
Software Requirements Specification

Graduation Outliner 1.0b

Version 0.1

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Table of Contents

Table of Contents	1
Revision History	2
1. Introduction	3
1.1 Purpose	3
1.2 Project Scope and Product Features	3
1.3 References	3
2. Overall Description	3
2.1 Product Perspective	3
2.2 User Classes and Characteristics	3
2.3 Operating Environment	3
2.4 Design and Implementation Constraints	3
2.5 User Documentation	3
2.6 Assumptions and Dependencies	4
3. System Features	4
3.1 Design a Flowchart	4
3.1.1 Description and Priority	4
3.1.2 Stimulus/Response Sequences	4
3.1.3 Functional Requirements	4
3.2 View, Modify, and Fulfill Requirements	5
3.2.1 Description and Priority	5
3.2.2 Description and Priority	5
3.2.3 Functional Requirements	6
3.3 Open and Save	6
3.3.1 Description and Priority	6
3.3.2 Stimulus/Response Sequences	6
3.3.3 Functional Requirements	6
3.4 Validate Flowchart	7
3.4.1 Description and Priority	7
3.4.2 Stimulus/Response Sequences	7
3.4.3 Functional Requirements	7
Appendix A: Data Dictionary and Data Model	7

Revision History

Name	Date	Reason For Changes	Version
Jason Boyle	2/21/20	Initial SRS draft	0.1

1. Introduction

1.1 Purpose

To my knowledge, software that is designed to allow students to plan their quarterly course schedule is not available in the public domain. This senior project will attempt to fill that void.

1.2 Project Scope and Product Features

The software is targeted at both students and administrative faculty who need to create a quarterly course schedule, either for personal use or to be distributed to students. The software shall allow users to create a schedule, view course prerequisites, and validate a schedule against a separate requirements file.

1.3 References

None.

2. Overall Description

2.1 Product Perspective

The software will be a new, self-contained product. It is not based on an existing project.

2.2 User Classes and Characteristics

User	Description
Student	Students create flowcharts for their personal use. All requirements should be mapped to specific courses.
Faculty Administrator	Faculty Administrators create flowcharts for all students in a requirement category to use (i.e., students following the 2005-2007 Computer Science flowchart). Some requirements may be abstract in order for students to fill in the specific requirements (i.e., 12 units in GE area A).

2.3 Operating Environment

- OE-1: The system shall use the Java SE 6 platform.
- OE-2: The system shall use the Swing toolkit for GUI elements.

2.4 Design and Implementation Constraints

- CO-1: Users shall specify which requirements specific courses fulfill.

2.5 User Documentation

- UD-1: All end-user documentation shall be web-accessible and viewable through a web browser.
- UD-2: Documentation shall be written for end users.

UD-3: Documentation shall be written for developers who wish to modify or extend the system.

2.6 Assumptions and Dependencies

AS-1: Campus departments will provide an XML file detailing the requirements for students following a specific catalog year in that department.

3. System Features

3.1 Design a Flowchart

3.1.1 Description and Priority

Users may create a quarterly course schedule by adding course objects to a grid, the columns of which represent quarters. Courses may be deleted and moved between quarters via drag-and-drop. Course data may be edited. Users may specify prerequisite and corequisite courses as well as the number of units the course fulfills.

3.1.2 Stimulus/Response Sequences

Stimulus: User requests to create a new course in a specific quarter.
Response: System provides a form for the user to enter the course data.
Stimulus: User requests to delete a course.
Response: The course is removed from the flowchart.
Stimulus: User requests to update data for a course.
Response: The course data is presented in an editable format. When finished, changes may be saved or discarded.
Stimulus: User requests to move a course to a different quarter.
Response: The course is moved to the column representing the desired quarter in the flowchart.

3.1.3 Functional Requirements

Feature Requirements: Designing Flowcharts (FR-F)

Feature ID	Feature Name	Description
FR-F1	Create Courses(s)	The application shall allow the user to create a new course.
FR-F2	Modify Course(s)	The application shall allow the user to modify the data for an existing course.
FR-F3	Delete Course(s)	The application shall allow the user to delete an existing course.
FR-F4	Move Course(s)	The application shall allow the user to move a course to a different quarter.

3.2 View, Modify, and Fulfill Requirements

3.2.1 Description and Priority

Users may modify a list of requirements for an associated flowchart. Requirements consist of a name, category (optional), number of units, and a fulfillment.

A major requirement represents a course which is required to graduate (such as CSC 103 for Computer Science majors). Such a requirement is shown in the first row of the table below.

The rest of the rows in the table represent elective requirements, which may be fulfilled by one or more courses.

The fulfillment column for elective requirements should be left blank by faculty administrators; it will be filled in by students. However, required courses may have the fulfillment column pre-populated with the course name since that course must be taken to fulfill the requirement.

Sample list of requirements:

Name	Category	Units	Fulfillment
CSC 103	Major	4	CSC 103
A1	GE	4	ENGL 134
A2	GE	4	COMS 102
1a	Elective	8	CSC 365 CSC 471
Free	Elective	5	EE 112 IME 156

3.2.2 Description and Priority

Stimulus: Administrator requests to create a new requirement.

Response: System provides a form to allow the administrator to input the requirement.

Stimulus: Administrator requests to delete a requirement.

Response: System removes the requirement from the list of requirements.

Stimulus: Administrator requests to update a requirement.

Response: System provides a pre-populated form to allow the administrator to update the requirement.

Stimulus: Student requests to fulfill a requirement.

Response: System displays a form to allow the student to input one or more courses which he or she plans to take to fulfill the requirement.

Stimulus: Student requests to update the fulfillment for a requirement.

Response: Sysetem displays a form to allow the student to update the fulfillment for the requirement by adding or deleting courses.

3.2.3 Functional Requirements

Feature Requirements: Modify, View, and Fulfill Requirements (FR-RV)

Feature ID	Feature Name	Description
FR-RV1	Create Requirement	The application shall allow a faculty administrator to create a new requirement.
FR-RV2	Delete Requirement	The application shall allow a faculty administrator to delete an existing requirement.
FR-RV3	Update Requirement	The application shall allow a faculty administrator to update a requirement.
FR-RV4	Fulfill Requirement	The application shall allow a student to specify a list of classes which he or she plans to take to fill a requirement.
FR-RV5	Update Fulfillment for Requirement	The application shall allow a student to update the list of classes which he or she plans to take to fulfill a requirement.

3.3 Open and Save

3.3.1 Description and Priority

Flowcharts may be created, opened, and saved.

3.3.2 Stimulus/Response Sequences

Stimulus: User requests to create a new flowchart.

Response: System creates a new flowchart and displays it.

Stimulus: User requests to open an exisiting flowchart on disk.

Response: A standard open dialog is invoked. The sysem opens the flowchart file at the requested location.

Stimulus: User requests to save a flowchart.

Response: A standard save dialog is invoked. The system saves the flowchart as a file at the requested location.

3.3.3 Functional Requirements

Feature Requirements: Open and Save (FR-S)

Feature ID	Feature Name	Description
FR-S1	Create New Flowchart	The application shall create a new flowchart and display it.
FR-S2	Open Existing Flowchart	The application shall open an existing flowchart from a file on disk.

FR-S3	Save Flowchart	The application shall save the current flowchart to disk.
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3.4 Validate Flowchart

3.4.1 Description and Priority

A student may validate that a flowchart fulfills its corresponding requirements. The student will be informed of any discrepancies or incomplete requirements.

3.4.2 Stimulus/Response Sequences

Stimulus: Student requests to validate the flowchart.

Response: System provides a list of problems with the flowchart based on the requirements.

3.4.3 Functional Requirements

Feature Requirements: Validate Flowchart (FR-V)

Feature ID	Feature Name	Description
FR-V1	Display general reporting summaries by group	The application shall display the overall average ratings and the distribution of scores within the groups.

Appendix A: Data Dictionary and Data Model

Term	Description
Course	A quarter-long class attended by students.
Units	The number of units a course fulfills towards a student's graduation requirement and/or elective area.
Elective	A course may be taken by a student in a particular major but is not required for all students of that major.
Elective Area	A number of units which may be fulfilled by one or more specific classes, including GE courses, support courses, and free and technical elective courses.
Required Course	A course which must be taken by all students in a particular major in order to graduate.
Flowchart	A graphical representation of the courses which a student has taken or plans to take organized by quarter.
Requirement	A number of units which must be fulfilled by one or more courses.
Fulfillment	One or more courses which fulfill a requirement.