

Requirements Document

As requested by QED Technologies

Eduvise

LeapDesigns

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Revision History

Name	Date	Reason for Changes	Version
Entire Team	2019-01-23	Document creation	0.1
Entire Team	2019-02-02	Document contents	0.9
Entire Team	2019-02-05	Final draft	1.0

1. Introduction

1.1 Purpose

This Requirements Document details the requirements needed for QED Technologies' new academic advising system for the Faculty of Education at UVic. The project aims to make the academic advising process Faculty of Education more efficient by removing the necessity of physical storage and manual retrieval of documents and records.

1.2 Project Scope

This project's primary focus is to create a digital system for the handling of academic advising records for the Faculty of Education. The project has two main classes of users: students and academic advisors. Students have limited access to their records, while every advisor has full access to all records. These records include files for all of the student's correspondence with the Faculty of Education, as well as medical records, resumes, and letters of intent.

This project, titled "Eduvise", will be a software system that aims to increase the efficiency in the Faculty of Education by providing academic advisors with a better system to store and manage student records, and by providing easier access for students to see their own records and progress related to their degree. Advisors will have full access to add, view, and modify files pertaining to students. Students will be able to view some of the information pertaining to them, including information about their academic progress and performance. Eduvise will interact with its own database and UVic's internal student records database (See ISSUE-1).

1.3 Glossary of Terms

Academic advising record	Any file stored by the academic advisors within the Faculty of Education at UVic containing information about a particular student.
Academic Advisors	Refers specifically to academic advisors working in the Faculty of Education at UVic
NetLink ID	A unique personal identifier which is used as a username for online services provided by UVic
Referee	Someone who writes a reference letter for a student
Student number	A unique numeric identifier given to each new student when enrolling at the University of Victoria in the form V00 followed by 6 other digits.
Students	Refers specifically to students enrolled in a program in the Faculty of Education UVic

1.4 References

[1] uvic.ca. (2019). *Protection of privacy and Access to information - University of Victoria*. [online] Available at: <https://www.uvic.ca/vpfo/departments/privacy/policies-and-procedures/index.php> [Accessed 5 Feb. 2019].

[2] web.uvic.ca. (2019). *Statistics*. [online] Available at: <https://web.uvic.ca/calendar2019-01/cal/uvic/statistics.html> [Accessed 5 Feb. 2019].

[3] bclaws.ca. (2019). *Freedom of Information and Protection of Privacy Act*. [online] Available at: http://www.bclaws.ca/Recon/document/ID/freeside/96165_00 [Accessed 5 Feb. 2019].

[4] uvic.ca. (2019). *Protection of Privacy Policy*. [online] Available at: <https://www.uvic.ca/universitysecretary/assets/docs/policies/GV0235.pdf> [Accessed 5 Feb. 2019].

[5] uvic.ca. (2019). *Records Management Policy*. [online] Available at: <https://www.uvic.ca/universitysecretary/assets/docs/policies/IM7700.pdf> [Accessed 5 Feb. 2019].

1.5 Overview

This document consists of six main sections and one appendix. Section 2, “Overall Description,” describes Eduvise from a high level, including the product perspective, product features, user classes, operating environment, constraints on development, dependencies, and assumptions. Section 3, “System Features”, outlines the core features that must be in Eduvise. This section includes a description of each feature, the level of priority of each feature, and the requirements associated with each of the system features. Section 4, “External Interface Requirements”, describes logical characteristics between a proposed solution and a specific interface source. The interfaces covered are the user interface, hardware interface, software interface, and communication interface. Section 5, “Other Non-Functional Requirements”, describes the performance requirements, safety requirements, security requirements, and software quality attributes that are necessary for a proposed solution. Section 6, “Other Requirements”, describes all other requirements of a proposed solution not described in the rest of the requirement document. The appendix, “Issues List,” contains a list of remaining conflicts and open issues that are pending resolution.

2. Overall Description

2.1. Product Perspective

Eduvise is a software system that is currently being designed by LeapDesigns for the Faculty of Education academic advising office at the University of Victoria. Eduvise will be a new, self-contained system that improves, augments, and partially automates the entirely manual academic advising process that is currently in place at the Faculty of Education academic

advising office. Eduvise should increase advisor efficiency, allowing advisors to access student information and related documents with ease, and allow both students and advisors to view a student's academic progress and performance. It will store documents related to a student's academic advising, and allow advisors to view, modify, and append information to each student's record.

2.2. Product Features

The main classes of features that Eduvise provides are the following:

Search Functionality

The search function will allow academic advisors or students to find records within the Eduvise database or UVic's internal database.

Adding Academic Advising Records

Eduvise will allow academic advisors, students, and referees to upload academic advising records to its database.

Record Modification

Academic advisors will be able, through Eduvise, to modify academic advising records for their advising needs.

Record Exporting

Academic advisors and students will have the ability to export academic advising records through Eduvise.

Record Viewing by Advisors

Academic advisors will have access to view all the records stored in Eduvise's database and UVic's internal database.

Record Viewing by Students

Students will have limited viewing access to the records they can see within the Eduvise database and UVic's internal database.

Degree Planning

Eduvise will allow the use of academic advising records and students' academic history to assist academic advisors and students in planning their degree.

2.3. User Classes and Characteristics

Academic Advisors

This user class consists of academic advisors in the Faculty of Education who will be using Eduvise to support their interactions with students. Advisors currently access student documents through a manual process limiting advisors efficiency. Advisors currently have no interaction with a software system and typically have low experience with technical software. Changing to the Eduvise system will require some training for advisors.

Students

This user class consists of university students enrolled (currently or in the past three years) in any program in the Faculty of Education at UVic. The main use of Eduvise for students will be tracking their degree progress and tracking progress towards goals set by academic advisors. For a student to track their progress currently, they only have access to a physical transcript. Students will be able to use Eduvise, including any features and capabilities available to them, without any previous knowledge or experience related to Eduvise.

Referees

This user class consists of professionals overlooking the students' work experience will provide reference letters directly to the advisors by submitting the reference letters to Eduvise. A direct, secure submission will prevent students from altering the reference letters as well as ensure the validity of the reference letters.

2.4. Operating Environment

Eduvise will operate to support the Faculty of Education academic advising office at UVic, provide a way for students to access their own degree progress and course performance, and allow referees to directly and securely submit documents to the academic advising office. Eduvise will be accessible to students using a variety of devices from outside UVic. Eduvise will operate on the existing hardware and operating systems in use by the Faculty of Education.

2.5. Design and Implementation Constraints

Storage: Student records must be accessible for 3 years after a student has either graduated or last been enrolled in a Faculty of Education program.

External Application Interface: Continuous access to UVic's internal database for access to NetLink IDs and other student information is required.

Credential System: Students and advisors must be able to access Eduvise using their NetLink ID, which are the same credentials that they use to access most other UVic systems.

Information Security Policy: UVic has information security and privacy policies [1] to protect its students' information, which must be followed. These policies are described in detail in section 5.3 Security Requirements.

2.6. Assumptions and Dependencies

Database Connection: Eduvise depends on access to UVic's internal database for access to NetLink IDs and other student information (See ISSUE-1).

Current Records Transfer: The current academic advising records kept by the Faculty of Education academic advising office are stored in physical files and will need to be converted to a supported format to be transferred into the Eduvise database. This must happen before the academic advising office begins to use Eduvise as their primary academic advising system.

3. System Features

In section three, any reference to students and academic advisors pertains exclusively to the students and academic advisors within the UVic Faculty of Education. For further information on the roles of student and academic advisors in the report, refer to section 2.3 User Classes and Characteristics.

3.1 Searching Feature

3.1.1 Description and Priority

The searching feature should be effective in finding specific students, professors, and courses stored by Eduvise or the UVic internal database. This feature should allow academic advisors to locate records using a variety of keywords and phrases that are related to the record they are trying to find. Searches will return all records pertaining to the search query.

Priority: High

3.1.2 Functional Requirements

REQ-1.1: Academic advisors must be able to search for students via name, NetLink ID, or student number.

REQ-1.2: Academic advisors must be able to search for UVic professors by name, faculty, or courses taught.

REQ-1.3: Academic advisors must be able to search for UVic courses by course code, course number, or department.

3.2 Adding Academic Advising Records

3.2.1 Description and Priority

The adding academic advising records feature will make it possible for academic advisors to add records, documents, and information related to a student. Students should be able to submit a one-time intake form the first time they attend an academic advising session, and referees need to be able to securely submit documents at the request of academic advisors.

Priority: High

3.2.2 Functional Requirements

REQ-2.1: Academic advisors must be able to upload one or more academic advising records related to a student.

REQ-2.2: A student must be able to submit a one-time intake form containing general information about their advising needs.

REQ-2.3: At the request of an academic advisor, referees must be able to securely submit one or more documents (see EIR-4.1).

3.3 Academic Advising Record Modification

3.3.1 Description and Priority

Academic advisors have daily interactions with student records involving updating and editing these records. These changes are the result of meetings with students, acquisition of new information, and information communication to other academic advisors.

Priority: Medium

3.3.2 Functional Requirements

REQ-3.1: Academic advisors must be able to replace an academic advising record with an updated copy.

REQ-3.2: Academic advisors must be able to update notes pertaining to each meeting with a student.

REQ-3.3: Academic advisors must be able to add and update annotations on each academic advising record related to a student.

REQ-3.4: No academic advisor may modify an academic advising record at the same time as any other academic advisor.

REQ-3.5: Academic advisors must be able to archive academic advising records.

REQ-3.5: Academic advisors must be able to restrict access of an academic advising record from the student which it is related to.

3.4 Academic Advising Record Export Feature

3.4.1 Description and Priority

The academic advising record export feature should allow both students and academic advisors to export the chosen records and documents they have access to in a printable or readable format.

Priority: Low

3.4.2 Functional Requirements

REQ-4.1: Each student and academic advisor must be able to export one or more records related to a student in an easily printable or otherwise readable format.

3.5 Record Viewing By Students

3.5.1 Description and Priority

Each student will need access to view any records pertaining to their degree. Students should also be able to check on their current degree status and progress towards graduation via Eduvise.

Priority: High

3.5.2 Functional Requirements

REQ-5.1: Each student must be able to view their academic scores compared to the mean score of all students of each class they have taken.

REQ-5.2: Each student must be able to view their progress towards graduation including specific goals for the student set with an academic advisor.

REQ-5.3: Each student must be able to view only the records which are accessible to them (see NFR-3.8 for a list of documents not accessible to students).

REQ-5.4: Each student must be able to view all academic advising records accessible to that student without necessarily being within the UVic telecommunication network.

3.6 Record Viewing By Academic Advisors

3.6.1 Description and Priority

Academic advisors should be able to view all academic advising records in Eduvise.

Priority: High

3.6.2 Functional Requirements

REQ-6.1: Each academic advisor must be able to view each student's progress towards graduation.

REQ-6.2: Each advisor must be able to view the average score achieved by students in a class on a term-by-term basis, and be able to view the instructor(s) of each class on a term-by-term basis.

REQ-6.3: Each academic advisor must be able to view each annotation stored on any record by any academic advisor (see section 3.3).

REQ-6.4: Each academic advisor must be able to view student-advisor correspondence of each student.

3.7 Student Degree Planning

3.7.1 Description and Priority

Academic advisors assist students by helping them set academic goals for the students to complete. These goals often take the form of notes that outline a set of criteria which the student is aiming to complete. Academic advisors also help students by mapping out a degree plan on a template calendar. The degree map will show a student which courses should be taken each term to complete their degree.

Priority: Medium

3.7.2 Functional Requirements

REQ-7.1: Each advisor must be able to add, view and edit progress towards specific goals for a student.

REQ-7.2: Advisors must be able to provide a degree map for a student from a template.

4. External Interface Requirements

4.1 User Interfaces

EIR-1.1: All users of Eduvise must always have access to any support information required to operate Eduvise.

4.2 Hardware Interfaces

EIR-2.1: Eduvise must be accessible on any device required by the advising office (See ISSUE-2).

4.3 Software Interfaces

EIR-3.1: Eduvise must have access to students' NetLink IDs and information corresponding to the NetLink IDs through UVic's internal student database.

EIR-3.2: Eduvise must be able to access and support each record type that academic advisors require from the UVic internal student database. Types of these records include (See ISSUE-3):

- Student transcripts (both internal and external to UVic)
- Medical records
- Resumes

EIR-3.3: Eduvise must be accessible on any operating system used by the advising office (See ISSUE-4).

EIR-3.4: Eduvise must support the importing, viewing, and exporting of emails, digital images, documents, or plain text (See ISSUE-5).

4.4 Communications Interfaces

EIR-4.1: Each academic advisor must be able to provide, to any referee, a method to submit one or more documents to Eduvise. This method must not provide access to any record stored by Eduvise (see REQ-2.3).

5. Other Non-Functional Requirements

5.1 Performance Requirements

The performance requirements for this project can be divided into the following two main categories: capacity and speed.

Capacity

At any given time, UVic has approximately 4000 students [2] who are currently enrolled in or have at some point in the past three years been enrolled in the Faculty of Education.

NFR-1.1: Eduvise must be able to store every academic advising record pertaining to each of at least 4000 students.

NFR-1.2: Eduvise must be able to be concurrently accessed by up to 200 unique users.

Speed

NFR-1.3: Each request for authentication of any user must be approved or declined within three seconds.

NFR-1.4: Each request to access any academic advising record must be given a response within three seconds.

NFR-1.5: Each access of any academic advising record must reflect all modifications of that academic advising record that were made at least ten seconds before the time of access.

5.2 Safety Requirements

NFR-2.1: Eduvise must backup all records and documents for data restoration in case of data loss or corruption.

5.3 Security Requirements

NFR-3.1: Eduvise must comply to BC's *Freedom of Information and Protection of Privacy Act* (FIPPA). [3]

NFR-3.2: Eduvise must comply to UVic's *Protection of Privacy Policy*. [4]

NFR-3.3: Eduvise must comply to UVic's *Records Management Policy*. [5]

NFR-3.4: A student or academic advisor must be granted access to the records that they have permission to access only after authenticating their identity by using their UVic NetLink ID and password.

NFR-3.5: No software system that is not Eduvise may have access to any academic advising record stored by Eduvise.

NFR-3.6: Academic advisors must have access to allow a referee to submit a record securely such that the record is only seen by advisors and referees do not see any other records.

NFR-3.7: Students must not be able to access academic advising records of other students.

NFR-3.8: Students must not be able to access the following types of academic advising records (See ISSUE-6):

- Employer feedback
- Recommendations to ministry of education
- Documents or notes that academic advisors have restricted access to for that student.

5.4 Software Quality Attributes

Usability

Eduvise must be easy and intuitive to use, so it can be used by both technical and non-technical personnel.

NFR-4.1: Each academic advisor must require no more than two hours of initial training in the use of Eduvise from technical experts before they are able to correctly access, modify, and export any academic advising record.

NFR-4.2: Each academic advisor must require no more than two hours of support per month in the use of Eduvise from technical experts.

NFR-4.3: Every student must require no training in the use of Eduvise from technical experts before they are able to correctly access and export any academic advising record that they have permission to access.

Availability

NFR-4.5: Each academic advisor must be guaranteed to have access to Eduvise on each weekday (Monday, Tuesday, Wednesday, Thursday, and Friday) from 7:00 am to 6:00 pm PST, with 99.9% uptime during these times.

Testability

NFR-4.6: Unit test coverage of Eduvise must be at least 70%.

6. Other Requirements

REQ-6.1: Each academic advising record must be accessible for no less than 2 years from the last date that the student the record pertains to is enrolled in any program at UVic.

REQ-6.2: Each academic advising record must be accessible for no longer than 3 years from the last date that the student the record pertains to is enrolled in any program at UVic.

Appendix: Issues List

ISSUE-1: More information is required to know which of UVic's internal databases are required to interface with Eduvise. We made the assumption that there is only a single "internal student database"; however, this may not be the case.

ISSUE-2: A complete list of supported device types and hardware and for Eduvise is required for EIR-2.1.

ISSUE-3: A complete list of academic records that can be accessed through Eduvise from the UVic internal database is required for EIR-3.2.

ISSUE-4: A complete list of supported operating systems for Eduvise is required for requirement EIR-3.3.

ISSUE-5: A complete list of supported file types and formats to be accessed by Eduvise is required for EIR-3.4.

ISSUE-6: A complete list of academic record types that students are not allowed to access is required. LeapDesigns believes that the list referenced in NFR-3.8 is not complete.