SRS – SAVVY

(Laptop Advisor)

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SUBJECT: Programming In C++

Software Requirements Specification

For

Savvy (Laptop Advisor)

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Table of Contents

1.0 Introduction

1.1 Purpose

1.2 Document Conventions

1.3 Intended Audience and Reading Suggestions

1.4 Product Scope

2.0 Overall Description

2.1 Product Perspective

2.2 Product Functions

2.3 User Classes and Characteristics

2.4 Operating Environment

2.5 Design and Implementation Constraints

2.6 User Documentation

2.7 Assumptions and Dependencies

3.0 External Interface Requirements

3.1 User Interfaces

3.2 Hardware Interfaces

3.3 Software Interfaces

3.4 Communications Interfaces

4.0 System Features

4.1 Laptop Recommendation Engine

4.2 Comparison Tool

5.0 Other Nonfunctional Requirements

5.1 Performance Requirements

5.2 Safety Requirements

5.3 Security Requirements

5.4 Software Quality Attributes

5.5 Business Rules

6.0 Other Requirements

6.1 Database Requirements

6.2 Internationalization  
 6.3 Legal Constraints  
 6.4 Reuse Objectives

6.5 Accessibility Requirements

6.6 Performance Monitoring

6.7 User Feedback Mechanism

6.8 Maintenance and Support

6.9 Documentation

1.0 Introduction

1.1 Purpose

The purpose of this Software Requirements Specification (SRS) document is to outline the requirements for the development of Laptop Advisor, a software application aimed at assisting users in selecting the most suitable laptop based on their needs and preferences. This document details the functional and non-functional requirements necessary for the successful implementation of the software.

1.2 Document Conventions

This document follows standard conventions for documenting software requirements. Priorities for requirements are indicated by High, Medium, or Low, and each requirement is uniquely identified for clarity.

1.3 Intended Audience and Reading Suggestions

This document is intended for developers, project managers, testers, and other stakeholders involved in the development process. Developers should focus on the detailed functional requirements outlined in Section 4, while project managers may find the overall description and non-functional requirements particularly relevant.

1.4 Product Scope

Laptop Advisor is envisioned as a tool to simplify the process of selecting a laptop by providing personalized recommendations based on user requirements, such as budget, usage preferences, and desired specifications. The software aims to enhance user experience and facilitate informed decision-making.

2.0 Overall Description

2.1 Product Perspective

Laptop Advisor is a standalone software product designed to assist users in selecting the most suitable laptop. While it may integrate with online databases or APIs for retrieving up-to-date laptop information, it operates independently from other systems.

2.2 Product Functions

- Generate personalized laptop recommendations based on user input.

- Display detailed specifications and features of recommended laptops.

- Allow users to compare multiple laptops side-by-side.

- Provide links to purchase recommended laptops from online retailers.

2.3 User Classes and Characteristics

User classes for Laptop Advisor include:

- Novice users: Individuals with limited technical knowledge seeking guidance in laptop selection.

- Tech-savvy users: Experienced users looking for specific features or performance metrics in laptops.

- Business users: Professionals requiring laptops tailored to work-related tasks and productivity.

2.4 Operating Environment

Laptop Advisor will be compatible with major operating systems such as Windows, macOS, and Linux. It will require an internet connection to fetch updated laptop information and may utilize browser-based interfaces for user interaction.

2.5 Design and Implementation Constraints

- Compliance with industry standards for user interface design.

- Utilization of secure communication protocols for data exchange.

- Compatibility with modern web browsers and mobile devices.

2.6 User Documentation

User documentation for Laptop Advisor will include online help resources, tutorials, and FAQs accessible within the application.

2.7 Assumptions and Dependencies

Assumptions:

- Availability of reliable internet connectivity for accessing updated laptop information.

- Users providing accurate input regarding their preferences and requirements.

Dependencies:

- Integration with external databases or APIs for retrieving laptop data.

- Compliance with data privacy regulations and standards.

3.0 External Interface Requirements

3.1 User Interfaces

Laptop Advisor will feature an intuitive graphical user interface (GUI) with interactive elements for inputting user preferences, displaying recommendations, and facilitating laptop comparisons.

3.2 Hardware Interfaces

Laptop Advisor will primarily interface with standard hardware components such as keyboards, mice, and displays. It will not require any specialized hardware.

3.3 Software Interfaces

Laptop Advisor may integrate with external software components or APIs for retrieving laptop information, such as product specifications and pricing data.

3.4 Communications Interfaces

The software will utilize standard communication protocols (e.g., HTTP, HTTPS) for retrieving data from online sources and may incorporate email notifications for user updates or alerts.

4.0 System Features

4.1 Laptop Recommendation Engine

4.1.1 Description and Priority

The laptop recommendation engine analyzes user preferences and requirements to generate personalized laptop recommendations. Priority: High

4.1.2 Stimulus/Response Sequences

- User input preferences (e.g., budget, usage type).

- System analyzes preferences and retrieves relevant laptop data.

- Recommended laptops are displayed to the user.

4.1.3 Functional Requirements

REQ-1: Capture user preferences, including budget, usage type, and desired specifications.

REQ-2: Retrieve laptop data from external sources based on user preferences.

REQ-3: Apply algorithm to generate personalized laptop recommendations.

REQ-4: Display recommended laptops with detailed specifications and pricing information.

4.2 Comparison Tool

4.2.1 Description and Priority

The comparison tool allows users to compare multiple laptops side-by-side based on various specifications and features. Priority: Medium

4.2.2 Stimulus/Response Sequences

- User selects multiple laptops for comparison.

- System retrieves and displays specifications of selected laptops.

- Users review and analyze the comparison results.

4.2.3 Functional Requirements

REQ-5: Enable users to select multiple laptops for comparison.

REQ-6: Retrieve and display detailed specifications of selected laptops.

REQ-7: Provide visual comparison of key features and specifications.

5.0 Other Nonfunctional Requirements

5.1 Performance Requirements

- Response time for generating recommendations should be less than 5 seconds.

- System should be capable of handling concurrent user requests without degradation in performance.

5.2 Safety Requirements

- The software should not prompt users to provide sensitive information such as passwords or financial details.

5.3 Security Requirements

- User data should be encrypted during transmission and storage.

- Authentication mechanisms should be implemented to prevent unauthorized access to user accounts.

5.4 Software Quality Attributes

- The software should prioritize usability and ease of navigation to enhance user experience.

- Regular software updates should be provided to address bugs and security vulnerabilities.

5.5 Business Rules

- Users must agree to terms of service and privacy policy before accessing the software.

- The software should not display biased recommendations based on sponsored listings or partnerships.

6.0 Other Requirements

6.1 Database Requirements

- The software shall maintain a database of laptop models, including specifications, prices, and availability.

- Database backups shall be performed daily to ensure data integrity and availability in case of system failure.

6.2 Internationalization

Needs

- The user interface shall support multiple languages, allowing users from different regions to use the software effectively.

- Date and currency formats shall be configurable based on user preferences or geographic location.

6.3 Legal Constraints

- The software shall comply with relevant data protection regulations, such as GDPR or CCPA, regarding the handling of user data.

- Terms of service and privacy policy documents shall be provided to users for acceptance prior to using the software.

6.4 Reuse Objectives

- Where applicable, the software shall utilize open-source libraries or frameworks to promote code reuse and maintainability.

- Components developed for Laptop Advisor may be repurposed for future projects within the organization, following established reuse guidelines.

6.5 Accessibility Requirements

- The software shall adhere to accessibility standards (e.g., WCAG) to ensure usability for users with disabilities.

- Alternative text descriptions shall be provided for images, and keyboard navigation shall be supported for all functionalities.

6.6 Performance Monitoring

- The software shall include performance monitoring tools to track system usage, response times, and resource utilization.

- Performance metrics shall be regularly analyzed to identify areas for optimization and improvement.

6.7 User Feedback Mechanism

- A feedback mechanism shall be incorporated into the software to allow users to submit suggestions, report issues, or provide general feedback.

- User feedback shall be reviewed periodically to prioritize feature enhancements and bug fixes based on user needs.

6.8 Maintenance and Support

- The software shall be regularly maintained to address bugs, security vulnerabilities, and compatibility issues with evolving technologies.

- Technical support services shall be provided to assist users with software-related inquiries and troubleshooting.

6.9 Documentation

- Comprehensive user documentation, including user tutorials, shall be provided to facilitate user adoption and proficiency.