Software Requirements Specification for ProProspect

Version 1
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1 Introduction

1.1 Purpose

This Software Requirements Specification intends to clarify the software requirements of ProProspect. It will contain enough information to guide developers to implement the desired functionality through the necessary requirements for an efficient software. The development of appropriate Verification and Validation (V&V) plans will test if the requirements have been met.

1.2 Scope

This SRS goes over the requirements for the following:

1. ProProspect web application, including database and recommendation algorithm
2. Uploading user material
3. Application capabilities
4. Algorithm that determines job recommendations
5. Software connection with third party databases
6. Diagnostic capabilities

1.3 Definitions

Table 1 Acronyms and Definitions
BDD: Block Definition Diagram
SRS: Software Requirements Specification
UDP: User Datagram Protocol
UML: Unified Modeling Language
V&V: Verification and Validation
TPL: Third Party Link
JSQ: Job Search Query
PMP: Portfolio Management Protocol
PAS: Profile Analysis System

1.5 Overview

This document follows the IEE recommended format detailed in IEEE Std 830-1998 IEEE Recommended Practice for Software Specifications.

2 Overall Description

2.1 Product Perspective

ProProspect's system is a web application. This document specifies the site's functionalities which enable the user to receive recommended job postings and professional development articles according to user data based on user input information and course history. This functionality relies on web scraping via keywords from company websites and professional development sites. Figure 1 System Block Diagram presents an overview of the system, depicted using a Unified Modeling Language (UML) Block Definition Diagram (BDD).
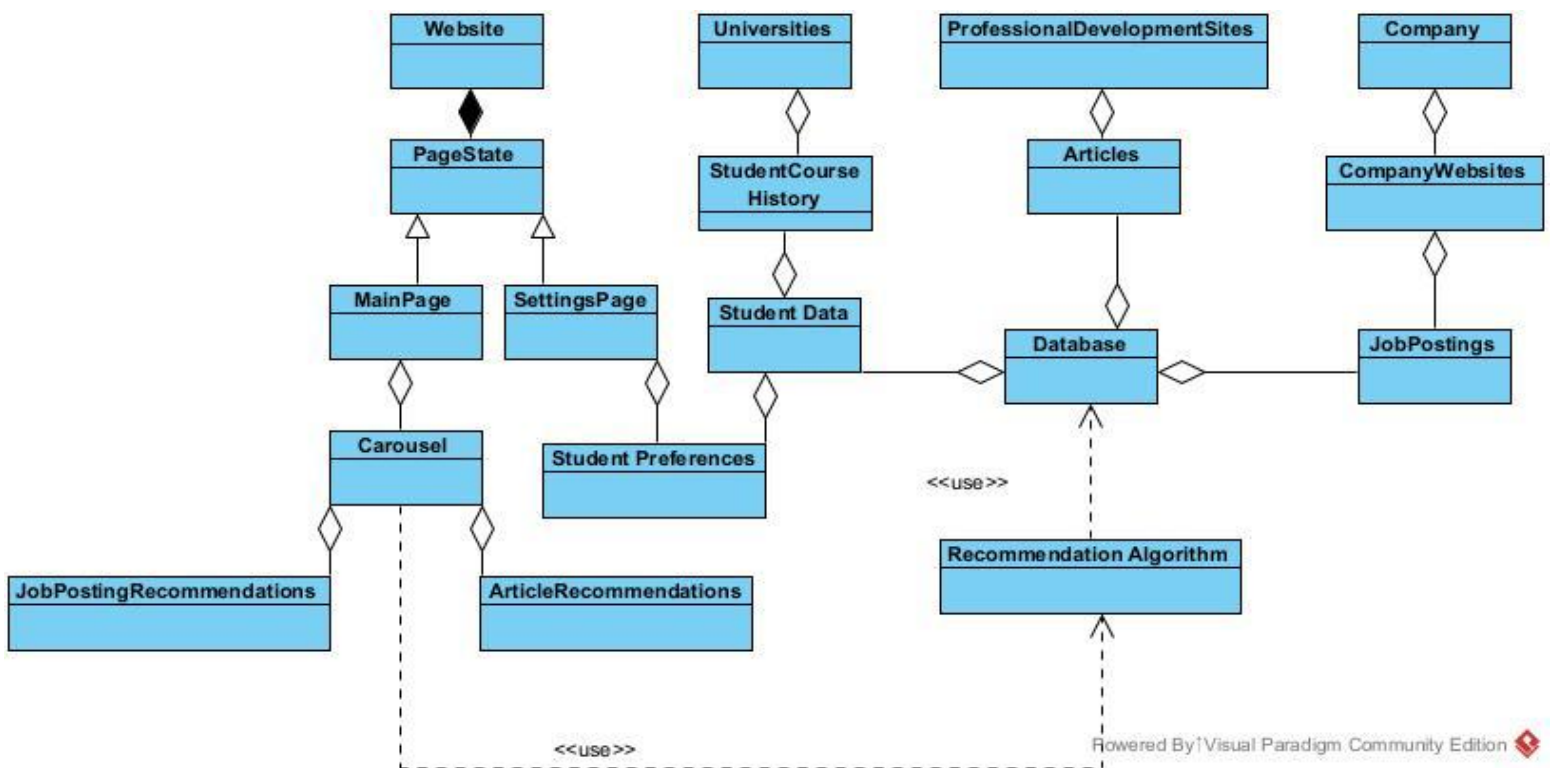

Figure 1 System Block Diagram

2.2 Product Functions

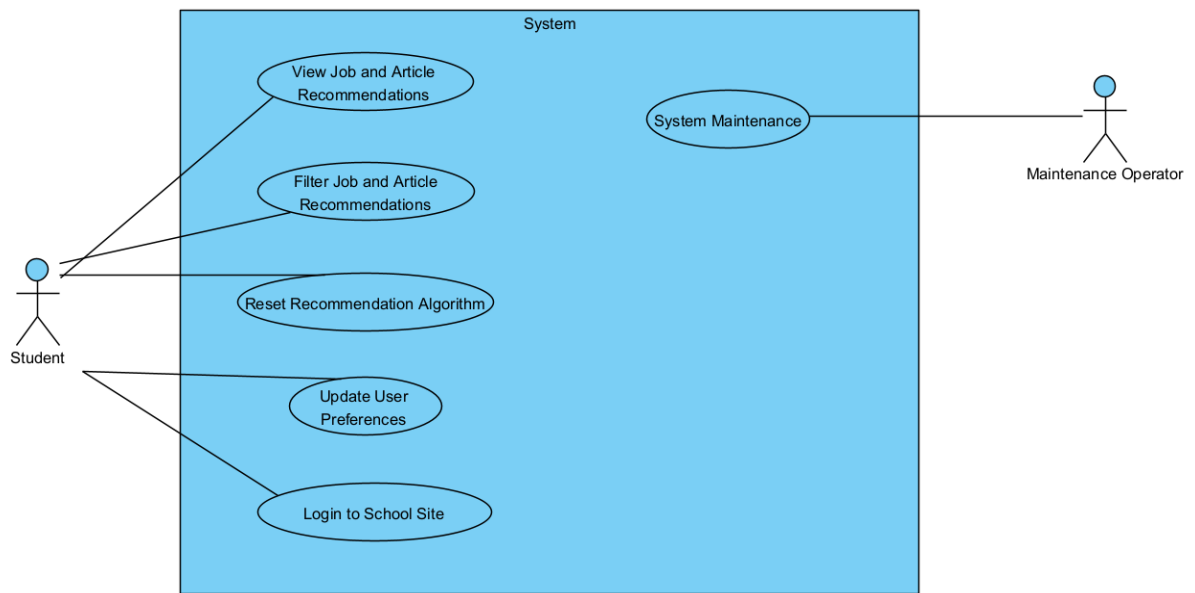This use case diagram depicts different use cases where the user interacts with ProProspect in the intended manner.

Figure 2 ProProspect System Use Cases

2.3 Use Case Descriptions

2.3.1 View Job and Article Recommendations

GENERAL CHARACTERISTICS	
Intent	Allow User to view job / article recommendations and provide feedback to the recommendation algorithm.
Scope	ProProspect web application
Primary Actor	User
Secondary Actor	n/a
Preconditions	User has an active account and is logged into the ProProspect site.
Trigger	User clicks on job posting or article recommendation.

Success Post Condition	Job posting / article recommendation general information popup window appears.
Failed Post Condition	Failure popup window appears.

Sunny Day Scenario

Step	Action
Start	This scenario begins when the user clicks on a job/article recommendation on the carousel of the main page of the ProProspect web application.
1	Main page generates a pop up window with general information about the job posting/article as well as a clickable link to the source.
2	User upvotes or downvotes the recommendation.
3	The database stores user feedback.
4	The recommendation algorithm is updated based on user feedback.

Rainy Day Scenario

Step	Action
Start	This scenario begins when the user clicks on a job/article recommendation but isn't logged in to a valid account.
1	Main page generates a pop up window saying "unsuccessful attempt" and directs the user to log in.

2.3.2 Filter Job and Article Recommendations
2.3.3 Reset Recommendation Algorithm
2.3.4 Update User Preferences
2.3.5 Login to School Site
2.3.6 System Maintenance

3 Specific Requirements

3.3 System features

3.3.1 The system web application supports the Use Cases described in Figure 2 ProProspect System Uses Cases.

     3.3.1.1 View Job and Article Recommendations

     3.3.1.1.1 Introduction/Purpose of Feature

     This feature provides the user with the ability to click on recommended job postings and professional development articles on the carousel.

          3.3.1.1.2 Stimulus/Response Sequence

          3.3.1.1.3 Associated Functional Requirement

               3.3.1.1.3.1 The main page **shall** have a carousel with recommended job postings and articles.

               3.3.1.1.3.2 The carousel **shall** provide the user with the ability to click on a job posting or article that makes a popup with general information.

               3.3.1.1.3.3 The carousel **shall** provide the user with the ability to upvote and downvote recommendations to store in the database.

     3.3.1.2 Filter Job and Article Recommendations

     3.3.1.2.1 Introduction/Purpose of Feature

     This feature provides the user with the ability to filter the carousel on the main page by the posting date and genre type.

          3.3.1.2.2 Stimulus/Response Sequence

          3.3.1.2.3 Associated Functional Requirements

               3.3.1.2.3.1 The main page **shall** have a filter button on the top right of the page with an associated pop-up window with options for selecting desired posting date and genre type..

               3.3.1.2.3.2 The main page **shall** not have any effect if the user is not logged into a verified account.

               3.3.1.2.3.3 The carousel **shall** be able to update the job posting and article recommendations after filtering.

     3.3.1.3 Reset Recommendation Algorithm

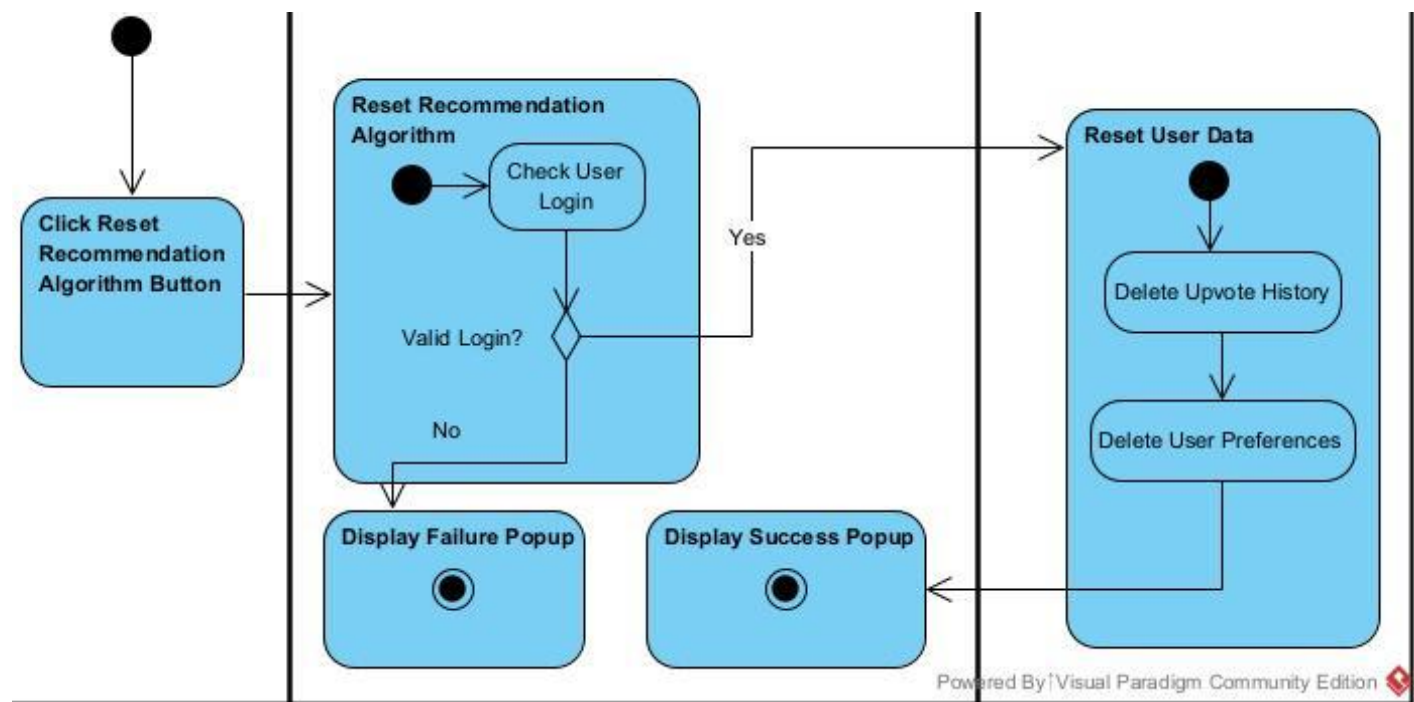   3.3.1.3.1 Introduction/Purpose of Feature

     This feature provides the user with the ability to reset their recommendation algorithm in the settings page, which will wipe the database of all their user preferences and previous upvotes/downvotes.

          3.3.1.3.2 Stimulus/Response Sequence

     Figure 3 Reset Recommendation Algorithm Flow

          3.3.1.3.3 Associated Functional Requirements

               3.3.1.3.3.1 The settings page **shall** have a reset recommendation algorithm button.

3.3.1.3.3.2 The reset recommendation algorithm button **shall** be able to clear user
upvote data from the database.

3.3.1.3.3.3 The reset recommendation algorithm button **shall** be able to clear user
preferences data from the database.

3.3.1.4 Update User Preferences

3.3.1.4.1 Introduction/Purpose of Feature

This feature provides the user with the ability to update their user preferences by filling out a
survey located in the settings page.

3.3.1.4.2 Stimulus/Response Sequence

3.3.1.4.3 Associated Functional Requirements

3.3.1.4.3.1 The settings page **shall** have an accessible update user preferences
survey.

3.3.1.4.3.2 Users **shall** be able to modify personal information such as name,
contact details, and academic history.

3.3.1.4.3.3 Users **shall** have the capability to change their preferences for job
recommendations, such as location, industry, and company values.

3.3.1.5 Login to School Site

3.3.1.5.1 Introduction/Purpose of Feature

3.3.1.5.2 Stimulus/Response Sequence

3.3.1.5.3 Associated Functional Requirements

3.3.1.5.3.1 The system **shall** provide a secure user authentication process to allow

users to log in to their school site accounts.

3.3.1.5.3.2 Users **shall** be able to specify the type of account they wish to log in to (e.g., student, faculty, or staff).

3.3.1.5.3.3 The system **shall** offer password reset and recovery options in case users forget their login credentials.

3.3.1.5.3.4 The login process **shall** implement security measures, such as encryption, to protect user credentials during transmission and storage.

3.3.1.5.3.5 Users **shall** have the option to log out from the school interface from the site.

3.3.1.6 System Maintenance

3.3.1.6.1 Introduction/Purpose of Feature

3.3.1.6.2 Stimulus/Response Sequence

3.3.1.6.3 Associated Functional Requirements

3.3.1.6.3.1 The system **shall** have a troubleshooting feature that can run diagnostics in the event of an application issue

3.3.1.6.3.2 Users **shall** be able to access the application's troubleshooter when needed.

3.3.1.6.3.3 The system **shall** have downtime in case of updates and/or site maintenance.

3.3.1.6.3.4 The system **shall** notify users of downtime 24 hours prior to it.

3.3.1.6.3.5 The system **shall** redirect users trying to use the application during downtime and provide information on the maintenance being performed.

3.3.1.6.3.6 The system **shall** ensure integrity and security of user data during use and maintenance.