

Team A: Project Requirements Specification;

CIS-470 – Senior Project

Professor David Thomas

DeVry University

March 13th, 2014

Table of Contents

System Overview	3
Methodology Description	3
Requirements	4
Class Hierarchy Model.....	4
Entity Relationship Diagram (ERD).....	5
Data-Dictionary (DD)	5
Preliminary UML Sequence Diagram(s)	6

Project Requirements Specification

Team:	Team A
Team Members:	John Boley, Justin Byrne, James Coltman, Chase Freel, Marshall Gibson,
Date:	03/13/2016
Project Title:	Williams Specialty Company - - Business Automation

System Overview

Williams Specialty Company (WSC) wants to simplify (and improve) their workflow through the development (and implementation) of a proprietary Business Process Automation (BPA) application system. This system will include a host of business operations ranging from processing client and inventory data to generating vital business records and orders. Because this system is comprehensive in scope, the development should be approached as an overarching Business Process Management (BPM) strategy for WSC; maintaining and optimizing WSC's core operational mechanisms such as business processes, reports, and data.

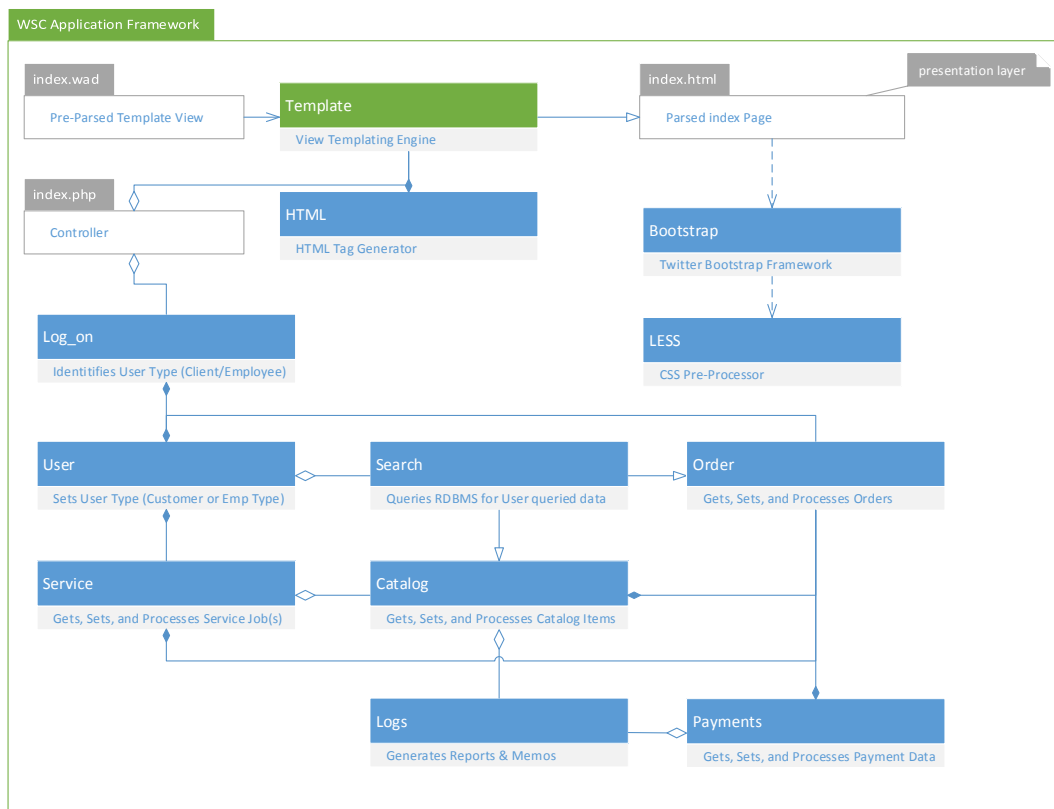
Methodology Description

Through the key principles outlined throughout the Waterfall Model (or methodology), we have developed our root (or preliminary) database, application, and process models to establish a strong (initial) foundation for this application system. Albeit, we anticipate (as with any project) that this project will continue to change as it emerges (and evolves) throughout its SDLC, our initial foundation should provide our team with a comprehensive (and orderly) architecture to build from. With this in mind, our team approached the development of this application's requirements, specifications, and modeled diagrams through a Bottom-Up Design Methodology; initially modeling application components (or parts), while subsequently assembling our application's components to produce a final functional system.

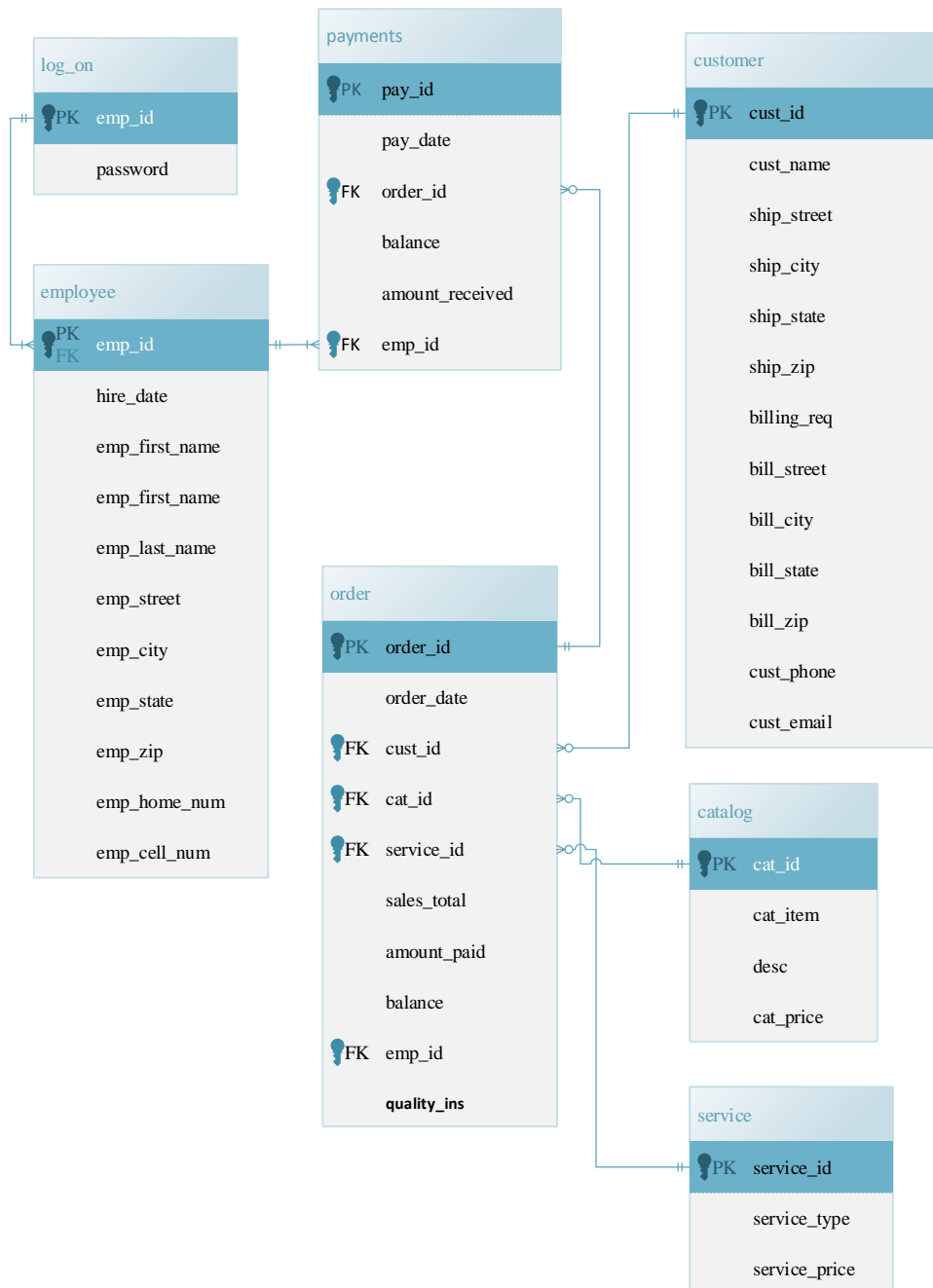
Requirements

Through the Bottom-Up Design methodology, we (initially) constructed our Data-Dictionary (DD) to ensure that our team appropriately mapped out the bulk of data required to meet this system's requirements; and required processes. From this dictionary, an Entity Relationship Diagram (ERD) was generated to allow our team to quickly (and efficiently) focus on administrating this applications RDBMS through pre-assembled and categorized groups of data; throughout this project's SDLC. Then, processes were then modeled, through UML Sequence Diagrams; by exploring (and dissecting) this projects SOW. Finally, through the culmination of these documents an overarching Class Hierarchy Model was generated, illustrating the relationships amongst each (programmable) class, including how (and where) functions should be grouped; to effectively manage (and manipulate) these components throughout this projects SDLC.

Class Hierarchy Model



Entity Relationship Diagram (ERD)



Data-Dictionary (DD)

log_on							
Column Name	Description	Data-Type	Length	Req	PK	FK	FK ⇔ TB
emp_id	Employee ID Number	INT	6	Y	Y		
password	Employee password	VARCHAR	8	Y			
employee							
emp_id	Employee ID Number	INT	6	Y	Y	Y	log_on
hire_date	Date of Hire	DATE					
emp_first_name	Employees First Name	VARCHAR	20	Y			
emp_last_name	Employees Last Name	VARCHAR	30	Y			
emp_street	Street Address	VARCHAR	200	Y			
emp_city	City	VARCHAR	30	Y			
emp_state	State	CHAR	2	Y			
emp_zip	Zip	INT	5	Y			
emp_home_num	Home Phone Number	INT	12	Y			
emp_cell_num	Employee Cell Number	INT	12				
customer							
cust_id	Customer ID Number (Auto Increment)	INT	6	Y	Y		
cust_name	Customer First and Last Name	VARCHAR	100	Y			
ship_street	Street Address	VARCHAR	200	Y			
ship_city	City	VARCHAR	30	Y			
ship_state	State	CHAR	2	Y			
ship_zip	Zip	INT	5	Y			
billing_req	Billing Address Different Than Shipping Y or N	CHAR	1	Y			
bill_street	Street Address	VARCHAR	200				
bill_city	City	VARCHAR	30				
bill_state	State	CHAR	2				
bill_zip	ZIP	INT	5				
cust_phone	Phone Number	INT	12	Y			
cust_email	Email Address	VARCHAR	50				
catalog							
cat_id	Catalog ID Number (Auto Increment)	INT	6	Y	Y		
cat_item	Item	VARCHAR	30	Y			
desc	Description of Item	VARCHAR	200	Y			
cat_price	Price of Item	DECIMAL	6,2	Y			
service							
service_id	Service ID Number (Auto Increment)	INT	6	Y	Y		
service_type	Type of Service	VARCHAR	30	Y			
service_price	Price of Service	DECIMAL	6,2	Y			
order							
order_id	Order ID Number (Auto Increment)	INT	6	Y	Y		
order_date	Date of Order	DATETIME		Y			
cust_id	Customer ID Number	INT	6	Y		Y	customer
cat_id	Catalog ID Number	INT	6	Y		Y	catalog
service_id	Service ID Number	INT	6	Y		Y	service
sales_total	Total Price of Sale	DECIMAL	6,2	Y			
amount_paid	Amount Paid by Customer at Time of Order	DECIMAL	6,2	Y			
balance	Balance Due	DECIMAL	6,2	Y			
emp_id	Employee that Received Order	INT	6	Y		Y	employee
payments							
pay_id	Payment ID (Auto Increment)	INT	6	Y	Y		
pay_date	Date of Payment	DATETIME		Y			
order_id	Order ID Number	INT	6	Y		Y	order
balance	Balance Due	DECIMAL	6,2	Y		Y	order
amount_received	Amount Received (Should be paid in full)	DECIMAL	6,2	Y			
emp_id	Employee That Received Payment	INT	6	Y		Y	employee

Preliminary UML Sequence Diagram(s)

