RYERSON UNIVERSITY

&

Xplor International

The Electronic Document Systems Association

In Association with

SPIRIT V ICTORY

CORPORATION

Introduction to Output Management Systems

EDA Certification Course
Curriculum Outline and Abstract
Version 2.0
August 18th, 2016

Michael Sutton EDP

[Guest Instructor]

0.0 Table of Contents

Abstract

1.0 Basics

1.1 Teaching Schedule

This Course will be taught over a 5-day period. We will have lecture material in the morning sessions to introduce the student to the conceptual framework. Afternoon sessions will consist of hands on laboratory work, where the student uses a PC or Mac workstation to link to, and build practical solutions between, a number of UNIX and Windows servers. On the second and subsequent days, we will learn about more advanced concepts, and build more advanced integrations.

The intent of this course is to give the student some practical exposure to electronic document composition tools, and how to manage output management infrastructures for any size of business or application. The student will learn about integration, how to use tool-sets effectively, but are not expected to become fully fledged programmers. That is not the focus of these courses.

1.2 Prerequisites

The student should have:

1. Some basic knowledge of using a PC and/or Mac workstation, and how the command line is used
2. Some knowledge of a computer language and structured programming concepts is a plus [However labs will use pre-canned components requiring minor amendments as much as possible]
3. Knowledge of some Windows batch commands is an asset
4. Knowledge of basic UNIX shell processing is also an asset
5. Understanding of PDF documents and the Adobe Reader
6. Familiarity with Adobe Acrobat is a plus, but we will teach some basic options

1.3 Instructor

Michael Sutton is a Ryerson graduate in Computer Science. He is a certified Electronic Document Professional through Xplor, the Electronic Document Systems Association. He has had a 40 year career in print and document technology. He worked for the City of Toronto, building document solutions for Finance/HR, Court Services, Parking Control, MICR documents. He served on the Adobe Joint Technology Council for 7 years, working with developers like Dr. John Gaffney, the inventor of Postscript. He has also worked in the Collectible Card Industry with Fleer/Skybox, and the electronic publishing industry with Savanti Press. He is now the Chief Technology Officer for Spirit Victory Corporation.

1.4 The Electronic Document Systems Association

EDA or Electronic Document Associate is the recognized entry-level certification level for a document professional with Xplor, aka the Electronic Document Systems Association. Normally intended to be taught to professionals with two-years practical working experience, we are making this certification available to degree students in a four or five year programs in graphics, print technology, document composition or related programs. These courses often offer practical work, as well as co-operative program immersion. On that basis, this program is available to Ryerson GCM or Computer Science students interested in an early technical certification when entering the workforce.

Xplor is a world-wide association of business members, software and hardware vendors and professionals working in the electronic document composition field, and the related fields of print and output management. Xplor, through its own Xplor Document University [XDU] and associated Acadami programs, offers both qualification and certification in electronic document systems, at increasing levels. Spirit Victory Corporation as a new education partner will be the first company to introduce hands-on EDA certification programs through Xplor. Many vendors are interested in this program, since there is often little practical exposure or experience with these technologies.

2.0 Course Notes

2.1   Introduction

One of the most compelling challenges today in business computing is how to assemble chunks of raw application data into coherent documents. Documents are typified as the "bread and butter" of business, but their effective creation and usage is poorly understood. Companies often poorly manage how these documents are assembled, refined, flow to devices and to other portals, and on to their customers. Companies would like to reduce print costs by using more electronic delivery mechanisms, but don't well understand the methods to do this. Companies also often struggle around regulatory compliance issues with their documents, such as meeting the AODA requirement for Accessible documents.

Outside of normal printing, electronically composed documents must be sent to other computer systems for delivery through more advanced mechanisms such as web portals, e-mail attachments, and/or archival and retrieval systems. Much of this high-end computing is done on mainframes, or UNIX or Windows server systems. Many of these processes run after-hours, in "lights out/hands free" manner. For company after company, the conundrum is the same, often only what varies are the complexity of the systems and the volume of data.

The raw data must be composed into basic documents. Subsequently, these documents must be assembled, and then perhaps merged or refined with other information, such as graphics. Finally, the raw data is many times either incomplete, missing fields, improperly formatted and seemingly incompatible with other documents and data sources.

The course will teach the student about the concepts of data conditioning, teach basic filtering, sorting and merging techniques, and basic compositing into documents. Secondly, he or she will learn how secure shell programming can be used for moving data and documents between computer systems, like UNIX servers.

Later parts of the course will teach the student how more sophisticated electronic delivery methods can work, such as web portal and e-mail attachment delivery. We'll show how an output management system infrastructure can make this replacement process simple for applications, reduce front-end coding complexity, and how any size of business can benefit from this approach.

The course focus is not so much on individual process syntax, but on how to assemble processes together to achieve a document result. We'll build automated processes as "black boxes" centered around the UNIX [and Windows] server concepts of piping and redirection. The student will be given the opportunity in the lab to combine some of these processes together to create new document services, or extend capability of a current service. Again, we are teaching integration, not programming languages.

2.2.1 Day One – Basic Document Principles

Day One will talk about what are business documents, and why we still rely on them so heavily. We'll discuss the business requirements of assembling documents for client needs. We'll examine about the basic challenge of data conditioning: sorting, massaging, merging, and trimming. How to pull from multiple sources will be shown.

Lab work will consist of learning how to sign on from a Windows or Mac workstation, and use secure shell [SSH2] access to talk to multiple UNIX and Windows server. The student will learn how to use PKI techniques to copy his or her public key to these systems to become pre-authorized without the need for passwords. We'll run a number of shell commands, and show how multiple server processes can be chained from the workstation to achieve a business result.

2.2.2 Day Two – Introduction to Output Management Systems

Day Two will talk about how business can manage not only their printer complex, but any of their special output portals as a coherent whole. We'll discuss the pros and cons of these systems, and how to deal with them.

Lab work will consist of exposure to Output Management Systems using their workstation, accessing the VPSX system via its web portal technology, and showing how we can initiate print jobs from the workstation to the VPSX system. We'll show how print jobs can be held, cancelled, or redirected. We'll explore how VPSX can manage other devices besides printers, such as e-mail attachments.

2.2.3 Day Three – Document Assembly and Filtering

Day Three will discuss a practical approach to creating documents to meet business requirements. We'll discuss the pros and cons of wiring document features into applications vs. an external formatting approach. What are the cost and resource issues of code sustainment and simplicity vs. reliance on additional systems? Finally, show how you can address these technical and business risks with your choice of tools and architecture.

Lab work will consist of using some raw data from the workstation with some PDFlib-based assembly commands over secure shell access to make some simple PDFs from templates. Students will get familiar with the idea of piping several filtering and composition commands together on different servers to achieve a result. We'll show how these composed documents can be served back to the student in a number of ways.

2.2.4 Day Four – Building Output Portals

Day Four will explore the basic philosophy that few problems in computing are intractable i.e. a solution will only depend on how many technical steps and processes are needed. Some will require more work and effort than others. We'll discuss that in the output management field there are few "turnkey" solutions that will cover every aspect of print and document solutions. Often some innovation is required, and you will need to repurpose, extend or add-on to existing technical solutions.

Lab work will consist of reconfiguring a device via the VPSX web management portal to change the behavior of a device. The device will be a document portal, and the student will be able to "tweak" the device to change either the composition or routing of the document or both.
.

2.2.5 Day Five – Advanced Document Techniques

Day Five is intended to push the envelope on what constitutes document solutions. We'll talk about multi-function device solutions [MFD], and how output can often become input. We'll talk about metadata, archiving systems, and how this can be introduced to electronic documents. The use of metadata tagging during composition to create Accessible documents will be discussed, and why this important in future. We'll also touch on barcoding as a useful technique, for rapidly adding this information, and meeting additional requirements such as recognition and authentication.

Lab work will consist of learning to use the Lexmark MFD to recompose a scanned document into a PDF. We'll learn to add metadata, and how to send that document to another portal. We'll also explore simple PDF templating processes to add barcodes, and to use the barcode readers on a workstation for fast recognition of those documents.

2.3   Marking

The Course is marked based on participation in each of the five daily labs, plus a final test on the last day,

- Lab 1: 10% of the total mark, based on completing lab work assignments
- Lab 2: 10% of the total mark, based on completing lab work assignments
- Lab 3: 10% of the total mark, based on completing lab work assignments
- Lab 4: 10% of the total mark, based on completing lab work assignments
- Lab 5: 10% of the total mark, based on completing lab work assignments
- Final Test [multiple choice] 50% of the mark

3.0 Benefits

This Course is less concerned about teaching particular syntax to a command or process, but on rather teaching a standard methodology or approach to integrating document systems. By using this methodology the student should be able to reduce complex computing problems involving multiple computer server systems to manageable pieces. No matter how complex the original system, it can be reduced to discrete components via these techniques.

The Course will show how complex print and document composition infrastructures can be managed as a coherent whole by using output management systems. Devices can be a simple as local network printers, all the way up to high volume digital presses, and complex web portals for alternative electronic delivery.

Finally, we'll show some basic techniques in automation and integrating processes together on different computers, using industry standard methods. These methods can be scaled up from hundreds of documents into millions, and are used every day in conducting business within Fortune 1000 companies world-wide.

This Course should complement other Ryerson GCM and Computer Science offerings. If the student is intending to focus on a career in IT in any or all of the Information Management [IM] disciplines such as Content/Document/Records/Output Management [CM/DM/RM/OM], this type of integration knowledge is a must. From polling the opinion of current Xplor membership, there is an insufficient number of qualified graduates within the IM field, with this necessary skill-set. Many students will have a clear advantage in entry-level positions with many business IM programs upon graduation with EDA certification.

3.1 A Mild Disclaimer

The Course will not teach computer languages, or operating system fundamentals per se, that is too big a scope for this introductory course. Students with interest should be encouraged by this course to expand their further knowledge in these areas. We do appreciate feedback, and will provide advanced courses in these areas based on demand.