Introduction

The purpose of the demo is to assess the design, development and delivery skills of candidates for the Advanced Specialists Team.

Successful implementation will demonstrate the candidate's experience and skills in the following areas:

- Java and Java EE programming skills and best practices.
- HTML/CSS/Javascript.
- Using modern MVC frameworks built on top of the Java Servlet and Java Server Pages technologies.
- Building business and data services using an ORM framework.
- Relational database engines.
- Experience with XML and web-services technologies.

General Guidelines

You have the choice of using your preferred development tools and frameworks. This includes the Relational database engine, Java IDE, build/deployment tools, Java application server, ORM, Web MVC, templating, Javascript framework... etc.

You are encouraged to exercise your judgment, creativity and best practices to fill in any details not described in this document or include enhancements for the user experience.

Demo Overview

Insurance United is a fictional entity that specializes in matching families with health insurance plans.

Insurance United wants to build a website to help families find the best health insurance plans from several insurance providers.

You are tasked with building a web application that allows users to create accounts, provide details about their household and enroll in the plan that best matches their needs and abilities.

To support the website, you will also build a SOAP based web service to provide the lists of available plans.

Plan Web Service Application

Build an application that expose a SOAP based web-service to list the insurance plans based on the information provided by the user.

The application reads all the available plans from the XML file provided. See the attached XSD file for description of the plan attributes.

- Count of adults 18 years or older in the household.
- Count of minors younger than 18 years in the household.
- Count of tobacco users in the household.
- Total household annual income.

Web Service Output

The web service returns a list of plan objects. Each plan object provides the following attributes:

- Plan Title.
- Plan Type.
- Plan Provider.
- Quality of Service Rating.
- Customer Service Rating.
- Total Monthly Premium.
- Annual Deductible.
- Office Co-Pay.

Notes:

- The total monthly premium is calculated by summing the adult and minor monthly premium for each member of the household, adding the smoker surcharge for each tobacco user in the household.
- Low income plans should only be offered to households with annual income equals or less than $25,000.
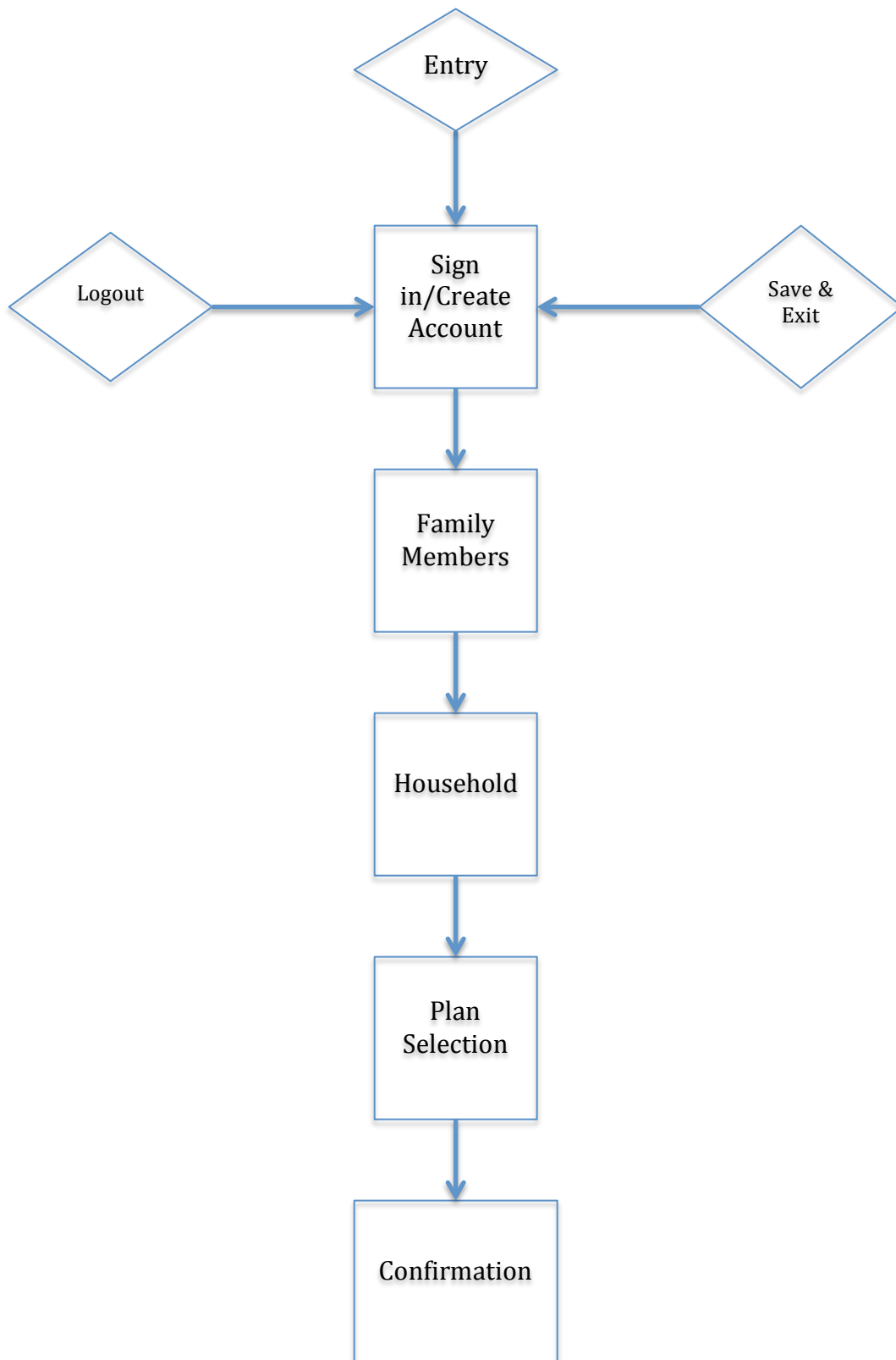- Provide the application sources along with a script to build and package the application for deployment.

Insurance United Web Application

Business Requirements

- Users must create a login before using the service. Unauthenticated users should be redirected to a login page.
- Allow users to save and exit the application. When the user returns to the application, simply populate the data previously saved (allowing the user to make changes).
- Validate input and present the user with validation/error messages for every page before saving the data.
- Use a page templating engine to ensure the header and footer of the pages are consistent among across the site.

Pages

Page Flow

Entry

Logout → Sign in/Create Account ← Save & Exit

Family Members

Household

Plan Selection

Confirmation

Sign in/Create account

This is the entry page to the web application. The page should be displayed for anonymous users and after user logs out.

Insurance United

Welcome to Insurance United. To get started Sign in or create a new account.

Sign in

All fields are required

Email Address

Password

[Sign In]

Create New Account

All fields are required

Email Address

Password

Confirm Password

Security Question

Where were you born? ▲▼

Security Answer

[Create Account]

Insurance United. All right reserved

Family Members
First visit

In addition to being required, validation is needed for the date of birth and social security number fields.

After filling in the "You" section and clicking "New Member"

Insurance United

You and Your Family

Please provide information about yourself and the family member to be insured.

- To add more members, click the New Member button.
- To remove members, click the Remove button.
- When Done click the Continue button.

John Smith

All fields are required

Name

| John | Smith |
| First | Last |

Gender

⊙ Male ○ Female

Date of Birth

01/01/1960

MM/DD/YYYY

Social Security Number

123-45-6789

XXX-XX-XXXX

New Member

All fields are required

Name

| | |
| First | Last |

Gender

○ Male ○ Female

Date of Birth

MM/DD/YYYY

Social Security Number

XXX-XX-XXXX

Relationship -- Select -- ↕   Remove

New Member   Save & Logout   Save & Continue

Insurance United. All right reserved

After adding a spouse and a child

Insurance United

You and Your Family

Please provide information about yourself and the family member to be insured.

- To add more members, click the New Member button.
- To remove members, click the Remove button.
- When Done click the Continue button.

John Smith

All fields are required

Name

| John | Smith |
| First | Last |

Gender

⦿ Male ◯ Female

Date of Birth

01/01/1960
MM/DD/YYYY

Social Security Number

123-45-6789
XXX-XX-XXXX

Jill Smith

All fields are required

Name

| Jill | Smith |
| First | Last |

Gender

◯ Male ⦿ Female

Date of Birth

01/01/1964
MM/DD/YYYY

Social Security Number

987-65-4321
XXX-XX-XXXX

Relationship Spouse ⇕   Remove

Jack Smith

All fields are required

Name

| Jack | Smith |
| First | Last |

Gender

⦿ Male ◯ Female

Date of Birth

01/01/2004
MM/DD/YYYY

Social Security Number

333-22-4444
XXX-XX-XXXX

Relationship Child ⇕   Remove

New Member   Save & Logout   Save & Continue

Note that the options in the relationship drop down are: "Spouse", "Child" and "Parent". Also, note that the title of every member section updates after typing and the name of the family member.

Household
Note that the pregnant check box is only available for female family members.

Insurance United

Your Household

Please provide information about your Household.

Residence Address

* Indicates a required field

Street Address *	Address Line 2

City *	Zip Code

Mailing Address

* Indicates a required field

Street Address *	Address Line 2

City *	Zip Code

Total Household Income

All fields are required

Income Source	Income Amount
	$ _____ per [year ⬍]

Household Health

	Tobacco User?	Pregnant?	Disabled?
You – John Smith	☐	☐	☐
Spouse – Jill Smith	☐	☐	☐
Child – Jack Smith	☐	☐	☐

[Save & Logout] [Save & Continue]

Plan Selection

Call the Plan Web Service to retrieve the list of plans to display.

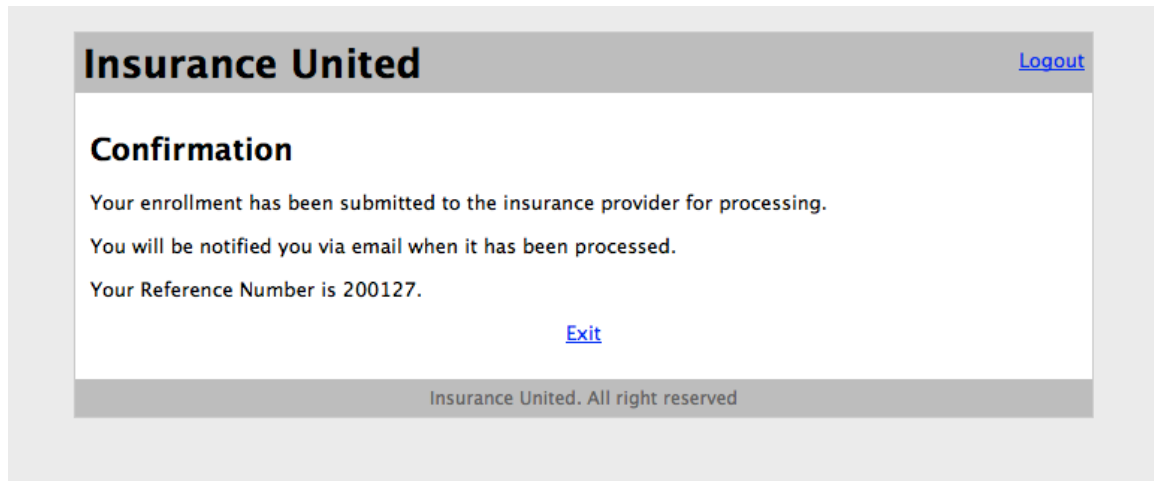# Insurance United

Plan Selection

Based on the information you provided, we found the following plans for you.
Please review the plans and make your selection by clicking Enroll.

Plan Name	Rating	Plan Costs	
ACME Affordable Health PPO	**Quality of Service** A	**Monthly Premium** $50	Enroll
	Customer Service B	**Annual Deductible** $2,500	
		Office Co-Pay $25	
ACME Affordable Health HMO	**Quality of Service** B	**Monthly Premium** $150	Enroll
	Customer Service A	**Annual Deductible** $200	
		Office Co-Pay $25	
Aetna Affordable Health PPO	**Quality of Service** C	**Monthly Premium** $150	Enroll
	Customer Service B	**Annual Deductible** $2,500	
		Office Co-Pay $25	

Insurance United. All right reserved

Confirmation

Note that the enrollment is a mock action for the purposes of the demo. It should simply generate a reference number and show the user the confirmation below.

Technical Requirements

- Provide the application sources along with a script to build and package the application for deployment.
- Persist accounts and their related information in a relational database.

Extra credit

- Add a date picker for the date of birth fields.
- Encrypt passwords in before storing in the database.
- Demonstrate or describe how this application can be leveraged on a mobile device.