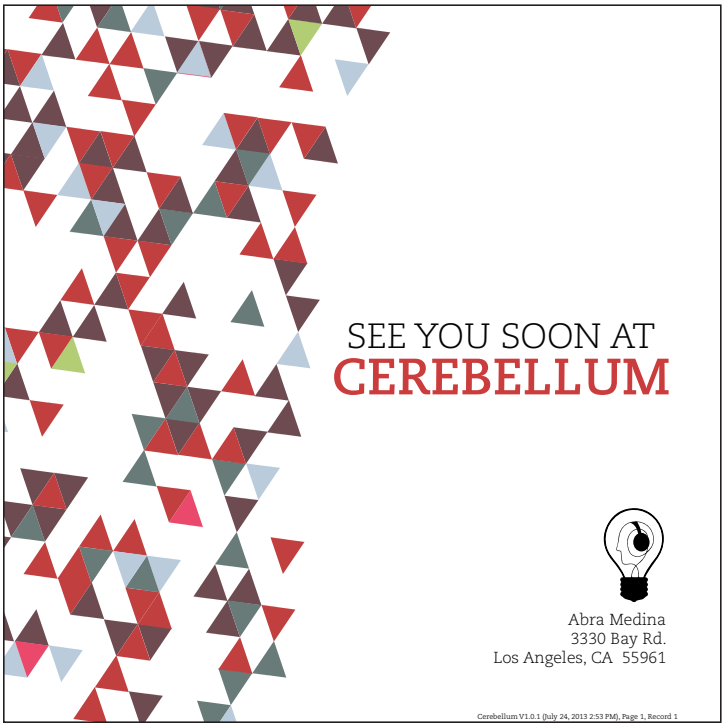
We thank the members of the Cerebellum team:
Victoria Chau,
Tess Hannel,
Brianna Johnson,
Jeanie Mordukhay &
Allie Powers

The database was developed and customized by Eric Johnson, Cal Poly GrC's Information Technology Consultant.

Page Descriptions

Page 1 – Booklet Cover

The cover page of the booklet is customized in three ways. The attendee's name and address from the database is printed in the lower right hand of the page. If the attendee has previously attended one of these concerts, the initial line reads "WELCOME BACK TO" as opposed to "SEE YOU SOON AT." The name "Cerebellum" is customized to appear in red for female attendees or blue for male attendees.



Page 2 – Favorite Band

The text on this page is customized with the name of the attendee's favorite band along with the day, time, and location when that band is scheduled to perform. (The photo is static!)

AWAITS YOU

Day 2
Cortex Tent
2:00 - 3:00 PM

Cerebellum V1.0.1 (July 24, 2013 2:53 PM), Page 2, Record 1

Page 3 – Welcome

This page welcomes the concert attendees. The name "Cerebellum" is customized to appear in red for female attendees or blue for male attendees.

WELCOME TO
CEREBELLUM

Our festival will immerse you in a mind & body musical experience. This 3-day music extravaganza will not only please your ears, it will heighten each and every one of your senses. While your favorite music fills your ears you may drop by for a culinary experience to envelope your taste buds, or step into our yoga and taichi classes to enhance your sense of touch. With music and activities taking place from 1 PM to Midnight, we guarantee that you will never find yourself without something to do. Participants have the option of camping out under the stars, or lodging in the enchanting city of San Francisco. The festival is sure to please all ages with a mix of 5 different genres ranging from Rock to Indie to Electronic. With our multiple ticket packages, we are sure to have something for you!

Getting to the Festival
There are many forms of transportation to Cerebellum!
Take public transportation, taxi, bicycle, cab, or our shuttle.

Camping
Camp Grounds open June 12 at 5pm.
There are no In/Outs of camping past 7pm nightly.

Security & Safety
Everybody entering Cerebellum will be subject to search. There will be security on call throughout the festival and camp grounds. Our primary goal is to create a safe and secure environment. There will be 24 hour access to the Medical and Lost and Found Tent.

Cerebellum V1.0.1 (July 24, 2013 2:53 PM), Page 3, Record 1

Page 4 – Instructions & VIP Award Notification

The page provides general instructions for the concert attendees. Those attendees with VIP status as determined by their database record, are invited to the “Medula tent” to pickup a free shirt.

Page 5 – Show Recommendations

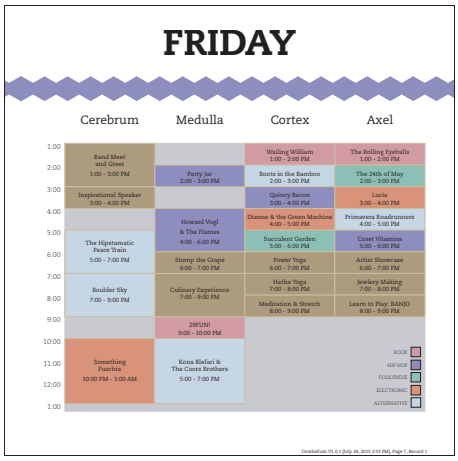
Based upon the customer’s stated music genre preferences in the database, one of five pre-composed pages are selected for inclusion for this page of the booklet.

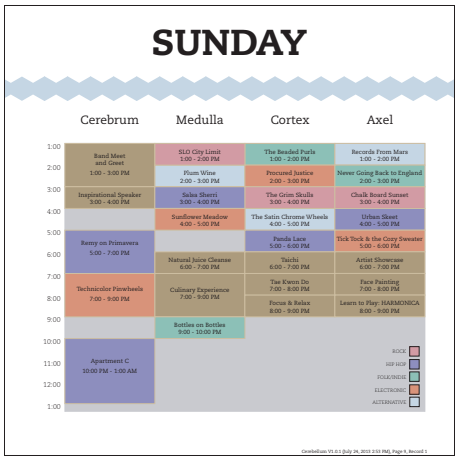
Page 6 – Food & Beverage Recommendations

Based upon the customer's stated food preferences and age in the database, one of ten pre-composed pages are selected for inclusion for this page of the booklet. There are five food choices, each of which has pairings with either alcoholic (over 21 years old) or non-alcoholic beverages (under 21 years old).

Page 7 through 9 – Static Content

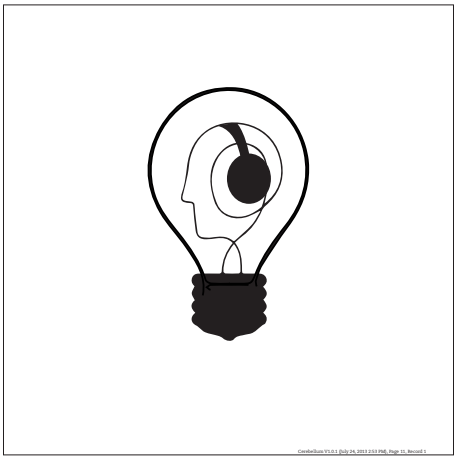
These pages provide the three day concert schedules. It is not customized in any manner.





Pages 10 through 12 – Static Content

These pages contain static, non-customized content including artwork, acknowledgments, and the project attribution box.



Page 13 – Poster

The ledger size poster is individualized with the attendees first name in capital letters near the bottom of the guitar.

PDF/VT-1 Output Files

Container File	Size (bytes)	File Name	Size (bytes)	Pages	Contents
Cerebellum V1.0.1 - 10.zip	4,290,242	Cerebellum V1.0.1 - 10.pdf	4,896,000	130	First 10 records
Cerebellum V1.0.1 - 100.zip	5,601,501	Cerebellum V1.0.1 - 100.pdf	7,896,793	1,300	First 100 records
Cerebellum V1.0.1 - 500.zip	8,021,600	Cerebellum V1.0.1 - 500.pdf	17,698,485	6,500	First 500 records
Cerebellum V1.0.1 - 1000.zip	11,088,352	Cerebellum V1.0.1 - 1000.pdf	30,011,295	13,000	First 1,000 records
Cerebellum V1.0.1 - 5000.zip	34,780,009	Cerebellum V1.0.1 - 5000.pdf	129,469,388	65,000	First 5,000 records
Cerebellum V1.0.1 - 10000.zip	68,329,634	Cerebellum V1.0.1 - 10000.pdf	257,213,808	130,000	First 10,000 records
Cerebellum V1.0.1 - 15000.zip	111,319,372	Cerebellum V1.0.1 - 15000.pdf	402,067,220	195,000	First 15,000 records

Suggested Imposition

Two page types are provided for each record, 12 pages with DPM MediaType of Booklet followed by 1 page with DPM MediaType of Poster.

The Booklet pages are each 6" by 6" plus 0.125" bleed on all four sides. For most sheet-fed digital presses, this page size precludes any imposition scheme beyond 2-up on both sides of a single sheet no smaller than 12.25" in width by 6.5". In terms of standard cut paper sizes, use of US Legal, 8.5" by 14", would be strongly recommended.

The front side of the three sheets for each Booklet would have pages 12 and 1, pages 10 and 3, and pages 8 and 5 respectively. The reverse side of the three sheets would have pages 2 and 11, pages 4 and 9, and pages 6 and 7, respectively.

For web-fed digital presses, these pages could be imposed in a manner similar to that described later in this document for the “Wine” campaign.

Record Page 12 Record Page 1

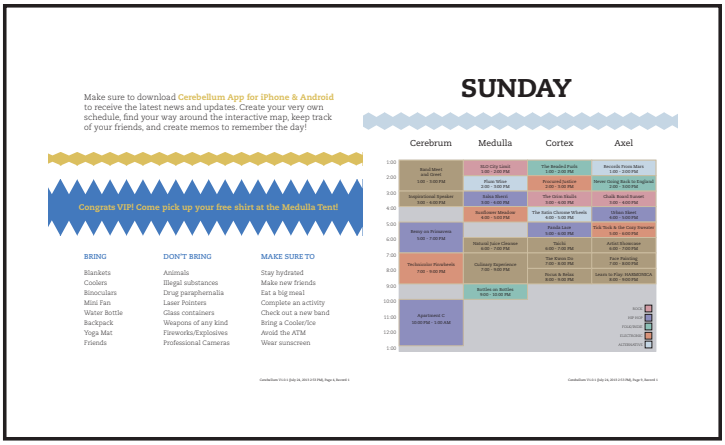
Sheet 1 Front

Record Page 2 Record Page 11

Sheet 1 Back

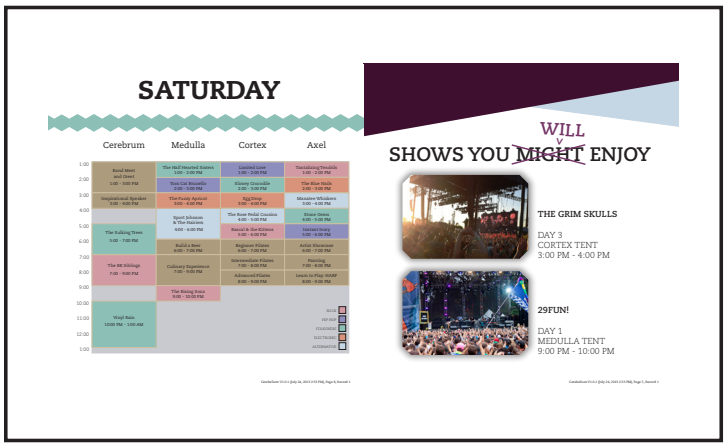
Record Page 10 | Record Page 3

Sheet 2 Front



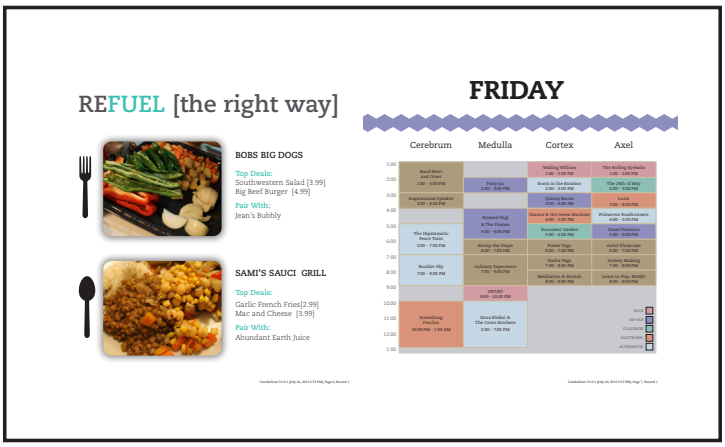
Record Page 4 | Record Page 9

Sheet 2 Back



Record Page 8 | Record Page 5

Sheet 3 Front



Record Page 6 | Record Page 7

Sheet 3 Back

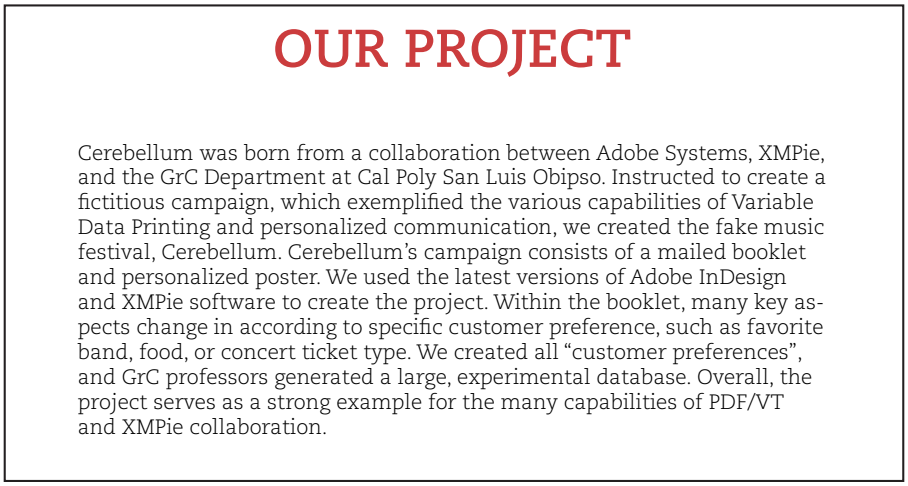
The Poster page is 11" by 17" plus 0.125" bleed on all four sides. In terms of standard cut paper sizes, use of US Tabloid Extra, 12" by 18", would be strongly recommended for printing these one-sided items.

Record Page 13

Sheet 4 (single-sided)

Student Project Documentation

The narrative below describes the students' experiences in implementing the VDP campaign. Minor changes in design and implementation were made to optimize PDF/VT generation and performance following the students' completion of this project.



DATABASE ASSUMPTIONS

Full Name

Address

Email

Age

Gender M F

First time at CEREBELLUM?

Favorite band?

Circle your option below:

Type of ticket
VIP Presale 3 Day 1 Day

Favorite Genre
Electronic Alternative Folk/Indie
Hip-Hop Rock

Lodging
Camping Renting a House Hotel

Favorite food
Asian Fusion Italian American
Vegetarian Mexican

This questionaire was sent to all customers at the time of ticket purchase, before booklet was made and distributed. It is the source of all variable data.

BOOKLET VARIABLES

Blue text for male, red text for female.

Individual Name, Address, City, State, and ZIP

Egg Drop
AWAITS YOU

Day 2
Cortex Tent
3:00 - 4:00 PM

WELCOME TO
CEREBELLUM

Our festival will immerse you in a mind & body musical experience.
This 3-day music extravaganza will not only please your ears, it will heighten each and every one of your senses. While your favorite music fills your ears you may drop by for a culinary experience to envelope your taste buds, or step into our yoga and taichi classes to enhance your sense of touch. With music and activities taking place from 1 PM to Midnight, we guarantee that you will never find yourself without something to do. Participants have the option of camping out under the stars, or lodging in the enchanting city of San Francisco. The festival is sure to please all ages with a mix of 5 different genres ranging from Rock to Indie to Electronic. With our multiple ticket packages, we are sure to have something for you!

Getting to the Festival
There are many forms of transportation to Cerebellum!
Take public transportation, taxi, bicycle, cab, or our shuttle.

Camping
Camp Grounds open June 12 at 5pm.
There are no In/Outs of camping past 7pm nightly.

Security & Safety
Everybody entering Cerebellum will be subject to search. There will be security on call throughout the festival and camp grounds. Our primary goal is to create a safe and secure environment. There will be 24 hour access to the Medical and Lost and Found Tent.

Customer's favorite band.

Blue text for male, red text for female.

Date, Location, and Time correspond accurately to Favorite Band.

Make sure to download **Cerebellum App for iPhone & Android** to receive the latest news and updates. Create your very own schedule, find your way around the interactive map, keep track of your friends, and create memos to remember the day!

Congrats VIP! Come pick up your free shirt at the Medulla Tent!

BRING	DONT BRING	MAKE SURE TO
Blankets	Animals	Stay hydrated
Coolers	Illegal substances	Make new friends
Binoculars	Drug paraphernalia	Eat a big meal
Mini Fan	Laser Pointers	Complete an activity
Water Bottle	Glass containers	Check out a new band
Backpack	Weapons of any kind	Bring a Cooler/Ice
Yoga Mat	Fireworks/Expolosives	Avoid the ATM
Friends	Professional Cameras	Wear sunscreen

WILL
v
SHOWS YOU ~~MIGHT~~ ENJOY

THE FUZZY APRICOT

DAY 2
MEDULLA TENT
3:00 PM - 4:00 PM

PROCURED JUSTICE

DAY 3
CORTEX TENT
2:00 PM - 3:00 PM

Special message appears for VIP ticket holders only.

Two recommended bands based on customer's favorite genre.

REFUEL [the right way]

EGGPLANT HOUSE

Top Deals:
Mushroom Pizza [3.99]
Olive & Pineapple Pizza [4.99]

Pair With:
Fizzy Pip Pop

MOZZ PRINCIPESSA

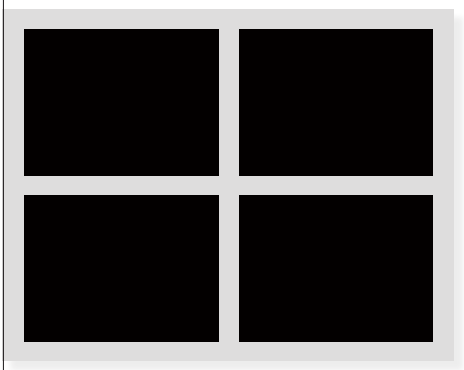
Top Deals:
Caprese Sandwhich [2.99]
Primavera Pasta [3.99]

Pair With:
Blueberry Blaze

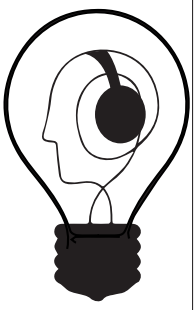
Two recommended restaurants based on customer's favorite type of food. Alcoholic drink pair if customer age is over 21, non-alcoholic drink if under.

FRIDAY

Static band schedule for Friday through Sunday.



SEE **YOU** NEXT YEAR!



Static Page.

All the band names, restuarants, individuals are fictional for this project. We were happy to work with Adobe Systems Inc., Dov Isaacs, Howard Vogl, Lorraine Donegan, Eric Johnson, Colleen Twomey, Harvey Levenson, the Graphic Communication Department, and Cal Poly to bring **Cerebellum** to life!

The CalPoly PDF/VT Test File Suite

This test file suite was designed and created by CalPoly GrC students, Winter and Spring Quarters 2013. The project is sponsored and supported by Adobe Systems Incorporated and XMPie (a Xerox Company).

GrC Graphic Communication
California Polytechnic State University, San Luis Obispo

Adobe

XM PIE

Bri Johnson, Tess Hannel, Allie Powers, Victoria Chau, Jeanie Mordukhay

Static Credit Page.

Poster with personalized first name.

Cerebellum

Bri Johnson, Tess Hannel, Allie Powers, Victoria Chau, Jeanie Mordukhay

Complexity of Variables:
Using XMPie, we varied a number of variables throughout our Cerebellum informational booklet. Each of the pages vary based on data we received from customers from the initial questionnaire that was sent out. Based on a customers gender, age, time visiting Cerebellum, ticket type, lodging, and favorite band, genre, and food the booklet is personalized to each consumer. Throughout the process some of the variables were easier to figure out, while others were not. Overall each of the rules were figured out.

Rule Complexity:
Some of the pages that we used contained so many variables that the rules for XMPie were becoming too complex. To solve this issue, we created varying PDFs of each of the pages and used rules with graphics instead of rules with texts. This solved the issue by allowing each page to change, rather than having XMPie pick up several rules.

REFUEL [the right way]

HERBIVORE PALACE

Top Deals:
House Salad [5.99]
Tofu Meal [4.99]

Pair With:
Grape Stomp Chardonnay

JOHN'S GREEN CAFE

Top Deals:
Pear Green Salad [6.99]
Salad & Bruchetta [7.99]

Pair With:
Small Rabbit Pinot Grigio

REFUEL [the right way]

HERBIVORE PALACE

Top Deals:
House Salad [5.99]
Tofu Meal [4.99]

Pair With:
Fizzy Pop pop

JOHN'S GREEN CAFE

Top Deals:
Pear Green Salad [6.99]
Salad & Bruchetta [7.99]

Pair With:
Jean's Bubbly

REFUEL [the right way]

DOV'S CANTINA

Top Deals:
Two Chicken Tacos [3.99]
Taco Salad [4.99]

Pair With:
Tipsy Tiger Ale

LOS ALTOS TACOS

Top Deals:
Chicken Fajitas [2.99]
Steak Burrito [3.99]

Pair With:
Midnight Rise IPA

Single Database Issue:
We needed to make a new field of variable data for the band schedule, unrelated to the specific person we are sending the brochure to. We wanted to be able to vary the band schedule but were informed we could use only one data field. We figured out a way to work around the problem we just had to add it into the original data source.

Duotone Images:
To add complexity we added four different duotone images: red, light blue, purple and green. When first exporting the PDF we were using images that were of the server instead of the Desktop. This resulted in the green duotone image becoming identical to the purple image. To try and resolve the issue we then moved the photos off the server into the local desktop. This resulted in the image becoming black and white instead of purple. This still did not resolve the issue. Finally by turning each of the images into Pantone colors with duotones it corrected the image and was exported as green.

Dropshadow
We had a similar issue with dropshadows since our images were on the server rather than saved locally. Drop shadows on the food and band photos were replaced by a grey box and black border. Once the images were moved the drop shadows were fixed. They went from appearing overly thick, to how we designed them on screen.

Different Size Documents and Masterpages
We had to create different masterpages to our different size documents. We also had to name them correspondingly: Questionnaire, Book, Poster. It resulted in having three different master pages A, B, and C.

Set Times:

An odd issue that we had was with our data source and rule that linked to the time that a band would be playing. Even though the appropriate time was set in our data source (ex 4:00-5:00) XMPie outputted each PDF with the time of 12/31/12. To resolve this, we added in text into the very last cell of the data source for excel to pick up that the data is text rather than numbers.

Conclusion:

The Cerebellum team learned a lot from this experience. We feel comfortable with the XMPie soft-ware and we are excited to see were this VDP project completed. We hope we have helped make a small difference with testing the software. Thank you for including us in your project.

VDP Campaign: Food

The Food VDP campaign creates a customized eight page recipe and coupon booklet as well as a two-sided recipe postcard for customers of the fictitious food purveyor operating the "West Coast Market" for customers in the western states and the "East Coast Market" for customers in the eastern states. The customization is based upon a 20,000 record database with fictitious names, addresses, and dietary needs and food preferences.

The eight pages of the welcome booklet are each 8" by 8" plus 0.125" bleed on all four sides. The two-sided recipe postcard is 6" by 4.25" plus 0.125" bleed on all four sides.

For each record in the database, there are 10 pages generated in the PDF/VT-1 file. Thus, for the 10 record PDF/VT-1 test file, there are 100 pages, 1000 pages for the 100 record PDF/VT-1 test file, 5000 pages for the 500 record PDF/VT-1 test file, etc. up to 150,000 pages for the 15,000 record PDF/VT-1 test file.

Brief descriptions of the makeup and content of each page as well as imposition suggestions are provided below.

We thank the members of the "West Coast Market" / "East Coast Market" Food team:

Natalie Beaulieu,
Kaley Hansen,
Riley Marshall, &
Kelly Yee

The database was developed and customized by Eric Johnson, Cal Poly GrC's Information Technology Consultant.

Page Descriptions

Page 1 – Booklet Front Cover

The booklet's front cover is customized using either the "east coast" or "west coast" logo depending upon locale of the recipient as well as with the recipient's first name, all retrieved from the database.

Page 2 – Breakfasts Recipe Suggestion

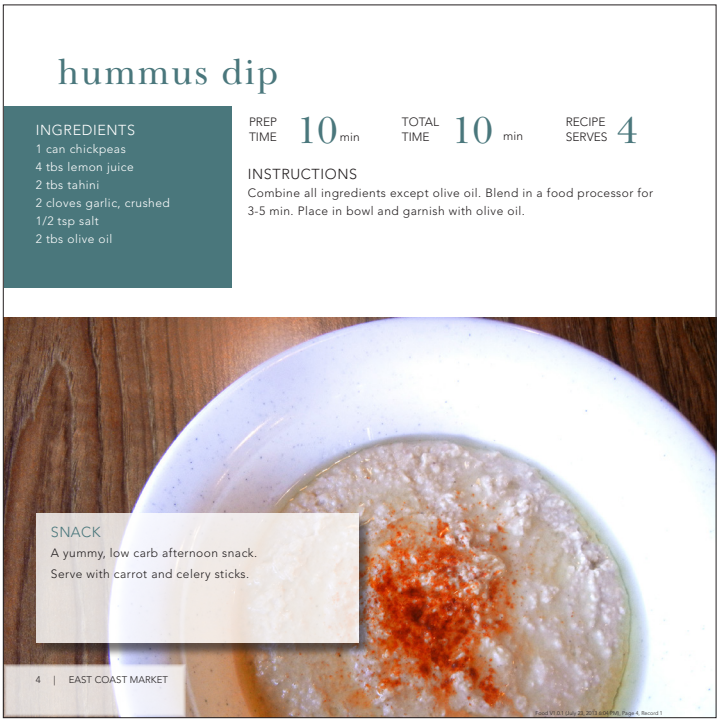
One of six breakfasts along with a recipe for preparation of same is presented on the basis of the recipient's dietary needs as specified in the database. The recipe pages are all fully pre-composed.

Page 3 – Lunch Recipe Suggestion

One of six lunches along with a recipe for preparation of same is presented on the basis of the recipient's dietary needs as specified in the database. The recipe pages are all fully pre-composed.

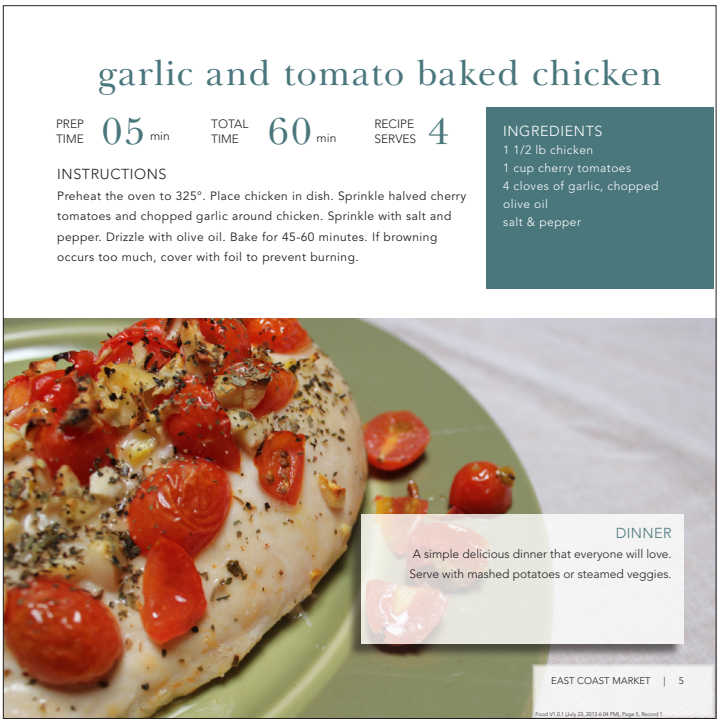
Page 4 – Snack Recipe Suggestion

One of five snacks along with a recipe for preparation of same is presented on the basis of the recipient's dietary needs as specified in the database. The recipe pages are all fully pre-composed.



Page 5 – Dinner Recipe Suggestion

One of six dinners along with a recipe for preparation of same is presented on the basis of the recipient's dietary needs as specified in the database. The recipe pages are all fully pre-composed.



Page 6 – Map & Seasonal Choices

The state name and the map on this page is customized on the basis of the address of the recipient. The produce season name is acquired from the database. The seasonal produce list is derived on the basis of season and state. The market name ("east" or "west") is customized depending upon the locale of the recipient based on the database entry.

Page 7 – Coupons

The market name ("east" or "west") is customized depending upon the locale of the recipient based on the database entry. The coupons are not otherwise localized.

Page 8 – Booklet Back Cover

The booklet's back cover contains the return address using either the "east coast" or "west coast" logo depending upon locale of the recipient as well as the recipient's name and address information, all retrieved from the database. The bar code is generated from the address.

Page 9 – Recipe Postcard Front

The recipe on this card is the same for all recipients. The recipient's first name comes from the database. The market name and logo depend upon the locale of the recipient based on the database entry.

Page 10 – Recipe Postcard Back

The recipe card's back contains the return address using either the "east coast" or "west coast" logo depending upon locale of the recipient as well as the recipient's name and address information, all retrieved from the database. The bar code is generated from the address.

PDF/VT-1 Output Files

Container File	Size (bytes)	File Name	Size (bytes)	Pages	Contents
Food V1.0.1 - 10.zip	13,822,876	Food V1.0.1 - 10.pdf	14,672,902	100	First 10 records
Food V1.0.1 - 100.zip	20,415,499	Food V1.0.1 - 100.pdf	23,109,605	1,000	First 100 records
Food V1.0.1 - 500.zip	22,404,013	Food V1.0.1 - 500.pdf	31,573,272	5,000	First 500 records
Food V1.0.1 - 1000.zip	24,812,718	Food V1.0.1 - 1000.pdf	42,215,872	10,000	First 1,000 records
Food V1.0.1 - 5000.zip	44,066,174	Food V1.0.1 - 5000.pdf	128,296,530	50,000	First 5,000 records
Food V1.0.1 - 10000.zip	68,308,963	Food V1.0.1 - 10000.pdf	236,166,656	100,000	First 10,000 records
Food V1.0.1 - 15000.zip	92,374,448	Food V1.0.1 - 15000.pdf	345,287,851	150,000	First 15,000 records

Suggested Imposition

Two page types are provided for each record, 8 pages with DPM MediaType of Booklet followed by 2 pages with DPM MediaType of PostCard.

The Booklet pages are each 8" by 8" plus 0.125" bleed on all four sides. For most sheet-fed digital presses, this page size precludes any imposition scheme beyond 2-up on both sides of a single sheet no smaller than 16.25" in width by 8.5". In terms of standard cut paper sizes, use of US Tabloid, 11" by 17", would be strongly recommended.

The front side of the two sheets for each Booklet would have pages 8 and 1 and pages 6 and 3, respectively. The reverse side of the two sheets would have pages 2 and 7 and pages 4 and 5, respectively.

For web-fed digital presses, these pages could be imposed in a manner similar to that described later in this document for the “Wine” campaign.

Record Page 8 Record Page 1

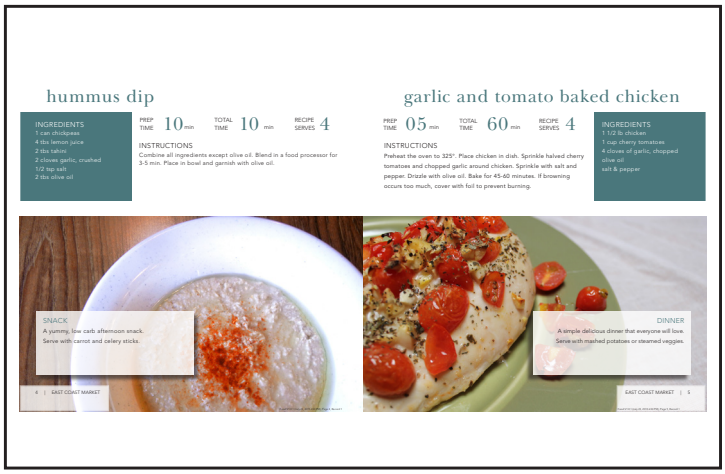
Sheet 1 Front

Record Page 2 Record Page 7

Sheet 1 Back

Record Page 6 Record Page 3

Sheet 2 Front



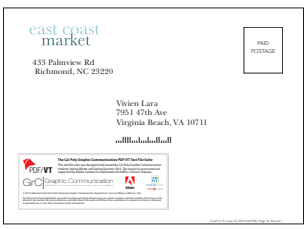
Record Page 4 Record Page 5

Sheet 2 Back

The PostCard pages are each 6" by 4.25" plus 0.125" bleed on all four sides. The front sheet for each PostCard would have page 9 from each record’s pages. The reverse side would have page 10 from each record’s pages.

Record Page 9

Sheet 2 Front

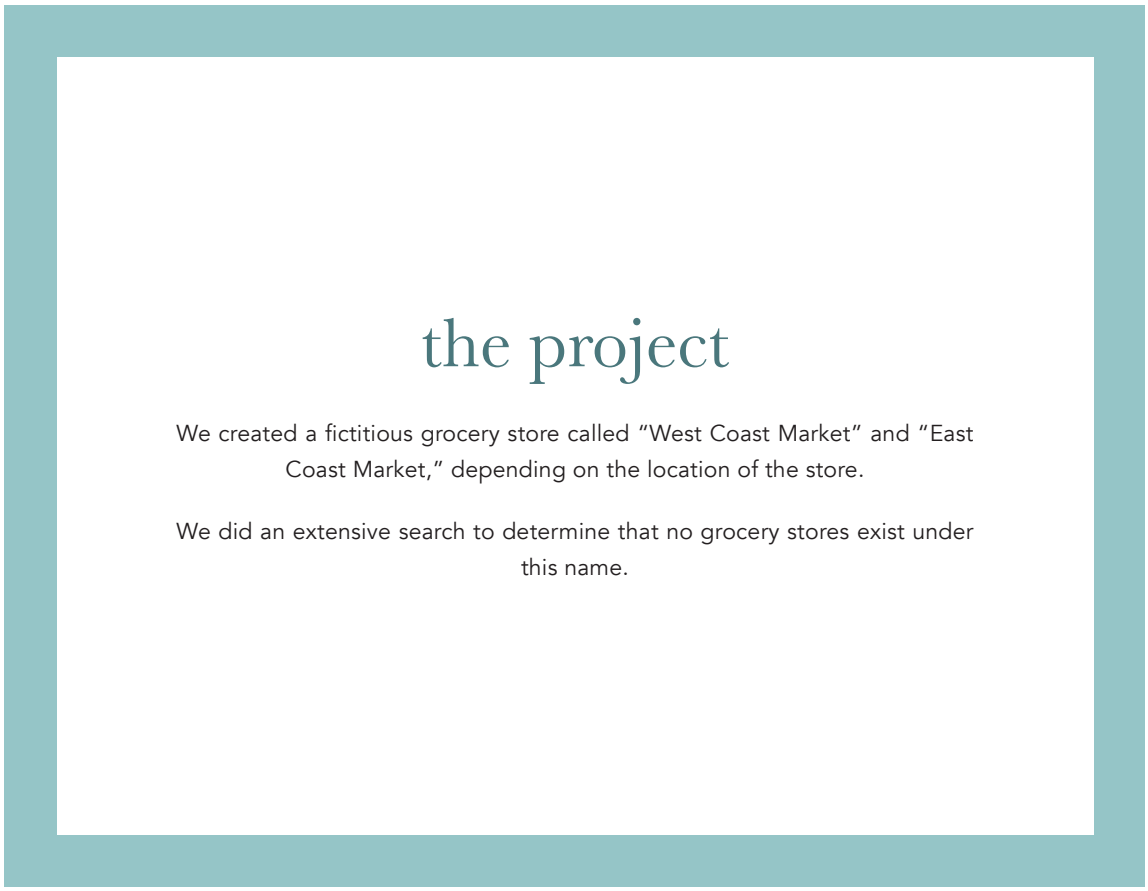


Record Page 10

Sheet 2 Back

Student Project Documentation

The narrative below describes the students' experiences in implementing the VDP campaign. Minor changes in design and implementation were made to optimize PDF/VT generation and performance following the students' completion of this project.



the goal

To launch a personal marketing campaign that will increase consumers to do their grocery shopping at their local Coast Market.

Action items

Send customers personalized recipe booklets based on their dietary habits or needs, determined from previous grocery store purchases.

Send customers shopping list postcards to make shopping at Coast Market an easy and convenient experience.

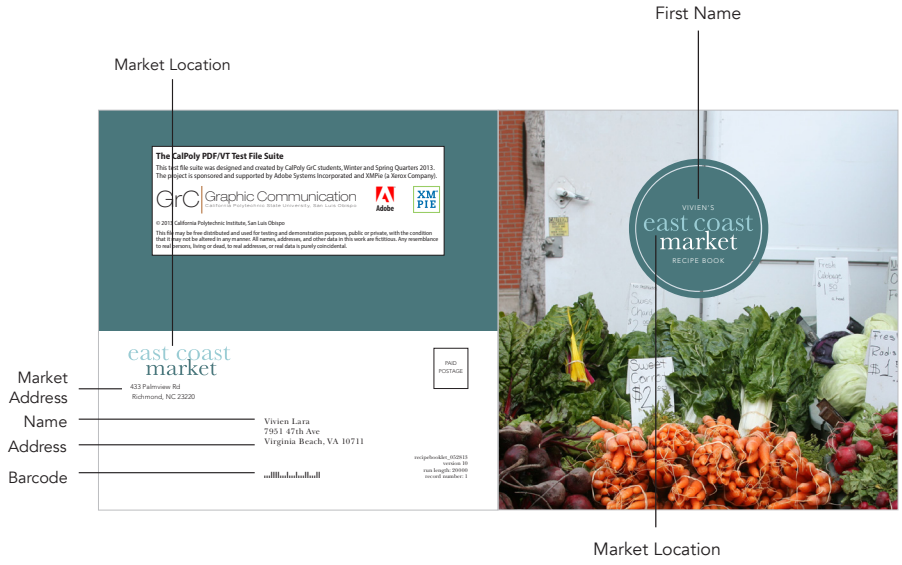
database assumptions

We made assumptions about consumer's dietary needs based on their recent purchases.

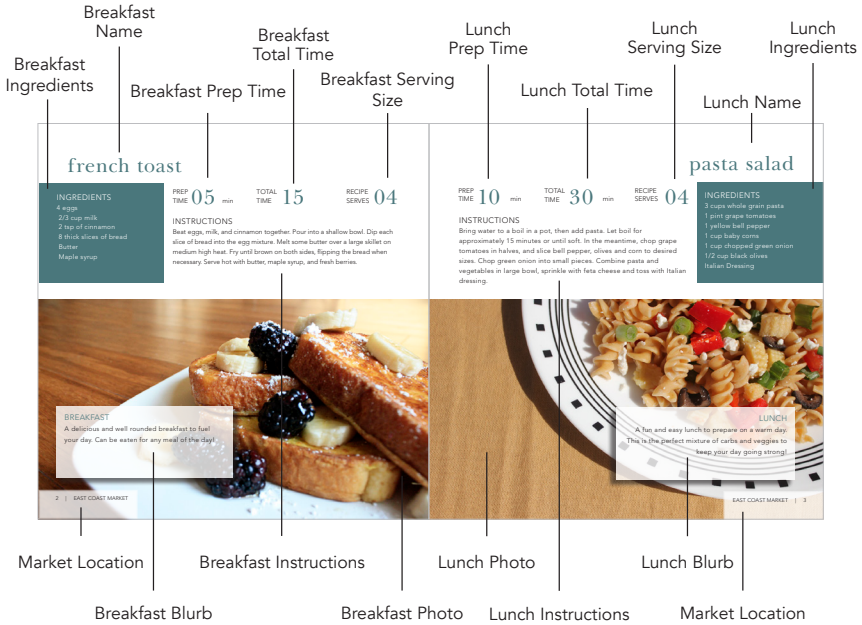
For example, if a consumer purchased tofu, we would send them a recipe booklet for a vegetarian diet, or if a consumer purchased soy milk, we would send them a recipe booklet with dairy free recipes.

We also had their basic information on file including name and address. From their address, we determined the nearest Coast Market location.

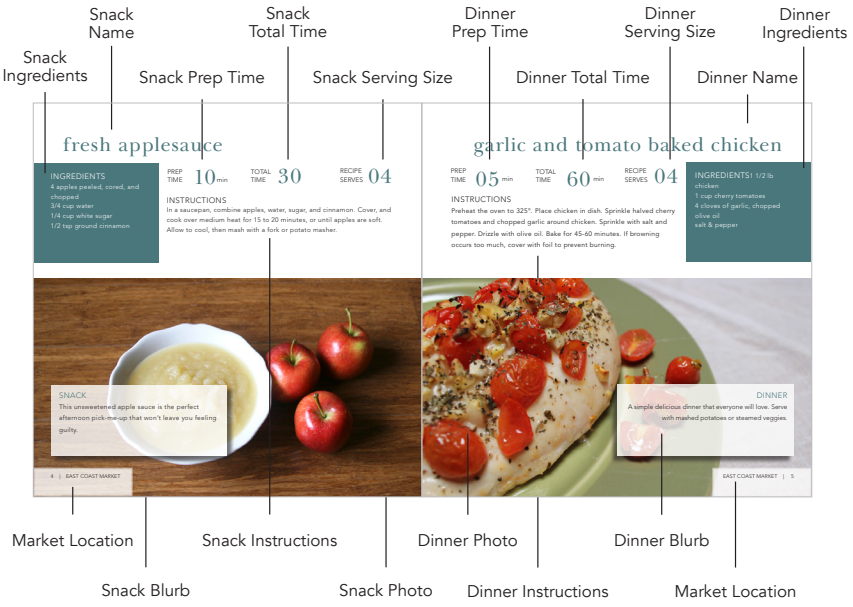
variables: recipe book



variables: recipe book

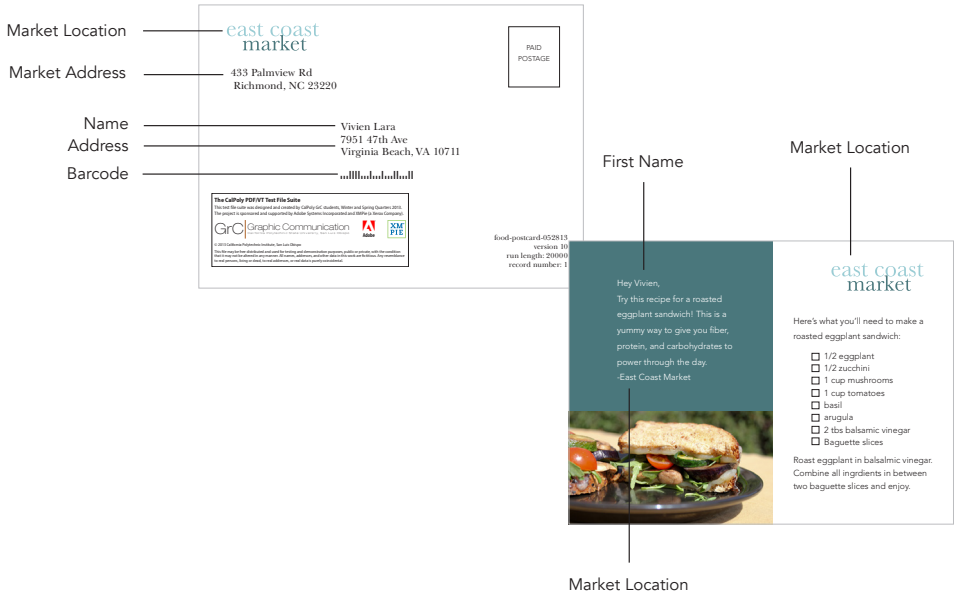


variables: recipe book



variables: recipe book

variables: postcard



Natalie Beaulieu, Kaley Hansen, Riley Marshall, and Kelly Yee

Issues with the Cloud Server

During this project, we had many issues with the cloud server where all of our files were saved. If we opened any native files from the cloud server, the folder would crash and all of the items in the folder would temporarily disappear. Although the contents did not fully delete, the folder would think that no one had permission to access the contents. This proved to be frustrating, because our IT point person, Eric, was the only one who knew how to unlock these permissions, so it would take a few days to sort this out.

Variable Photograph Sizing

In our recipe booklet, we have variable photographs on each page. We encountered a problem with the images coming in at the wrong size. When we resized the pictures in Adobe Photoshop CS5.5 and imported them to Adobe InDesign CS6, we did not experience this. However when we used Adobe Photoshop CS6 to resize the images, XMPie had trouble placing the image at the dimensions we had cropped the image to. The images would be placed as huge images, and when we tried to resize them in Adobe InDesign, the whole bounding box would shrink, so the other images linked in the rule that were resized with Adobe Photoshop CS5.5 would appear very tiny. We fixed this problem by selecting "Fit Content to Frame."

Complex Rules Based on More than 1 Variables

We had this idea of creating a page in our recipe book that showed customers the available produce in their region based on season. This rule was difficult to create multi-tiered rules based on more than one variable. We solved this problem by creating a lengthy rule with 76 "if statements." This process was rather tedious and a feature that allows users to make more complex "if statements" would enable a more efficient process.

Difficulties with Export

When exporting our document to a PDF, some of the photos and text imported incorrectly. We couldn't figure out how to fix this, because the rules written correctly. This issue came about when we started using a larger data source, so maybe XMPie is having trouble functioning with a larger data source. This also happened in Adobe InDesign. The XMPie data would show one record information but the Adobe InDesign document would show a different record's text and images.

Issues with Fonts

When preflighting our files in Adobe Acrobat, the preflight analysis repeatedly showed that we had the incorrect TrueType fonts on almost every page of our document. In Adobe InDesign however, none of these fonts were showing up. After carefully sifting through and searching every piece of text for incorrect fonts and re-applying the appropriate paragraph styles, these fonts still were showing in preflight. We then used the preflight tool in Adobe Acrobat to show where the font problems were specifically and eventually discovered that these fonts were from graphics we had imported from Illustrator. For some reason, our vector map image had fonts attached, although there was no visible text in the graphic, so we had to go through and create outlines for each version of the map in our assets and re-save these changes.

VDP Campaign: Travel

The Travel VDP campaign creates a customized multiple fold two-sided brochure and a two-sided luggage tag for prospective customers of the fictitious *Rendezvous Airway*. The customization is based upon a 20,000 record database with fictitious names, addresses, and travel preferences.

The 18 travel destinations are Big Sur (California), Chicago, China, District of Columbia (Washington), Death Valley (California), Half Moon Bay (California), Ireland, Italy, Los Angeles, Macau, New Orleans, Peru, Puerto Vallarta (Mexico), San Francisco, San Luis Obispo (California), Santiago (Chile), Seattle, and Yosemite National Park (California).

The two pages of the brochure are each 17.2" by 5.25" plus 0.125" bleed on all four sides. The two-sided luggage tag is 2.25" by 4" plus 0.125" bleed on all four sides.

For each record in the database, there are 4 pages generated in the PDF/VT-1 file. Thus, for the 10 record PDF/VT-1 test file, there are 40 pages, 400 pages for the 100 record PDF/VT-1 test file, 2000 pages for the 500 record PDF/VT-1 test file, etc. up to 60,000 pages for the 15,000 record PDF/VT-1 test file.

Brief descriptions of the makeup and content of each page as well as imposition suggestions are provided below.

We thank the members of the Rendezvous Airway travel team:

Vanessa Dao,
Fiona Fung,
Kate Johnson, &
Natalie Rich

The database was developed and customized by Eric Johnson, Cal Poly GrC's Information Technology Consultant.

Page Descriptions

Page 1 – Brochure Front

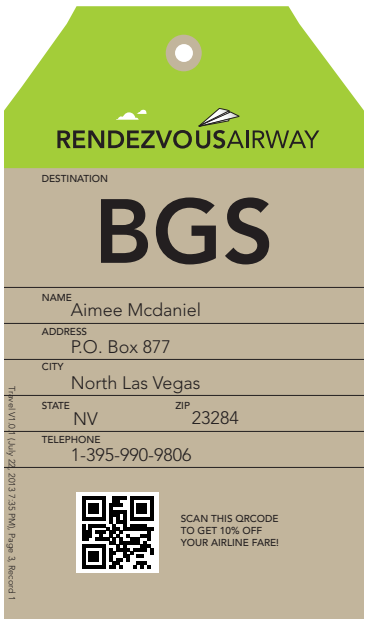
Depending upon which of the 18 Rendezvous Airway destinations is specified in the corresponding database record, the appropriate pre-composed page with a photo from that particular destination is used as the page background. This background also includes information about the destination as well as suggested activities. The page is further customized with the prospective traveler's name, cost information based on information in the database as to the prospect's travel interests, and data as to the distance to the nearest airport. Although this is nominally the brochure's "front," the brochure has multiple folds which belie what is the front, back, inside, and/or outside!

Page 2 – Brochure Back

Depending upon which of the 18 Rendezvous Airway destinations is specified in the corresponding database record, the appropriate pre-composed page with photos from that particular destination is used as the page background. This background also includes the project attribution box. The page is further customized with the name and contact phone number of a Rendezvous Airway agent, also extracted from the database.

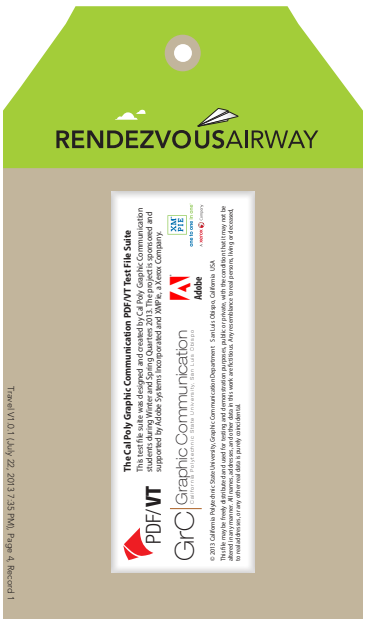
Page 3 – Luggage Tag Front

In addition to the Rendezvous Airway logo, the front of the luggage tag is personalized with the airport destination code, the traveler's name and address information, and the traveler's phone number. The QR code is currently static.



Page 4 – Luggage Tag Back

The back of the luggage tag is constant, i.e., no variable elements. It contains the Rendezvous Airway logo and the project attribution box.



PDF/VT-1 Output Files

Container File	Size (bytes)	File Name	Size (bytes)	Pages	Contents
Travel V1.0.1 - 10.zip	27,033,909	Travel V1.0.1 - 10.pdf	27,986,727	40	First 10 records
Travel V1.0.1 - 100.zip	53,297,905	Travel V1.0.1 - 100.pdf	56,703,222	400	First 100 records
Travel V1.0.1 - 500.zip	68,284,756	Travel V1.0.1 - 500.pdf	80,641,751	2,000	First 500 records
Travel V1.0.1 - 1000.zip	86,920,861	Travel V1.0.1 - 1000.pdf	110,407,021	4,000	First 1,000 records
Travel V1.0.1 - 5000.zip	234,841,138	Travel V1.0.1 - 5000.pdf	347,485,178	20,000	First 5,000 records
Travel V1.0.1 - 10000.zip	420,485,849	Travel V1.0.1 - 10000.pdf	644,888,523	40,000	First 10,000 records
Travel V1.0.1 - 15000.zip	595,273,040	Travel V1.0.1 - 15000.pdf	926,000,531	60,000	First 15,000 records

Suggested Imposition

Two page types are provided for each record, 2 pages with DPM MediaType of Brochure followed by 2 pages with DPM MediaType of Luggage Tag.

The Brochure pages are each 17.25" by 5.25" plus 0.125" bleed on all four sides. For efficiency and ease of finishing, these pages should be printed 2-up representing the Brochure pages for *two* separate records on both sides of a single sheet no smaller than 17.5" in width and 11.5" in height. In terms of standard cut paper sizes, use of US Tabloid Extra, 12" by 18",would be strongly recommended.

The front sheet for each Brochure would have page 1 for records *1* and *n+1*. The reverse side would have page 2 for records *1* and *n+1*.

Records 1 & 2 – Sheet 1 Front

Records 1 & 2 – Sheet 1 Back

The Luggage Tag pages are each 2.25" by 4" plus 0.125" bleed on all four sides. For efficiency and ease of finishing, these pages should be printed 2-up representing the Luggage Tag pages for *two* separate records on both sides of a single sheet no smaller than 5.5" in width and 4.5" in height.

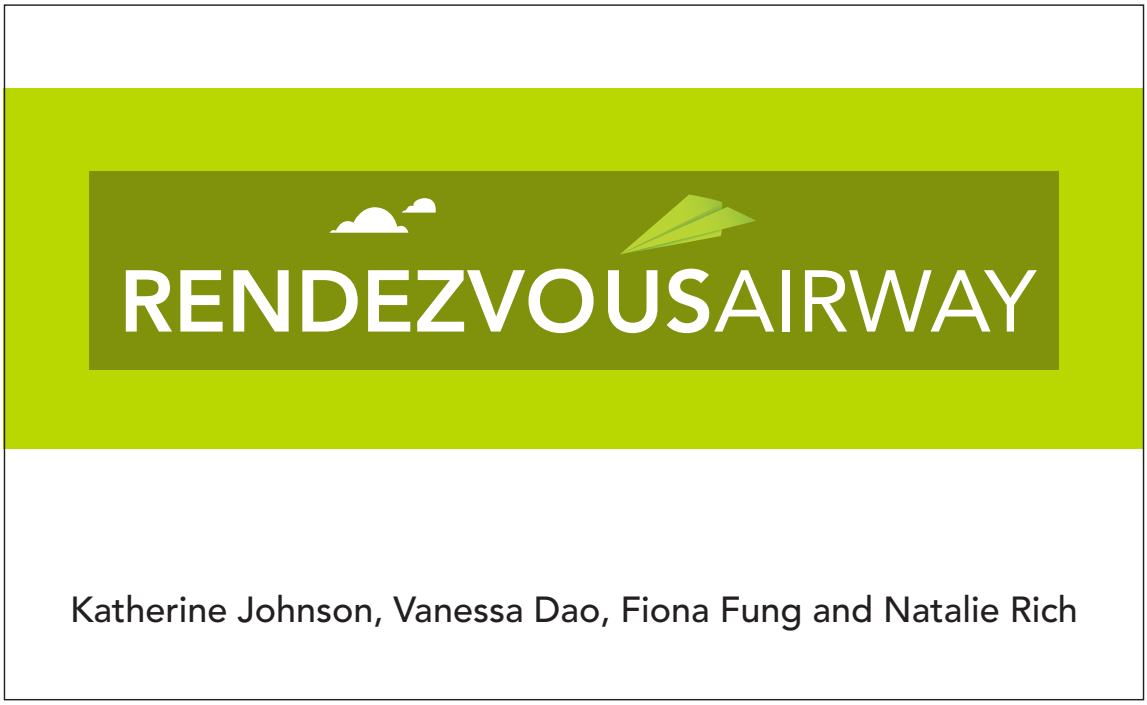
The front sheet for each Luggage Tag would have page 3 for records *1* and *n+1*. The reverse side would have page 4 for records *1* and *n+1*.

Records 1 & 2 – Sheet 2 Front

Records 1 & 2 – Sheet 2 Back

Student Project Documentation

The narrative below describes the students' experiences in implementing the VDP campaign. Minor changes in design and implementation were made to optimize PDF/VT generation and performance following the students' completion of this project.



THE GOAL

Increase Rendezvous Airway's profits by launching a personalized marketing campaign to get clients to fly with our airline and book tickets through us.

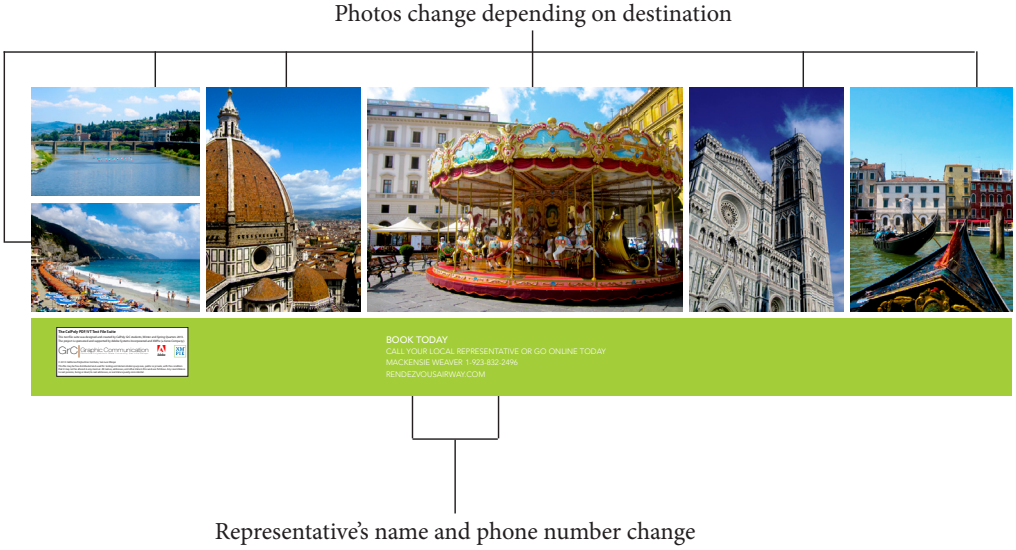
DATABASE ASSUMPTIONS

We assumed we were targeting customers who had already flown with us at least once so that we had their basic information on file:

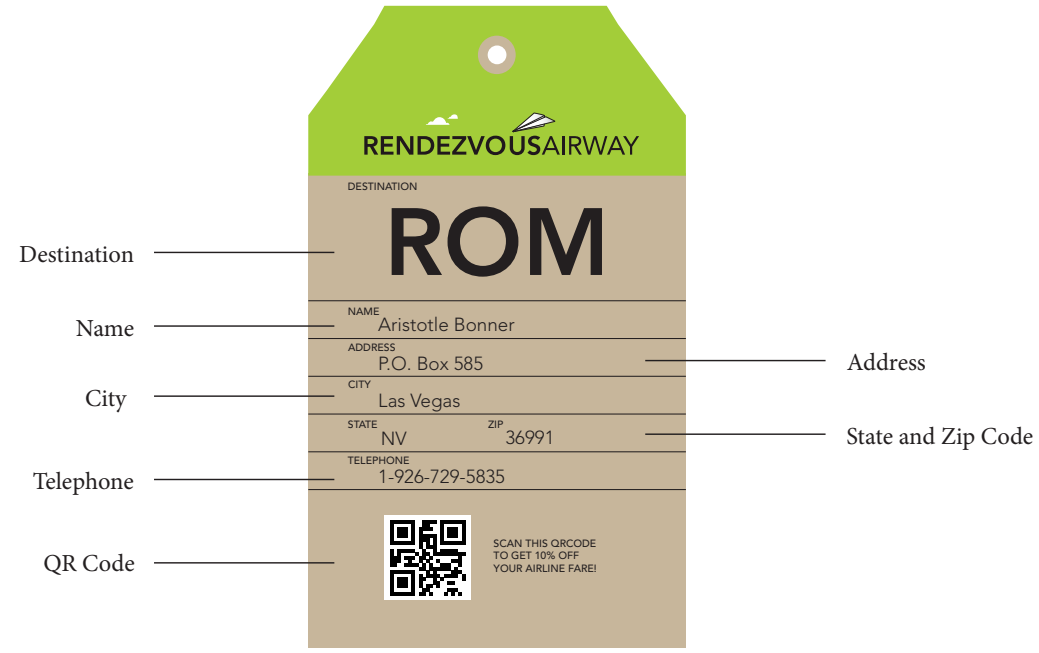
- First and last name
- Email address
- Phone number
- Home address

VARIABLES: BROCHURE

VARIABLES: BROCHURE



VARIABLES: TAG



RENDEZVOUSAIRWAY

RENDEZVOUSAIRWAY

Katherine Johnson, Vanessa Dao, Fiona Fung & Natalie Rich

COMPLEXITY OF VARIABLES:

We had large ambitions for the complexity of the variables we wanted to use. However we weren't able to implement all our ideas. We wanted to have a customized map from the person's home to the airport but because we had to use fictitious addresses this wasn't possible. We also wanted to create formulas to extrapolate information from the questionnaire to use for the brochure. We wanted the person's spending power to match their destination type (domestic vs. foreign) and the cost of the ticket to match the air mileage. But because we're not a real airline company, we didn't have enough information to make this happen. We ended up using randomly generated numbers for the amount of days, the cost, the number of travelers, the miles and minutes from your nearest airport. This wasn't ideal, but it was the best work-around we could come up with, without having access to real information and computational power.

ERROR MESSAGE LANGUAGE:

We learned how to use XMPie in the way most people learn how to use programs, by playing with it and trying things, not in a formal classroom setting with someone teaching us how to do everything.

So the first time we attempted to export to PDF, we kept trying to do it through the regular InDesign export feature. Each time this resulted in an error message that used technical language that meant nothing to us. Then the program would crash, and quit unexpectedly on us. This was very frustrating. We finally went and found our teacher and he taught us that we had to export through XMPie. This isn't intuitive to the user and thus the error message should use simple language redirecting the user to use the XMPie feature to export to PDF. Or if possible, XMPie should figure out a way to allow the user to export through the regular InDesign feature.

MULTIPLE PAGE SIZES IN ONE DOCUMENT:

When we first attempted to export to PDF, the document would only recognize one of the page dimensions. This resulted in our second page type being imposed on the first page type size, which cut off content.

UNABLE TO MAKE SIMPLE FEATURES DYNAMIC:

XMPie is championed for wide array of content that can be made dynamic. Text of all sizes and lengths and images can all be made dynamic. However, simple features like a single vector line couldn't be made dynamic from record to record if created as part of the InDesign layout.

We had problems with readability because we placed text over an image. Our solution was to change the color of the text with each different image. We were able to do this using XMPie because text color/style/etc. can be varied using a rule. However, we also had a simple vector line that was part of the design below the text. We needed the line color to vary to match the text in each record. XMPie doesn't have the capability to do this. We would have had to use an intensive work-around of recreating a line in each color in Illustrator. Then we would have to place the line as an image in InDesign if we wanted the color of the line to vary with the text color. This is a waste of time and a lot of work for a very simple design feature.

BETTER DESIGNED CONTROL PANELS:

We wanted more features in the control panels to help the user experience. At a certain point we had so many rules from older versions that we didn't know what was what. It would be very help to have built in visual hierarchy (such as a set of unmodified rules) and then the modified rules as copies of the unmodified rules with a easy, fast, way to tell the difference between them. It would also have been extremely helpful to be able to create folders to put the rules in to keep everything organized in a large document that's been modified over many drafts.

The XMPie panel does not expand infinitely. There is a stopping point and we wanted to expand it as long as our monitor so we can see all of our rules at once. We also want a search feature to be able to search the files. XMPie should be able to dynamically update fields. Trash can button in XMPie for rule deletion so you can click and drag.

VDP Campaign: Wine

The Wine VDP campaign creates a customized eight page welcome booklet and a two-sided recipe card for new members of the fictitious *Vin Noir* wine association. The customization is based upon a 20,000 record database with fictitious names, addresses, and wine preferences.

The eight pages of the welcome booklet are each 8.5" by 5.5" plus 0.125" bleed on all four sides. The two-sided recipe card is 5.25" by 3.25" plus 0.125" bleed on all four sides.

For each record in the database, there are 10 pages generated in the PDF/VT-1 file. Thus, for the 10 record PDF/VT-1 test file, there are 100 pages, 1000 pages for the 100 record PDF/VT-1 test file, 5000 pages for the 500 record PDF/VT-1 test file, etc. up to 150,000 pages for the 15,000 record PDF/VT-1 test file.

Brief descriptions of the makeup and content of each page as well as imposition suggestions are provided below.

We thank the members of the Vin Noir Wine team:
Krisha Agatep,
Jessica Revesz,
Mallory Willard, &
Grace Wu

The database was developed and customized by Eric Johnson, Cal Poly GrC's Information Technology Consultant.

Page Descriptions

Page 1 – Booklet Cover

The cover page of the booklet has one of two fully pre-composed backgrounds, each of which has the Vin Noir logo and a cream-colored accent line superimposed on a duotone depicting a wine and cheese display. Members with a preference for red wines have a burgundy-based duotone. Members with a preference for white wines have an olive-based duotone. This color scheme, based on member wine "color" preference follows for the remaining pages of the booklet and for the recipe card.

The member's reversed-out first name in a translucent box is placed on top of the pre-composed background.

Page 2 – Wine Barrels Photo

This page features a a cream-colored accent line superimposed on a photograph of wine barrels as either a burgundy or olive-based duotone per the member's preference for red or white wines respectively.

Page 3 – Welcome

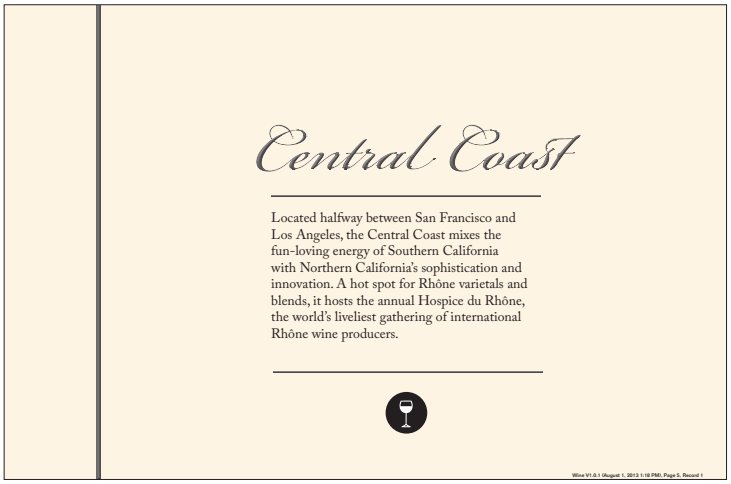
The text on this page is customized with the customer's name, city, and wine region associated with the customer taken directly from the database.

Page 4 – Vineyard Photo

This page features a cream-colored accent line superimposed on a photograph of a vineyard as either a burgundy or olive-based duotone per the member's preference for red or white wines respectively.

Page 5 – Wine Region Description

Depending upon the wine region associated with the customer - Central Coast, Napa Valley, or Sonoma Valley, one four pre-composed pages is used with a description of that region.

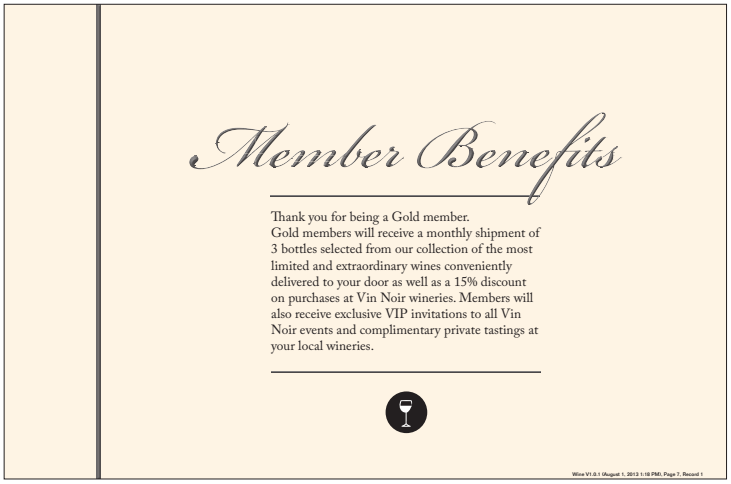


Page 6 – Wine Rack Photo

This page features a cream-colored accent line superimposed on a photograph of a wine rack as either a burgundy or olive-based duotone per the member's preference for red or white wines respectively.

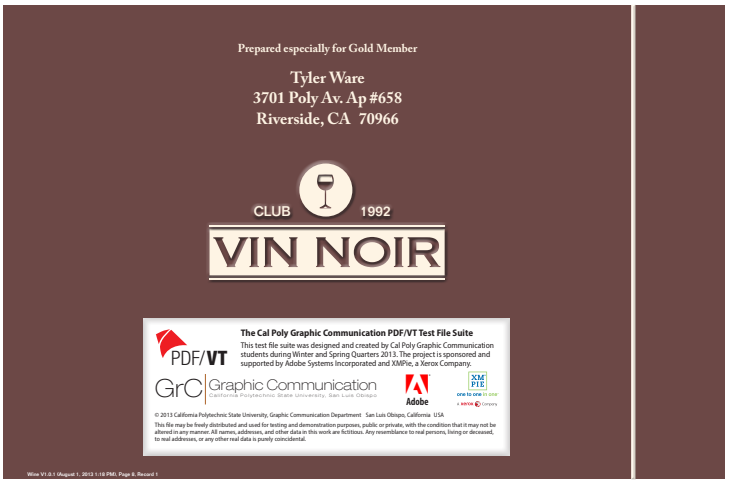
Page 7 – Member Benefits

The text on this page is customized with a paragraph associated with the member's status level – platinum, gold, or silver – describing the particular benefits derived by virtue of that status.



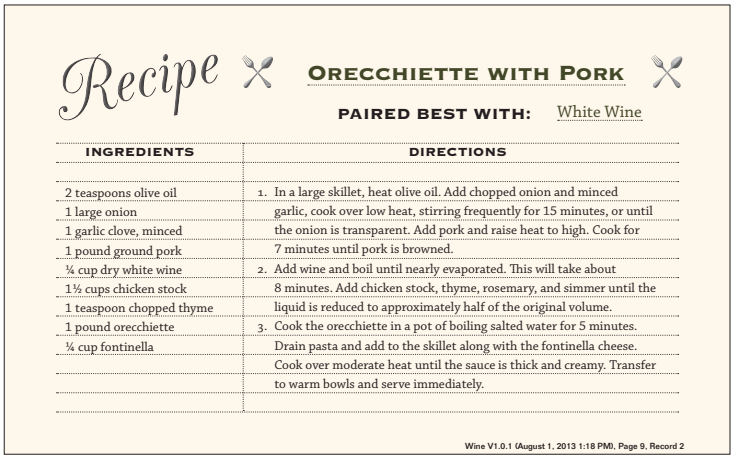
Page 8 – Booklet Back Cover

The booklet's back cover is a pre-composed Vin Noir logo, the project attribution box, a cream-colored accent line superimposed on a solid burgundy or olive-based background per the member's preference for red or white wines respectively. The top of the page is customized with the customer's name and address as well as their membership status.



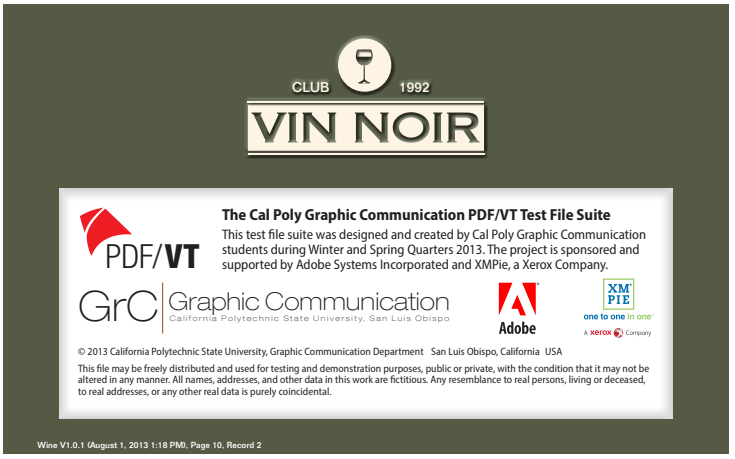
Page 9 – Recipe Card Front

The choice of recipe card for a particular customer is based on two factors, the first being the preference for red or white wines and the second being a random selection from five recipes associated with foods that go with red or white whites respectively (ten recipes total). Due to the need to have consistent "randomization" of the recipes, the randomization was normalized in the database and does not use XMPie's random number generator.



Page 10 – Recipe Card Back

The recipe card's back cover is a pre-composed Vin Noir logo and the project attribution box superimposed on a solid burgundy or olive-based background per the member's preference for red or white wines respectively.



PDF/VT-1 Output Files

Container File	Size (bytes)	File Name	Size (bytes)	Pages	Contents
Wine V1.0.1 - 10.zip	53,854,115	Wine V1.0.1 - 10.pdf	54,601,189	100	First 10 records
Wine V1.0.1 - 100.zip	54,841,962	Wine V1.0.1 - 100.pdf	56,799,795	1,000	First 100 records
Wine V1.0.1 - 500.zip	56,047,715	Wine V1.0.1 - 500.pdf	63,126,744	5,000	First 500 records
Wine V1.0.1 - 1000.zip	57,490,551	Wine V1.0.1 - 1000.pdf	71,042,198	10,000	First 1,000 records
Wine V1.0.1 - 5000.zip	69,965,844	Wine V1.0.1 - 5000.pdf	135,255,448	50,000	First 5,000 records
Wine V1.0.1 - 10000.zip	84,876,460	Wine V1.0.1 - 10000.pdf	215,622,170	100,000	First 10,000 records
Wine V1.0.1 - 15000.zip	100,054,234	Wine V1.0.1 - 15000.pdf	296,674,740	150,000	First 15,000 records

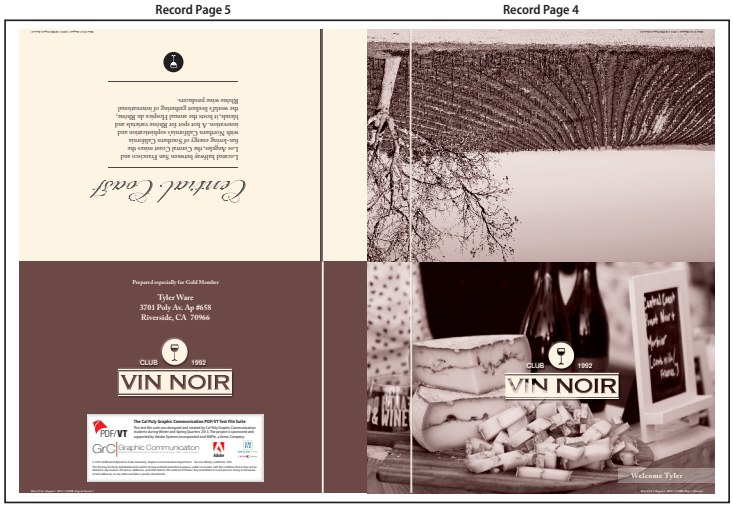
Suggested Imposition

Two page types are provided for each record, 8 pages with DPM MediaType of Booklet followed by 2 pages with DPM MediaType of Card.

The Booklet pages are each 8.5" by 5.5" plus 0.125" bleed on all four sides. For efficiency and ease of finishing, these pages should be printed 4-up on both sides of a single sheet no smaller than 17.25" in width (2 pages, each 8.625" including outer bleed – inner bleed must be masked) and 11.5" in height (2 pages, each 5.75" including bleed on top and bottom). In terms of standard cut paper sizes, use of US Tabloid Extra, 12" by 18", would be strongly recommended.

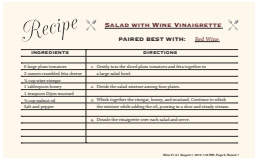
The front sheet for each Booklet would have pages 3, 6, 7, and 2 (clockwise) from each record's pages. The reverse side would have pages 5, 4, 1, and 8 (also clockwise) from each record's pages.

Sheet 1 Front



Sheet 1 Back

The Card pages are each 5.25" by 3.25" plus 0.125" bleed on all four sides. The front sheet for each Card would have page 9 from each record's pages. The reverse side would have page 10 from each record's pages.



Record Page 9

Sheet 2 Front

Record Page 10

Sheet 2 Back

Student Project Documentation

The narrative below describes the students' experiences in implementing the VDP campaign. Minor changes in design and implementation were made to optimize PDF/VT generation and performance following the students' completion of this project.

THE MARKETING CAMPAIGN

We created a variable data marketing campaign composed of a new member welcome booklet and a recipe card new members would receive in the mail after applying to become a member and filling out a survey of questions.

The purpose of the marketing campaign is to give our new customers information about the association and to provide them with beautiful personalized marketing materials that are worth holding on to and keeping out of the trash.

CUSTOMER DATABASE

- Customer name, address, gender, member status, email
- There are three membership options - silver, gold, platinum
- There are three regions - Napa, Sonoma, Central Coast
- Member have a wine preference - red or white

MARKETING CAMPAIGN | THE VARIABLES

Each document varies according to the customer database.

Cover photo varies duotones depending on gender of customer

Customer's first name personalization

BOOKLET | COVER

MARKETING CAMPAIGN | THE VARIABLES

BOOKLET | WELCOME PAGE

Paragraph varies according to customer's location (address) and closest wine region

MARKETING CAMPAIGN | THE VARIABLES

Central Coast

First recognized at the Judgment of Paris in 1976, Napa Valley's world-renowned wines have found an equal match in the region's cuisine. From Ubuntu's dynamic garden fare to Thomas Keller's Michelin-starred French Laundry and Tacos Michoacan's casual roadside spice, you'll find tasty cuisine around every corner. Vin Noir only supplies the most exquisite Napa wines to our members.

BOOKLET | WINE REGION DESCRIPTION

Paragraph varies wine region descriptions according to customer's membership info

MARKETING CAMPAIGN | THE VARIABLES

Member Benefits

Thank you for being a Gold member. Gold members will receive a monthly shipment of 3 bottles selected from our collection of the most limited and extraordinary wines conveniently delivered to your door as well as a 15% discount on purchases at Vin Noir wineries. Members will also receive exclusive VIP invitations to all Vin Noir events and complimentary private tastings at your local wineries.

BOOKLET | MEMBER BENEFITS DESCRIPTION

Paragraph varies according to customer's membership level: silver, gold, platinum

MARKETING CAMPAIGN | THE VARIABLES

Recipe

GRILLED FLANK STEAK

PAIRED BEST WITH: red wine

INGREDIENTS	DIRECTIONS
1 1/2 tablespoons Sichuan peppercorns	1. In a small skillet, toast the peppercorns over moderately high heat until fragrant, about 30 seconds. Transfer to a spice grinder and let cool completely. Grind to a powder and transfer to a small bowl. Stir in the wine, black bean–garlic sauce and sugar.
3 tablespoons dry white wine	
2 1/2 tablespoons Chinese black bean–garlic sauce	
2 teaspoons sugar	2. Light a grill. Arrange the steaks on a baking sheet and rub them all over with the sauce. Let stand for 10 minutes.
Three 1 1/4-pound flank steaks	
Salt	3. Season the flank steaks lightly with salt. Grill over moderately high heat, turning once, until the steaks are medium-rare, about 8 minutes. Transfer the steaks to a work surface and let rest for 5 minutes. Thinly slice the meat across the grain and serve.

Recipe

BAKED ONION SOUP

PAIRED BEST WITH: white wine

INGREDIENTS	DIRECTIONS
6 tablespoons unsalted butter	1. Heat 4 tablespoons of butter and oil in saucepan, add the onions, garlic, thyme, cover with wet baking paper and a lid and cook on low heat for 1 hour. Stir the onions from time to time, to prevent them burning. Season to taste.
1 tablespoon olive oil	
2 1/4 lb Spanish onions	
1 garlic clove, finely chopped	
1 teaspoon soft thyme leaves	
Salt and fresh black pepper	2. Add wine, stock and sugar, then bring to the boil and simmer for 15 minutes. Preheat the oven to 400°F.
2/3 cup red wine	
2 pintes beef stock	
1 teaspoon superfine sugar	3. Place the bread slices on top, sprinkle with Gruyère and drizzle remaining butter over the cheese. Bake for 15 minutes.
8 X 1 inch slices of baguette	
1 1/2 cups Gruyère cheese	

RECIPE CARDS

There are five recipes that pair well with red wines and five recipes that pair well with white wines. There are ten recipes in total. Customers receive a randomized recipe according to their red or white wine preference.

CLUB 1992

VIN NOIR

CLUB 1992

VIN NOIR

GRACE WU | MALLORY WILLARD | KRISHA AGATEP | JESSICA REVESZ

CHALLENGES ENCOUNTERED

PARAGRAPH FORMATTING

One of the biggest issues we noticed with XMPie and InDesign was the inability to maintain formatting with variable paragraphs. For example, we wrote a variable paragraph about the each different wine region in separate documents in Microsoft Word. We changed the font and font size using InDesign's paragraph styles for one record, however, when scanning through the other records, the paragraph style settings weren't retained. We discovered that we had to change the paragraph style within each Word document in order to change the text formatting for all the records.

We would like the ability to format our variable paragraphs inside InDesign rather than physically editing each individual word document. If a project had a lot of paragraphs in a document it would be very inefficient going back and forth between InDesign and Word.

EXPORTING RECORDS

Another limitation of XMPie was its inability to export 20,000 records of our variable document in PDF format. We recorded that it took about ten minutes to get to record number 1,199. Because the process was inefficient, we were not able to export all 20,000 records. Businesses, companies, and organizations have many customers they want to market to so we would like to see XIMPie achieve exporting at least 20,000 PDF records. As of now, XIMPie's is only useful for businesses with a smaller customer base.

RANDOMIZATION RULE

When creating a randomization rule for our recipe cards we noticed that each file had to have a number as its file name in order for the rule to work. This could be a problem for those who are unfamiliar with the randomization rule and do not follow the proper naming conventions for the rule.