MICHIGAN STATE UNIVERSITY

Project Plan

Consumer Payroll Check Cashing Analytics

The Capstone Experience

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From Students…
…to Professionals

Project Overview

- Meijer has a Payroll Check Cashing System
- Possibilities of fraudlent checks
- Develop a web-based system for reporting and analyzing features
- Send out alerts based on trend data
- Goal is to provide a web system in order to be used to lower the amount of fraudulent checks

Functional Specifications

- Ad Hoc Reporting
  - Generate reports on the fly
- Customer Browse
  - Browse and search by customer name/ID
- Customer Record
  - View data for particular customer
- Activity Dialog
  - View/edit details for a customer activity

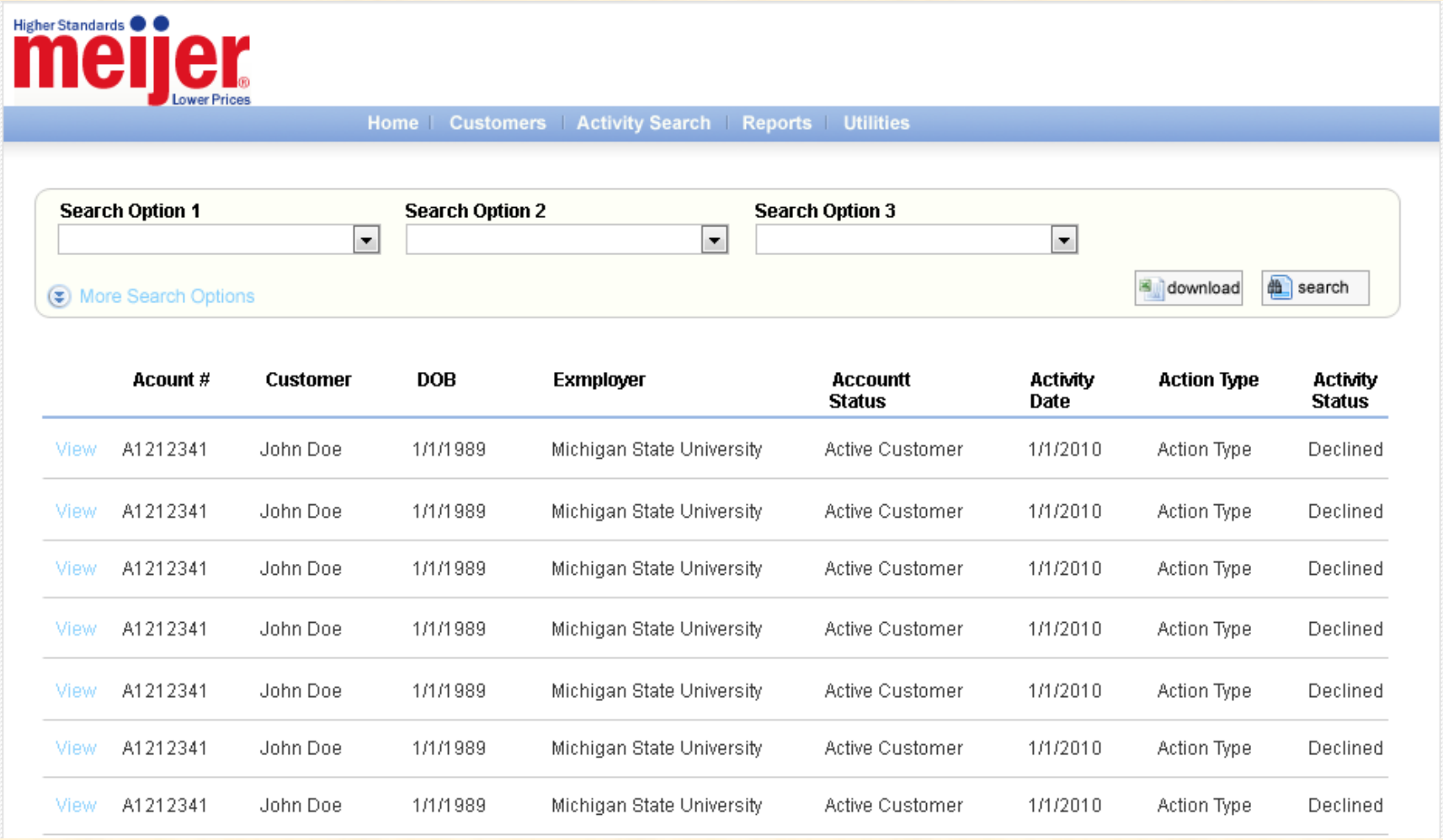
Functional Specifications

- Reporting Framework
  - Deploy reports to the check cashing system
- Predictive engine
  - Predict check fraud based on trending data
- Authentication and Security
  - Develop remotely to be deployed on a secure Meijer server due to secure nature of data

Design Specifications

- System Features
- Reports
  - Fraud Analysis Report
  - Transaction Trending Report
- Graphical User Interface
  - Ad-Hoc Reporting Screen
  - Customer List Screen
  - Customer Record Screen
  - Reports Screen

Screen Mockups



Screen Mockups

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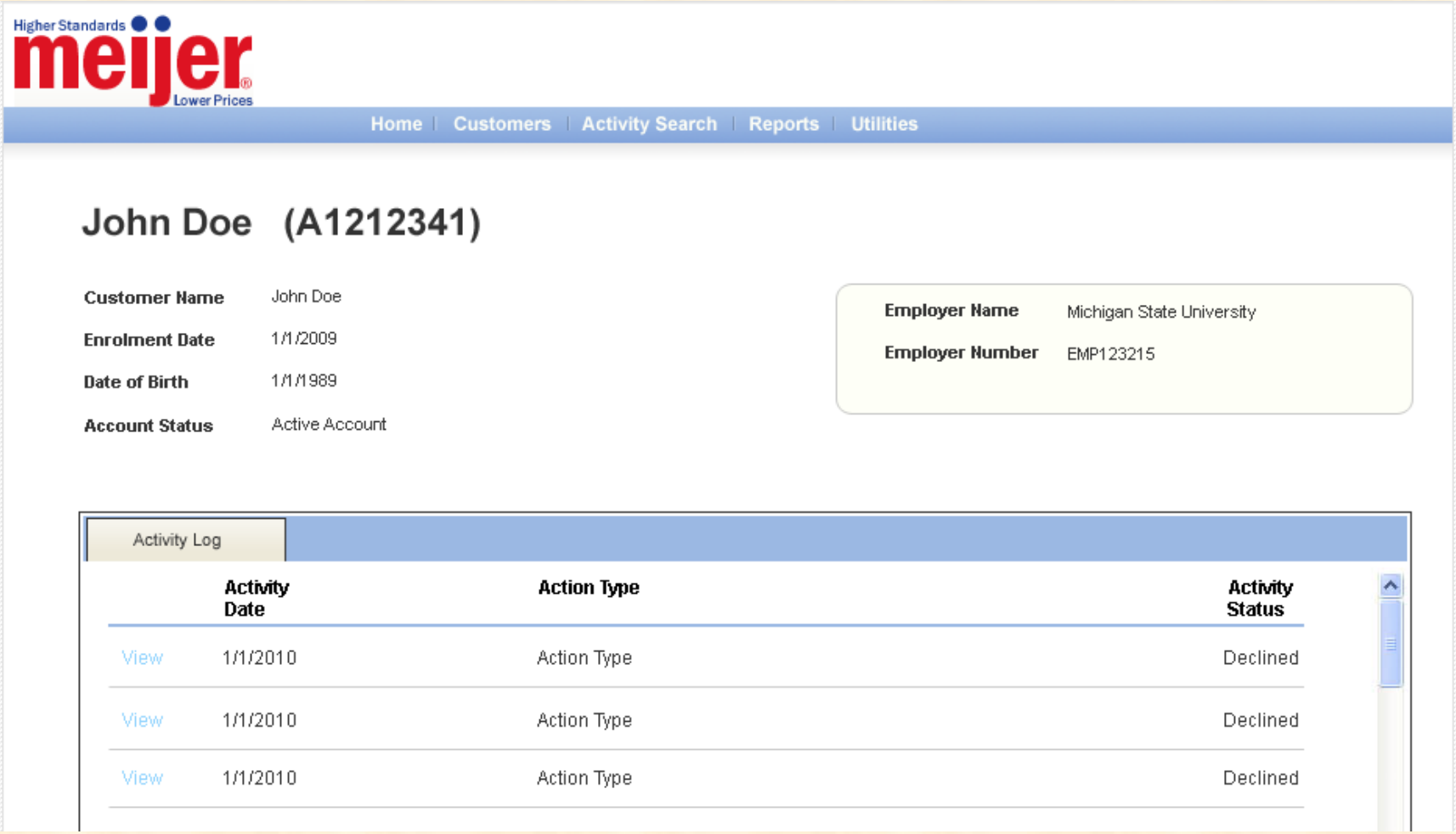

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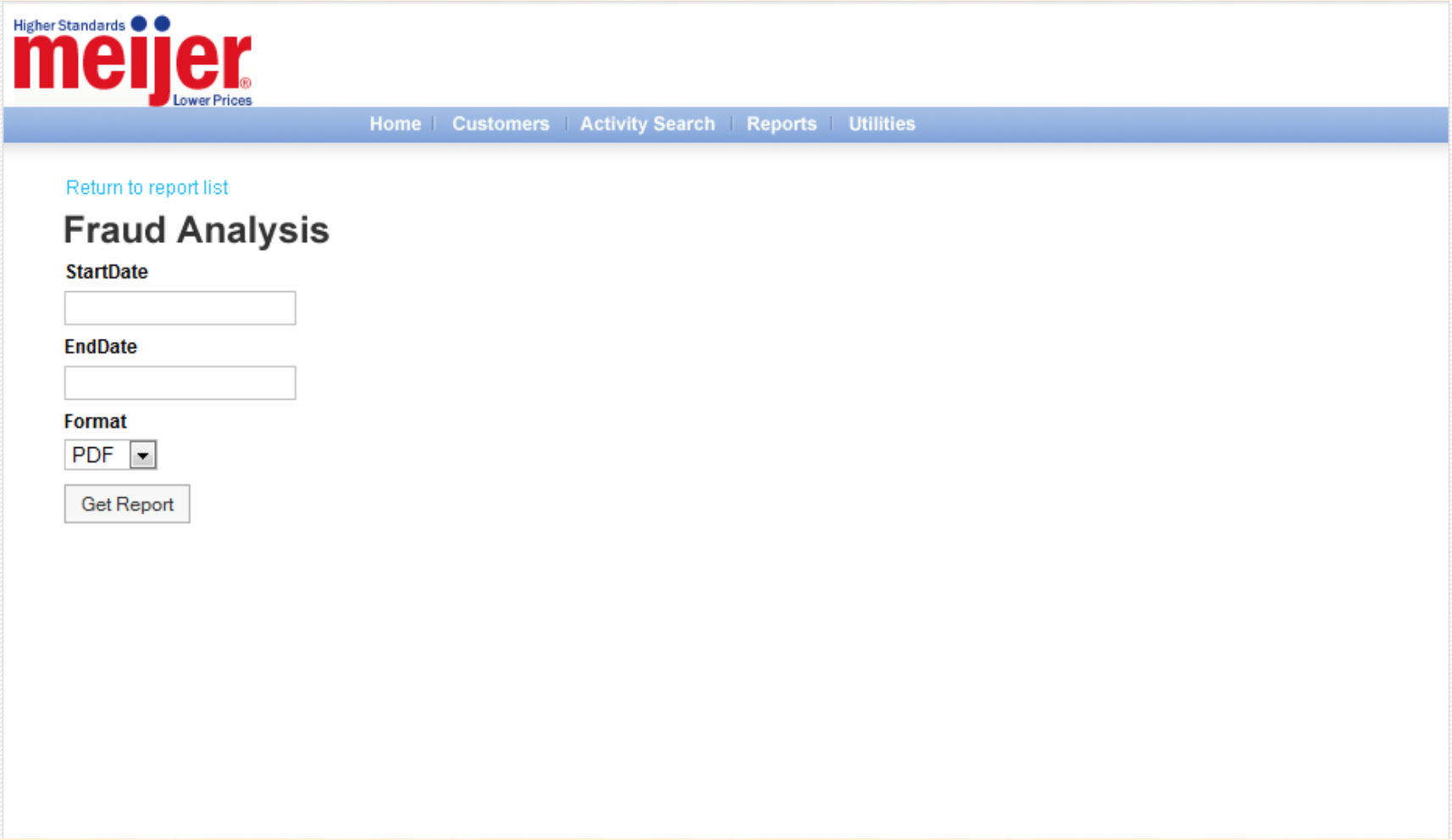

Technical Specifications

- Operating System: Windows 2008
- Web-server: IIS 7/6
- Development Framework: ASP.NET MVC
- Client-Side Framework: JQuery
- Reporting Framework: SQL Server Reporting Services
- Database Model: SQL Server 2008
- Source Control: SVN
- Continuous Integration: Cruise Control
- Build Framework: MSBuild

System Architecture

- Agile Development/SCRUM
- Layered Architecture
  - Contracts Layer: Interfaces between the data layer and the business logic layer
  - Data Layer: Contain basic information on connecting to the database
  - Business Layer: Takes a request from the presentation layer and use it as a filter for the entries in the data layer
  - Presentation Layer: Pulls data from the business layer and displays it on the screen

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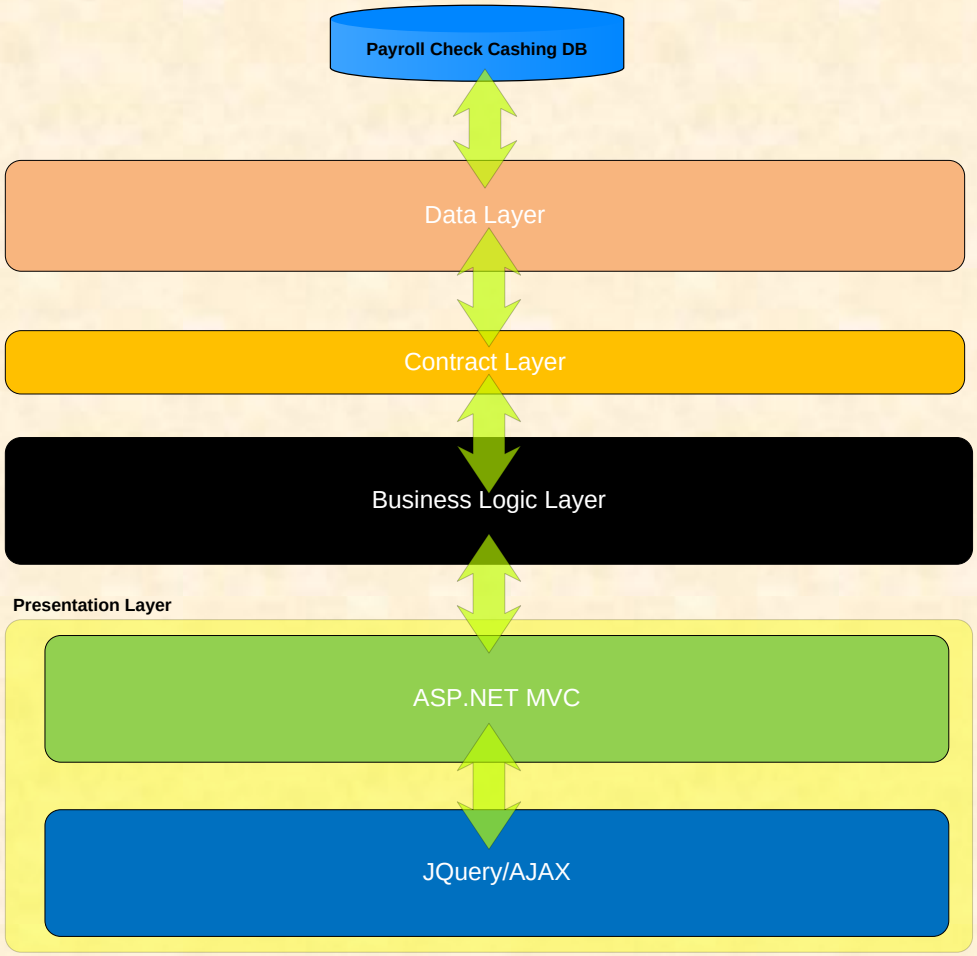

System Components

- Hardware Platforms
  - Windows Server 2008 OS on Rack Mount
- Software Platforms / Technologies
  - SQL Server
  - Visual SVN Server
  - Cruise Control.NET
  - Meijer Test Database
  - Visual Studio 2010
  - Pivotal Tracker

Testing

- User Acceptance Testing
- Unit Testing
- Features To Be Tested
  - Ad Hoc Reporting
  - Customer Browse
  - Upload Check Images
  - Reporting Framework
  - Authentication & Security
  - Fraud Analysis Report

Risks

- Technical Errors (Server/Client Bugs Reported by User)
  - Create report in pivotal tracker
  - Work on technical errors within the same sprint
- User Requires Changes/Tweaks
  - Short 2 week sprints for user acceptance testing
  - Make changes at a fast pace within next sprint
- Scalability or Underlying Data Model Changes
  - Separate project out into layers
  - Reduce refactoring
  - Increase testability
- Predictive Alerts Engine Parameters
  - Make engine scalable