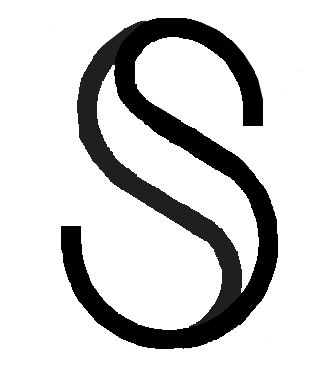
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**Software Requirements Specification Document**

For the CSUS Hornet CardGen System

2017/05/15

|  |  |  |
| --- | --- | --- |
| **Team Members:** | William Dobson  Stephen Gimpel  Elliot Hawkins  Ron Lewis  Marryum Malik  Omar Tapia | *willdob95@gmail.com*  *gimpelstephen1@gmail.com*  *elliotshawkins@gmail.com*  *ron.lewis@gmail.com*  *marryum786jamal@gmail.com*  *omaratapia@csus.edu* |

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# 1. Introduction

The Computer Science department office makes Faculty Information Cards (FICs) each semester, which are then put up outside each faculty member’s office, as well as in full outside the department office. These cards display course information taught by the faculty member, as well as office location, office hours, and contact information for the faculty member. This card is to inform students and others of availability for faculty members. Currently, the information is collected from the faculty members and then manually put into Microsoft Word templates by the office clerk. They are then formatted and printed out individually.

## 1.1 Purpose

This Software Requirements Specification (SRS) describes the functional and nonfunctional requirements for software release 1.0 and expected subsequent releases of Hornet CardGen. This document is intended to be used by the members of the project team who will implement and verify the correct functioning of the system. Unless otherwise noted, all requirements specified here are committed for release 1.0.

## 1.2 Document conventions

No special typographical conventions are used in this SRS.

## 1.3 Project scope

Hornet CardGen will permit Office Administrators and Office Clerks to create and print FICs. A detailed description is available in the features that are scheduled for full or partial implementation in this release.

## 1.4 References

Fletter, Dale. (2017, Jan 23 - May 12). *Software Specifications and the Business Analyst: An industry’s perspective*. Lecture at Brighton Hall, California State University, Sacramento, CA.

Wiegers, Karl and Beatty, Joy. (2014, April). *Software Requirements* (3rd ed.). Redmond, WA: Microsoft Press.

# 2. Overall description

## 2.1 Product perspective

Hornet CardGen is a new software system that replaces the current manual processes for creating FICs in the Computer Science Department of California State University, Sacramento. The system is expected to evolve over several releases, ultimately providing multiple department’s access to our FIC printing services.

## 2.2 User classes and characteristics

|  |  |
| --- | --- |
| **User Class** | **Description** |
| Office Administrator | An Office Administrator is an office employee who organizes course and faculty information of their assigned department. The Office Administrator is expected to create FICs every semester, or when changes in information occurs. |
| Office Clerk | An Office Clerk is an office employee who requests and inputs faculty office hours for their assigned Department. The Office Clerk is expected to provide any new or changed faculty member’s office hours prior to the start of each semester. |

## 2.3 Operating environment

Hornet CardGen shall correctly operate using the department supported version of the Google Chrome web browser.

Hornet CardGen shall permit user access from authenticated intranet and internet connection.

## 2.4 Design and implementation constraints

The system shall use a standard MYSQL database engine.

All HTML code shall conform to a minimum of HTML 5.0 standard.

## 2.5 Assumptions and dependencies

Assumptions

* This first iteration of the system will primarily be used by the office administrator and office clerk in the Computer Science department.
* In a future iteration, where more departments are considered to use the product, more analysis must be done to decide if any changes will be needed to accommodate them. For now, it is best to assume that there will be some amount of change needed. At bare minimum, time will need to be spent to train more people to use the product.
* Appropriate resources will be provided for the system to be a success. These resources may include hardware and software that is required for everything from development to running and serving the application.
* The external Registrar’s system will be assumed to be up and running, and the exported file given to Office Administrators does not change after Hornet CardGen undergoes development. This assumption should be followed up on and verified, should this project undergo actual design and development.
* The system will require some level of maintenance for the Database Management System and possibly maintenance for a machine that will serve the application (pending application development and implementation).

Dependencies

* This system requires the external Registrar's system to be operational and accessible to Office Administrators for manual data export.
* The format of the data exported from the Registrar system must be unchanged from the development phase of Hornet CardGen. If the format changes at all on the Registrar’s end, it is likely that the data import process in Hornet CardGen will be broken.
* This system requires a database to store appropriate information and remove extraneous information imported from the registrar's import file.
* This system requires an active printer to be accessible for the final task of printing the FIC Report.
* This system requires an Office Administrator or Office Clerk to collect and verify the information, as well as print the FIC Report.
* The system will export to a file that can be printed from most PCs. That file will be formatted to print on Avery 5689 Cardstock.

# 3. System features

## 3.1 Create a Semester

Add a new semester to the system, with the option of importing previous semesters faculty member data.

### 3.1.1 Description

An Office Administrator who has been authenticated can add a new semester to the system. The Office Administrator has the option of importing faculty member data from a previous semester, up to two semesters back (ie: if you are adding Fall 2017, you can import data from Spring 2017 and Fall 2016).

### 3.1.2 Functional requirements

From the Semester List page, an Office Administrator will be able to add a new semester.

The option of importing faculty member data (everything except courses) from one of the last two semesters will be made clearly available to the Office Administrator during this process.

## 3.2 Import Registrar Data

Update the courses in a selected semester from a file that is generated by the Registrar.

### 3.2.1 Description

An Office Administrator who has been authenticated can replace all course information in the semester from a newly created registrar import file. It is assumed that the new file from the Registrar is 100% up to date, and all existing course data for that semester will be wiped upon import. Due to this, there is an extra confirmation step.

### 3.2.2 Functional requirements

From the Semester Detail view, an Office Administrator will be able to import course data from a file generated by the Registrar.

Upon selecting the import option, the Office Administrator is shown the following prompt and asked to confirm: “All existing course data for this semester will be deleted. If there were any manual changes to courses that are not reflected in the registrar import, they will need to be re-added.”

When the Office Administrator confirms, the System will parse the import file. Only if the file is valid, the System wipes the current course data and runs the import. If the file is invalid, the system should not delete existing course data, and alerts the Office Administrator that the file was not in the right format.

## 3.3 Manage Course-Section Data

Update any course-sections in a selected semester from any changes such as a change in faculty member teaching a course section or a course section being cancelled due to a shortage of students enrolled.

### 3.3.1 Description

An Office Administrator who has been authenticated can modify any course sections within the system. The Office Administrator can change the listed faculty member of any of the course sections within the system or remove any of the course sections altogether. This is to remove the need to re-import a file generated by the Registrar which would write over all course information already established within the system that doesn't need to be changed.

### 3.3.2 Functional requirements

Once a semester is selected the Office Administrator has the ability to see all the course sections in the system.

After selecting a course, the Office Administrator will be directed to a Course Detail view for that selected course section. That Course Detail view will display the basic information of the course section selected and contain an Edit and Delete button.

When the Edit button is selected, the Office Administrator will be directed to a Course Edit View where they can make any changes to the basic information of the course section such as changing the faculty member who teaches the section.

When the Delete button is selected, the Office Administrator will be prompted if they wish to continue the process to remove the selected course section or cancel the deletion request and return to the Course Edit view.

Approving the deletion request will remove the course section from the Course Sections list on the Semester Detail View and redirect the Office Administrator back to the course section list.

## 3.4 Manage Faculty Member Data

Creating and editing faculty member information by semester.

### 3.4.1 Description

An Office Administrator who has been authenticated can view and edit faculty member information by semester. An Office Administrator can also add a new faculty member to the semester.

### 3.4.2 Functional requirements

Once the selection for the semester is made the admin has the ability to see the faculty members in the system.

A person may either select a faculty member that is already in the system, or press an Add button which allows you to add a new faculty member to the list of already existing faculty members.

When you click on the Add button you are able to add a new faculty member to the list. In order to add the faculty member, you will need the following information; name, semester, office number, department, and e-mail.

When you click on the faculty member that is already on the system you will find an Edit button which will allow you to edit the Faculty member information.

## 3.5 Generate FIC Report

Create a collection of FICs to print for a given semester.

### 3.5.1 Description

An Office Clerk who has been authenticated can generate a collection of FICs for the desired semester. As the report will contain a FIC for every faculty member, it is assumed that all desired information for a given semester is already contained within the database.

### 3.5.2 Functional requirements

From the Semester Faculty Member List view, an Office Clerk will be able to generate a FIC Report.

Upon selecting the Generate Cards option, the System will create a FIC for every faculty member in the database within the user’s department who is instructing a course for the given semester. These FICs will then be inserted into a report document, with four FICs per page to fit the Avery 5689 Cardstock format. Upon completion of report generation, the Office Clerk’s web browser will be redirected to the generated report.

Each FIC within the FIC report will contain information on one faculty member. This information will include the current semester, the faculty member’s name, department, contact information, office location, office hours and a list of each course section they are teaching. These course section listings will consist of the course number, section number, and room location, as well as the week days and times that the section meets.

The system will not directly handle the display or printing of these reports. The file format should be chosen with the intent to ensure maximum compatibility and ease of use, and it is the responsibility of the Office Clerk to use their viewer of choice to review and print the FIC report.

## 3.6 Manage Departments

Creating a new department after providing the required information.

### 3.6.1 Description

An Office Administrator who has been authenticated can create a department. Department creation requires creating and then assigning an account to the position of Office Administrator for the created department.

### 3.6.2 Functional requirements

From the Landing Page, an Office Administrator will be able to create a new department.

Creating a new department will require the creation of a new account to be Office Administrator of the new department. The department will also require a unique name. See 3.7 for account creation details.

## 3.7 Manage Users

Creating new users, updating user roles, and resetting user passwords in the system.

### 3.7.1 Description

An Office Administrator who has been authenticated can create a new user or change a user’s role, exclusively to their own department. An Office Administrator can also view all users on the system and reset the user’s password.

### 3.7.2 Functional requirements

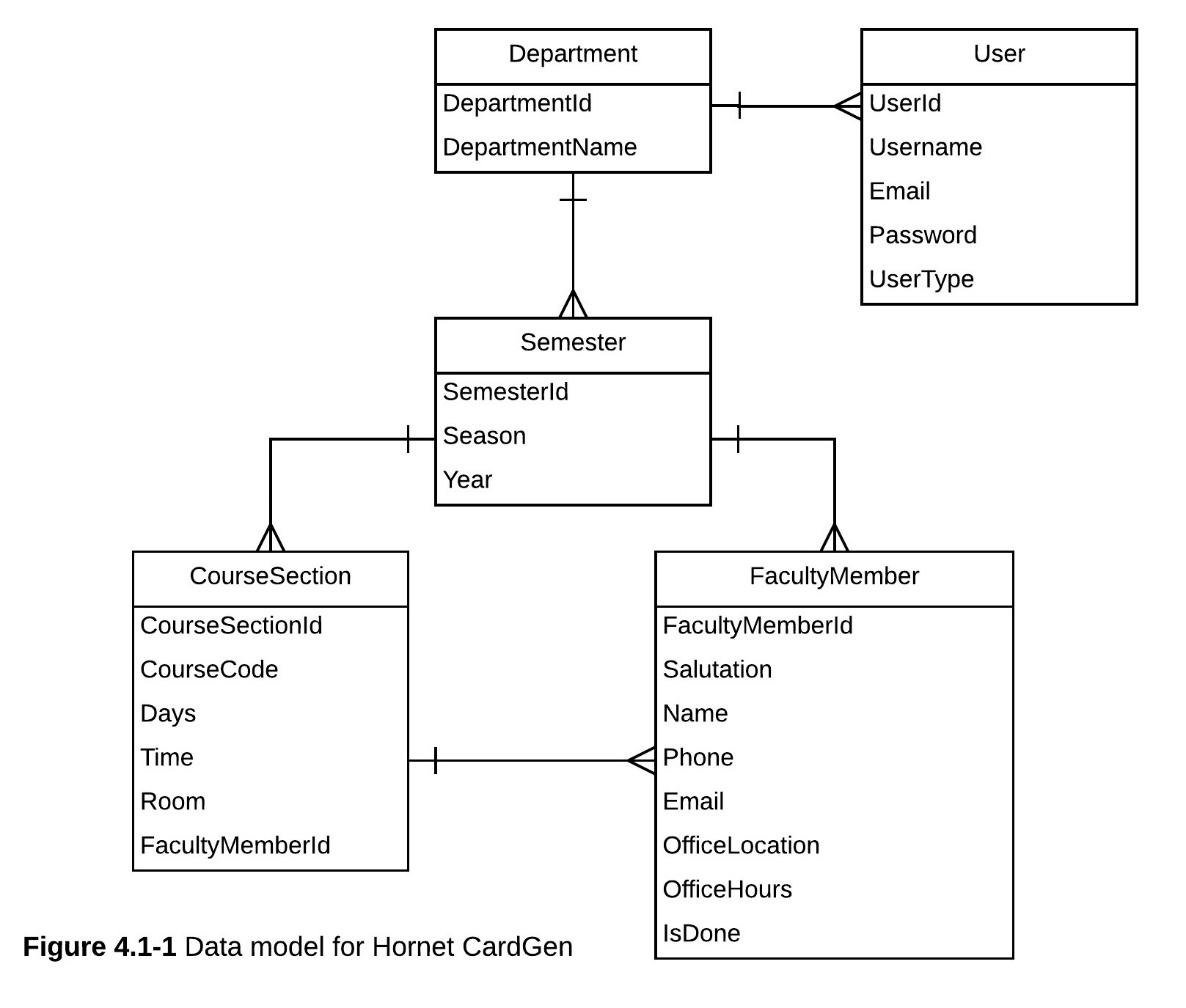
Once the Office Administrator is viewing the users, they can select a user to change their role to either Office Administrator or Office Clerk. This option will only be available to users in the same department as the Office Administrator.

Once the Office Administrator is viewing a user’s details, they can choose to reset their password.

When the Office Administrator selects add a new user, the Office Administrator will be required to provide the name of the user and the role of the user.

# 4. Data requirements

## 4.1 Logical data model



## 4.2 Data dictionary

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Data Element** | **Description** | **Type / Composition** | **Length** | **Values** |
| Department | The department containing the users and semesters in the system. | Department ID  +Department Name |  |  |
| Department ID | Unique identifier for the department. | Unique Integer | 9 | Values start at 1 as 0 is reserved for null. |
| Department Name | Name of the Department | String | 20 |  |
| User | The account for the user of the Hornet Cardgen System | User ID  +Username  +User Password  +Department  +User Type  +Email |  |  |
| User ID | Unique identifier for the user. | Unique Integer | 9 | Values start at 1 as 0 is reserved for null. |
| Username | Name of the given user. | String | 20 |  |
| Email | Email for the given user. | String | 255 | Must be in a valid email format. |
| Password | Password of the given user | String | 60 | Size is larger than other strings to enable use of passphrases. |
| User Type | Type of user, to determine permissions within the system. | Clerk or Admin |  |  |
| Semester | Entry for a given semester within the system. | Semester ID  +Year  +Department  +Season |  |  |
| Semester ID | Unique identifier for the semester | Unique Integer | 9 | Values start at 1 as 0 is reserved for null. |
| Year | Year for a given semester. | Integer, YYYY format. | 4 |  |
| Season | Season that the semester takes place in. | String | 11 | Spring, Fall |
| Course/Section | A course or section offered in a given semester. | CourseSectionID  +CourseCode  +Days  +Time  +Room  +Faculty Member |  |  |
| CourseSectionID | Unique identifier for a Course/Section | Integer | 9 | Values start at 1 as 0 is reserved for null. |
| CourseCode | Course code for a given course. | String | 8 | Department + Course, ex. CSC 170-01. |
| Days | Days of the week the course takes place on. | String, DDDDDD | 6 | Any combination of M/T/W/Th/F/S |
| Time | Times that a course takes place in | String, H:MM-H:MM | 9 |  |
| Room | Room that a course takes place in | String | 20 | Room consists of building + room number, ex. Riverside 1006. |
| Faculty Member | A faculty member instructing a course in the given semester. | FacultyMemberID  +Semester  +Faculty Member Name  +Office Location  +Contact Info |  |  |
| Faculty Member ID | Unique identifier for a faculty member. | Integer | 9 | Values start at 1 as 0 is reserved for null. |
| Faculty Member Name | Name of the faculty member | String | 20 |  |
| Office Location | Location of the faculty member’s office hours location. | String | 20 |  |
| Contact Info | Information on how to contact a faculty member. | String | 20 | Left as a string so that it can contain anything, ex.phone number or email. |

## 4.3 Reports

|  |  |
| --- | --- |
| **Report ID** | **SS-HCG-1** |
| Report Title | Faculty Information Card |
| Report Purpose | To provide students with faculty member office hours |
| Priority | High |
| Report Users | Sacramento State University Students |
| Data Sources | * Exported Registrar CSV file * Hours entered by Office Clerk |
| Frequency and Disposition | FICs are generated four per page upon request of the Office Clerk (see SS-HCG-2). The cards will be affixed near the office of each faculty member present on the card, as well as outside the department office. |
| Latency | No user detectable latency in generation |
| Visual Layout | Cards are generated in landscape to fit on each 5.5x4.25” section of Avery 5689 Cardstock. |
| Report Body | The following information must be included on each card:   * Department * Semester * Name of Instructor * Class Schedule   + Course Number   + Class Week Days   + Class Hours   + Class Room * Office Hours * Contact information |
| Security Access Restrictions | Only an Office Clerk or Admin may generate FICs. Any person with access to the CSU Sacramento campus may view the cards. |

|  |  |
| --- | --- |
| **Report ID** | **SS-HCG-2** |
| Report Title | FIC Sheet |
| Report Purpose | To provide Office Clerks with four cards arranged in Avery 5689 Cardstock format for printing. |
| Priority | High |
| Report Users | ECS Department Office Clerks |
| Data Sources | * FICs (see SS-HCG-1) |
| Frequency and Disposition | FIC Sheets are generated shortly before the beginning of each semester at CSU Sacramento by Office Clerks. The number of sheets to be generated can be calculated by taking the ceiling of the number of faculty members teaching courses in a semester divided by four, rounded up. |
| Latency | No user detectable latency in generation |
| Visual Layout | Card sheets are printed in Landscape to fit the format of Avery 5689 Cardstock. |
| Report Body | Each FIC Sheet must consist of four FICs (SS-HCG-1). Each FIC must take a quarter of the 8.5x11” page as arranged in Avery 5689 Cardstock. |
| Security Access Restrictions | Only an Office Clerk or Admin may generate FIC sheets. |

## 4.4 Data acquisition, retention, and disposal

All faculty member information, apart from their office hours, shall be initially input into Hornet CardGen through import of the CSV formatted file exported from the Registrar Database. The member’s office hours will be appended to the imported information by the Office Clerk or Office Admin, and must be initially obtained externally from the system by the user.

New semesters may be created through import of the Registrar Database CSV file, or by reusing information from one of the prior two semesters. If information from a previous semester is reused, the user must confirm that each individual entry is still accurate.

All data entered into Hornet CardGen must be retained indefinitely. If any data is to be deleted, it must be done manually and externally.

# 5. Interface requirements

## 5.1 User interfaces

The table below outlines different screens that an Office Administrator or Office Clerk will see and interact with in the system. The left column contains a rough sketch of what the page might look like. The column on the right explains the page and the anticipated behaviors on that screen.

LEGEND:

|  |  |
| --- | --- |
| [ Button Text ] | The square braces indicate a clickable button. |
| >> List Item << | The double guillemets pointing inwards indicate an item in a list (what is shown will depend on data). |
| < Header / Detail View > | The single guillemets pointing outwards indicate a displayed field, that will be populated pending on who is logged in or what page they are viewing. |
| { item 1, item 2, … } | The curly braces indicate options in a select list. |

|  |  |
| --- | --- |
| ***Suggested Screen Options*** | ***Detailed Description*** |
| Hornet CardGen Login  Username: .  Password: .  [ Login ] | *Log in page*  An Office Administrator or Office Clerk will use this page to log in. They should enter their username and password, and then hit the Login button. |
| Hornet CardGen  <Department> Home  Semester List  >> Fall 2016 <<  >> Spring 2017 <<  [ Add Semester ]  [ View Users ]  [ View Departments ]  [ Reset my password ] | *Department Home Page*  After being logged in, it should be clear which department the user is managing.  This page shows a list of semesters. Only the two most recent semesters are shown. Clicking on a semester will take the user to that semester’s detail view.  An Office Administrator will see options to Add a Semester, View Users, and View Departments.  Both Office Administrators and Office Clerks will see the option to Reset their password. |
| Hornet CardGen  Password Reset for <username>  New Password: .  Confirm Password: .  Current Password: .  [ Submit ] | *Reset PW Screen*  After hitting the option from the Department Landing Page to reset their password, the user is taken to a screen similar to this.  They must enter their new password twice to confirm the correct password, as well as their current password to authorize the change.  Clicking Submit will change the user’s password. |
| Hornet CardGen  <Department>  Add Semester  Semester Type: { Fall, Spring }  Semester Year: .  Import faculty data from a previous semester? { Yes, No }  { If yes, list last two semesters }  [Add Semester] | *Add Semester*  Upon choosing “Add Semester” from the Department Home page, an Office Administrator is presented with a screen that has these options.  You must select if the new semester is a Fall or Spring semester.  You must indicate the calendar year that the semester will be.  You can choose to import faculty data (office location, email, phone, office hours, but not classes) from one of the previous two semesters.  When the Office Administrator clicks Add, the new semester is added. |
| Hornet CardGen  <Department>  <Semester>  Not Done Faculty List  >> Dr. Buckley <<  >> Dr. Radimsky <<  >> more… <<  Done Faculty List  >> Dr. Gordon <<  >> Dr. Lee <<  >> more… <<  [ Add a Faculty Member ]  Course Section List  >> CSC 1-01 <<  >> CSC 10-02<<  >> CSC 10-01 <<  >> CSC 10-02 <<  >> CSC 10-03 <<  >> more… <<  [ Add a Course Section ]  [ Import Registrar File ]  [ Generate Card Report ] | *Semester Detail View*  The Detail view of a semester shows the Faculty list split into two sections – those that have been marked Done, and those that are Not Done. This is to allow an Office Administrator or Office Clerk to easily see if all Office Hour details have been collected. Clicking on a faculty member from either list will take them to the Faculty member Detail View for that Semester. An Office Administrator will see the option to add a new faculty member.  The Course Section list shows all of the course sections that are a part of this semester. Clicking one of the course sections will take them to the Course Detail And Edit Page.  Office Administrators will see an option to Import the Registrar CSV File.  Both Office Administrators and Office Clerks will see options to Add a Course Section and to Generate the FIC report. |
| Hornet CardGen  <Department>  <Semester>  <Faculty>  Salutation: { Dr., Mr., Mrs., Ms. }  First Name:  Last Name:  Office:  Contact:  Office Hours:  ⌧ Done/Complete?  Courses Taught:  >> CSC 10-01 <<  >> CSC 15-01 <<  [ Submit ] | *Faculty Member Add/Detail/Edit View*  After clicking a Faculty Member from the Semester Detail view, or choosing to add a new one, you are taken to the detail and edit view for that faculty member (or a blank form for a new one).  Here, you can edit basic information for the faculty member (including name and salutation). Other big details include office location, their contact (email or office phone), and their office hours.  There is also a checkbox to mark this faculty member’s information as done. This will be used to dictate where they appear in the Semester Detail View.  For convenience, a list of course/sections taught by the faculty member (if any) are listed at the bottom. Clicking one of these classes will take you to the Course Detail and Edit View for that course. |
| Hornet CardGen  <Department>  <Semester>  <Course-Section>  Course Code:  Days:  Time:  Room:  Faculty: { list department faculty }  [ Submit ] | *Course Add/Detail/Edit View*  After clicking a Course-Section from the Semester list, or from a faculty member, or choosing to add a new one, you are taken to a form similar to this.  Here you can view or edit information related to the course section, including who is teaching that course. |
| Hornet CardGen  <Department>  <Semester>  Registrar Import  Choose File… [ button to upload ]  NOTE: Importing this file from the Registrar assumes that the Registrar’s information in this file is 100% up-to-date. This will wipe all current course-section data for this semester.  [ Submit ] | *Import Registrar File Screen*  After choosing to Import a File from the Registrar from the Semester Detail view, you will see this screen. |
| Hornet CardGen  Department List  >> Computer Science <<  >> Math <<  [ Add a Department ] | *Department List*  After choosing View Departments from the Department Home Page, you will be shown a list of the departments.  Clicking one of them takes you to the detail/edit view with details loaded.  Choosing add takes you to a blank version. |
| Hornet CardGen  <Department>  Department name:  [ Submit ]  User List  >> Admin Person <<  >> Clerk Person << | *Department Add/Detail/Edit View*  After choosing a Department from the Department List, you will be taken to this view.  You can update the department name, and see a filtered list of related users. |
| Hornet CardGen  User List  >> ECS Admin <<  >> ECS Clerk <<  >> Math Admin <<  >> Math Clerk <<  [ Add a User ] | *User List*  After choosing View Users from the Department Home Page, you will be shown a list of the users in the system.  Clicking one of them takes you to the detail/edit view with details loaded.  Choosing add takes you to a blank version. |
| Hornet CardGen  <User>  Username:  Email:  Department: { department list }  Access Level: { office admin, office clerk }  [ Send Password Reset Email ]  [ Submit ] | *User Add/Detail View*  After choosing a User from the User List, you will be taken to this view.  If viewing the details of a user, you can send them a password reset email.  If you are adding a new user, you can pick their username email, and department. Upon creating a new user, a password reset email will be sent to them |

## 5.2 Software interfaces

The only other pieces of software that Hornet CardGen will interface with is the Registrar’s system. An Office Administrator to log in to the Registrar system and download a CSV file with course details for their department. This CSV file is what will be uploaded and parsed by Hornet CardGen to populate a semester.

## 5.3 Hardware interfaces

No Hardware is necessarily required to interact with the Hornet CardGen system. Hornet CardGen will generate a report file that the Office Clerk or Office Admin can print on their printer of choice. That report is formatted to be printed on Avery 5689 Cardstock, although it can be printed on any paper and cut up without the perforated edges.

## 5.4 Communication interfaces

In the case that a password has been forgotten, that user will need to contact an Office Administrator (any department) to have their password reset. The process of resetting a password includes Hornet CardGen creating a password reset link and emailing that link to the user that forgot their password. Clicking that link allows for a one-time password reset of their account.

# 6. Quality attributes

## 6.1 Usability

Hornet CardGen shall allow an Office Administrator or Office Clerk to generate all of their department’s FICs in a single interaction.

Hornet CardGen shall allow an Office Administrator or Office Clerk to generate selected FICs in a single interaction.

Hornet CardGen shall allow an Office Administrator to change the faculty information.

Hornet CardGen shall allow an Office clerk to change a faculty member’s office hours.

## 6.2 Performance

The system shall display changes made to faculty information within 5 seconds after the user submits the change request.

## 6.3 Security

Users shall be required to log on to Hornet CardGen to perform all operations.

Office Administrators shall be permitted to change the faculty information of their own department.

The Office Clerk shall only be permitted to change faculty office hours of their own department.

Office Administrators and Office Clerks shall be limited to viewing information of their own department.

## 6.4 Safety

There are no safety requirements.

## 6.5 Availability

Hornet CardGen shall be available during standard department office hours between 9:00 A.M. and 5:00 P.M. local time, excluding scheduled maintenance windows.

## 6.6 Robustness

Hornet CardGen shall handle improperly formatted import files by providing an error message, which requests for the import file to adhere to the registrar’s standard format.

# 7. Internationalization and localization requirements

There are no internationalization or localization requirements for this project.

While it is not required for use that the output report for FICs be printed on Avery 5689 cardstock, it should be noted that the output report will be formatted as such. This will allow for the report to be printed and separated easily.

# 8. Other requirements

This area of the document is reserved for any requirements not captured in other sections. There are no other requirements at this time.

# Appendix A: Glossary

A list of terms used throughout the document that we defined.

|  |  |
| --- | --- |
| **Word/Acronym** | **Definition/Meaning** |
| Avery 5689 Cardstock | A type of printable card templates |
| CSUS | California State University, Sacramento |
| CSV | Comma Separated Value file |
| ECS | Engineering and Computer Science College of CSUS |
| FIC(s) | Faculty Information Cards |
| HCG | Hornet CardGen abbreviation |
| Hornet CardGen | Name of the software |
| HTML | HyperText Markup Language |
| MySQL | Database engine used by CSUS |
| PC | Personal Computer |
| Registrar | The CSUS Registrar’s Office which is responsible for courses and other registration concerns. |
| SRS | Software Requirements Specifications |
| SS | Superficial Solutions, team name abbreviation. |

# Appendix B: Prior FIC Examples

