UTRGV Curriculum Accreditation Program

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UTRGV Accreditation Program

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Document Approval

The following Software Requirements Specification has been accepted and approved by the following:

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| --- | --- | --- | --- |
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**1. Introduction**

**1.1 Purpose**

This Software Requirements Specification document states all of the requirements for building the UTRGV curriculum accreditation program, generating an organized report, and provides a detailed description of accreditation. This will explain the purpose and features of the UTRGV curriculum accreditation program such as network access and database updating. It is intended for both software engineers who are curious about building accreditation software and end users such as visitors, students, and staff.

**1.2 Scope**

The software in this document as described is the UTRGV Curriculum Accreditation Program. This program provides an accessible means for a client to store accreditation data and generate readable reports. The GUI built must allow any authorized personnel to store information and allow any user to request a highly detailed report based on UTRGV. Only authorized personnel are allowed to modify the information on the server. They however are responsible for ensuring the information is up to date and perform daily maintenance periods to ensure the system is up and running throughout the day. Although the GUI will be desktop based, the application should allow users to download the generated reports.

**1.3 Definitions, Acronyms & Abbreviations**

|  |  |
| --- | --- |
| **Term** | **Definition** |
| GUI | Graphical User Interface |
| XML | Extensible Markup Language |
| HTML | Hypertext Markup Language |
| UTRGV | University of Texas at Rio Grande Valley |
| Accreditation | A process where competency, authority, or credibility is presented via certification |
| Repository | A central location where data is stored and managed |
| Automate | Conversion of a process to automatic operation |
| Database | An organized collection of data |
| CV | CodeView |
| SRS | Software Requirements Specification |

1.4 References

**1.5 Overview**

This SRS is organized in two main sections. The first one titled “General Description” establishes the motive behind the development of this project. The second one titled “Specific Requirements” states precise details for the software engineer to understand and implement during all phases of this project.

**2. General Description**

**2.1 Product Perspective**

This software is intended to fulfill the automated means of generating UTRGV reports and to implement all of it's accreditation information into the database via a self-contained environment. It is anticipated that the UTRGV accreditation software can offer the ideal template for schools and universities to build software and utilize their own databases with for their own students and staff. It also must allow any user to access the information from their own devices so long as they are connected to the network

**2.2 Product Functions**

Main objective: to create a wizard (GUI) for the user that allows him/her to store accreditation data and generate requested reports. The accreditation data must be the university information and the department information. In addition, generating reports must include information related to both undergraduate and graduate students. These features should be implemented...

* Automating the process of accreditation data
* Ease of use with a streamlined GUI
* Enter unique information for a university (a specific branch of UTRGV)
* Enter unique information for the department
* Allow authorized users to organize the UTRGV data with either a database, XML files, or HTML file(s)

**2.3 User Characteristics**

The intended users of this application are college-level students, professors, and faculty staff who are in need of generating their own reports of UTRGV's data.

**2.4 General Constraints**

There are no constraints to note for the time being

**2.5 Assumptions and Dependencies**

Depending on the user's device, the software engineer must attempt to understand how the device's OS works should there ever be a user whose device cannot generate reports with. In the worst case scenario this happens, the software engineer shall make an important note on the “generate report” form; stating that only certain operating systems will allow the user to generate reports and offer automated messages for the user to utilize alternatives.

**3. Specific Requirements**

**3.1 External Interface Requirements**

The database is the only external interface this program will need. It must contain the following... (currently in development

1. GUI wizard
2. data-based driven process
3. Organization of data and access to database
4. Automation of accreditation for UTRGV

**3.1.1 User Interfaces**

A GUI wizard will allow either the storing of accreditation data or generation of requested reports. A password dialog box will be prompted for anyone attempting to access the database

**3.1.2 Hardware Interfaces**

UTRGV Curriculum Accreditation Program will be made for various form factors. Depending on the limitations this project will likely encounter, we may be forced to implement a reminder to users that only certain hardware will be supported.

**3.1.3 Software Interfaces**

To be developed with Java programming language. The use of SQL may be necessary for the database in addition to XML or HTML use

**3.1.4 Communications Interfaces**

Must interact with the UTRGV database and allow utilization of HTML or XML file access. Must also allow requests of reports to be made.

**3.2 Functional Requirements**

The application shall allow authorized users to update and modify the database. The use of XML or HTML is recommended to make changes accordingly. The process should be instant and testable with a sample report. The GUI in development must allow the authorized user to make such changes to the UTRGV database

The application shall allow any user to generate a PDF report directly from the database from any mobile device. Note that every device may not work (should this happen, the error handling will display a message showing all the alternatives the user could do to generate his/her report)

**3.3 Use Cases**

(currently in development)

3.3.1 Use GUI to generate a report in PDF at the choice of the user

3.3.2 Use GUI to modify contents of database

**3.4 Classes / Objects**

(Currently in development)

* University
  + Name
  + Logo
  + Mission
  + Vision
  + College
    - Name
    - Number
  + List of courses
    - prefix
    - number
    - name
    - hours
    - description
    - prerequisities
* Department
  + Mission and vision of college
  + Mission and vision of department
  + Faculty information
    - Number
    - Personal/academic
    - CV file
  + Program
    - General information
      * Name
      * Degree
      * Labs
      * Equipment
    - Students
      * Amount
      * Rank
      * Gender
      * Ethnic
      * Age
      * etc.
      * Learning outcomes
    - Main study
      * Administrator
      * Course-to-learning outcomes
      * Required courses
* Report
  + Students
    - Undergraduate
      * Text or web or PDF
    - Graduate
      * Title page
      * ToC
      * University information
      * College information
      * Department report
      * Appendix

More then 3 classes or functions will be required to allow modification of this data

**3.5 Non-Functional Requirements**

**3.5.1 Performance**

Because this program is mainly for reading information, real-time performance is not an issue. It should take no more then a few seconds to generate any report (perhaps a minute at best for generating all of the complete information). The system should also be quick for authorized users to modify the database as the information is measured in kilobytes.

**3.5.2 Reliability**

The program must be widely available and process generating reports simultaneously throughout proper networking ports

**3.5.3 Availability**

The database shall be accessible from 6 AM through 5 AM (downtime of 1 hour per day for maintenance).

**3.5.4 Security**

An authorized user must create a password with at least a minimum of 8 characters (must include letters both uppercase and lowercase, numbers, and symbols) for future access. No security is necessary for any user to generate reports.

**3.5.5 Maintainability**

When inconsistent data is reported, the database shall address the fix within the day of the occurrence.

**3.5.6 Portability**

The server information must be able to load for the following desktop OS users: Windows XP and above, Mac OSX, and various Linux distros. Mobile OS support is strongly recommended.

3.6 Inverse Requirements

**3.7 Design Constraints**

While a single programming language will be primarily used

**3.8 Logical Database Requirements**

A database will be used for this software. It must utilize either XML or HTML files for modifying the database. Storage is of no concern for only proper data integrity is necessary.

**3.9 Other Requirements**

None for the time being

**4. Analysis Models**

**4.1 Sequence Diagrams**

Currently in development

**4.2 State-Transition Diagrams**

Currently in development

**4.3 Data Flow Diagrams**

Currently in development

**5. Change Management Processing**

The software engineer's instructor Mahmoud Quweider is allowed to check on the software engineer's progress via Github. He may reiterate ongoing requirements and could state new program requirements at anytime. This shall be amended or removed upon request.

**A. Appendices**

Currently in development. May be subject to removal