
University of Louisville

Elaboration Spec

UofL Research & Innovation Website Renovation Vision (Small Project)

Team Added Value

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CIS 310-01

University of Louisville

Revision History

Date	Version	Description	Author
27/Jan/20	1.0	First Iteration	Ruomei Wang
10/Feb/20	2.0	Second Iteration	Sohal Patel
1/Mar/20	3.0	Inception Spec	Ruomei Wang
20/Mar/20	4.0	Third Iteration	Emily Wantland
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27/April/20	6.0	Elaboration Spec	Emily Wantland

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1. System Requirements

- Hardware components or other software resources for the software to efficiently run. On the user's end, there are nonfunctional requirements.

Functional

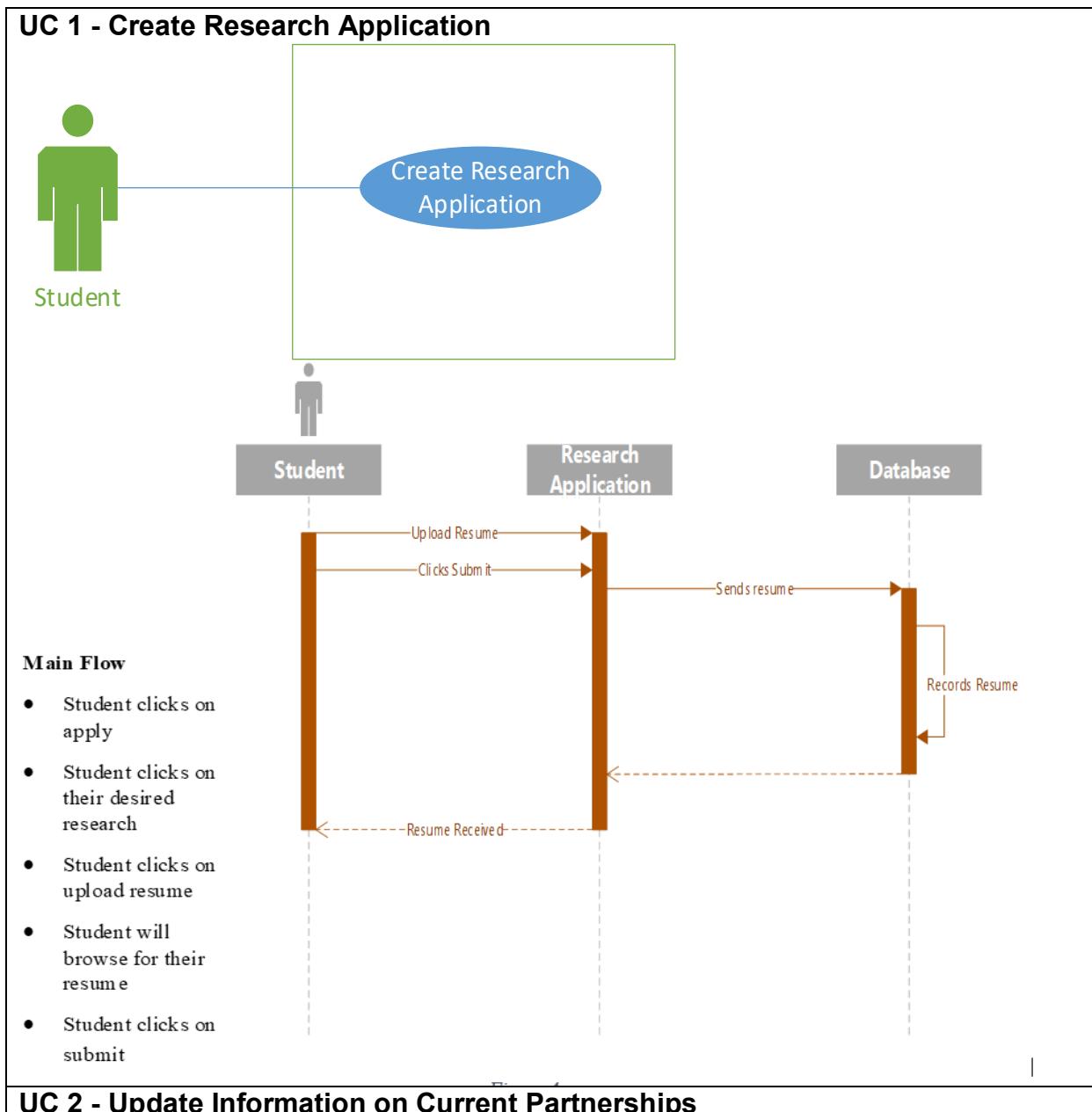
1. The system will accept grant applications
2. The system will update information on current partnerships
3. The system will allow weekly updates to newsletter
4. The system will allow users to edit the newsletter
5. The system will allow administrators to delete newsletter
6. The system will have a search bar to help users find information
7. The system will target industry partners
8. The system will allow the modification of grants
9. The system will allow the deletion of grants
10. The system will take in student applications
11. The system will allow the editing of student applications
12. The system will allow the deletion of student applications
13. The system will take in researcher funding applications
14. The system will allow the editing researcher funding applications
15. The system will allow the deletion of researcher funding applications
16. The system will take in industry proposals
17. The system will allow the editing of industry proposals
18. The system will allow the deletion of industry proposals
19. The system will allow the admin to add surveys
20. The system will allow the admin to edit surveys
21. The system will allow the admin to delete surveys
22. The system will display surveys to all users
23. The system will allow users to take the surveys
24. The system will create a copy of the computer data
25. The system will restore and rebuild the website in case of data loss
26. The system will allow researchers to create profiles to showcase their works
27. The system will allow the creation of events
28. The system will allow the modification of events
29. The system will allow the deletion of events
30. The system will allow the industry user to retrieve their proposal
31. The system will allow the admin users to log in
32. The system will allow the student users to log in
33. The system will link the donation process directly to UofL departments
34. The system will link ThinkIR website to the Research and Innovation website

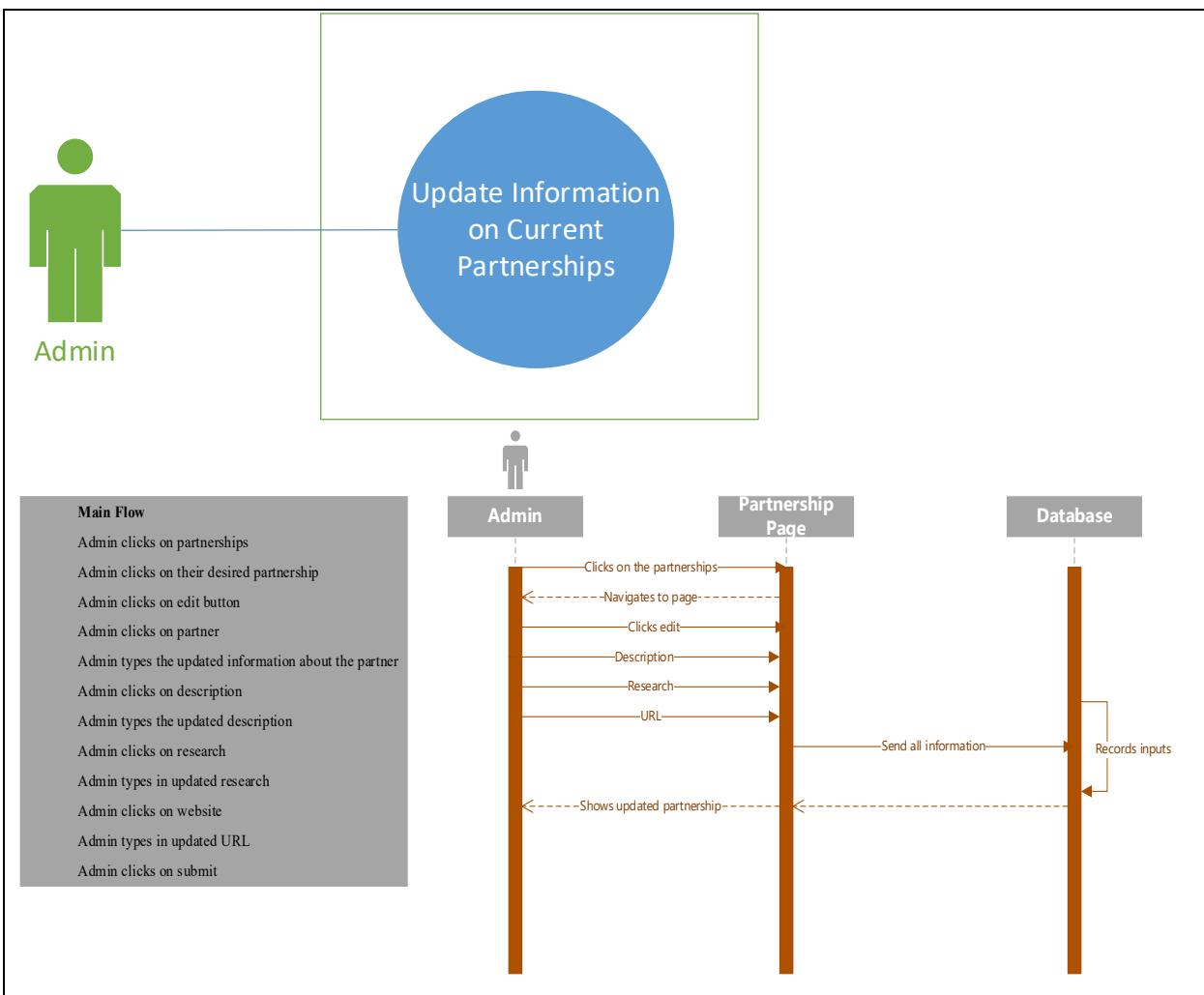
2. Use Case Diagrams

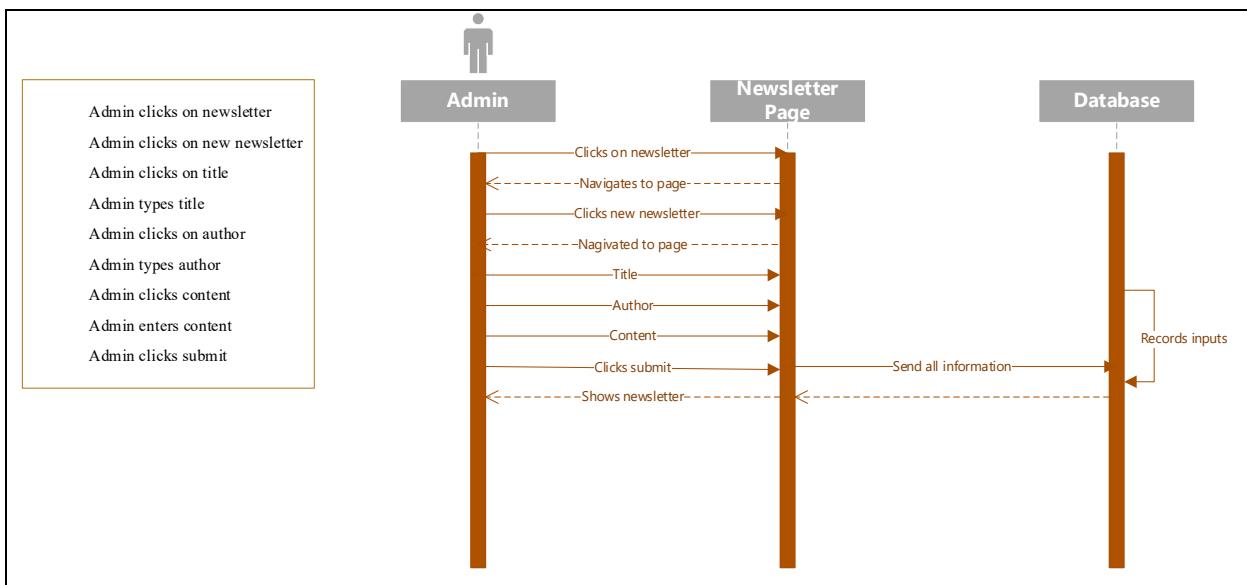
- Representations of a user's interaction with the system that shows the relationship between the user and the different use cases in which the user is involved.

3. Sequence Diagrams

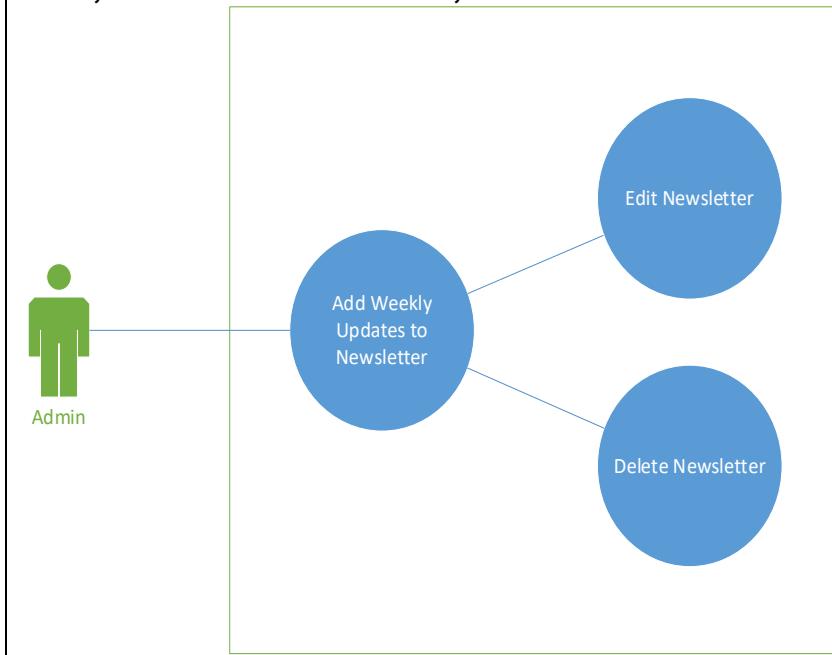
- “Happy day” scenario of each use case. The main flow is listed to the left.

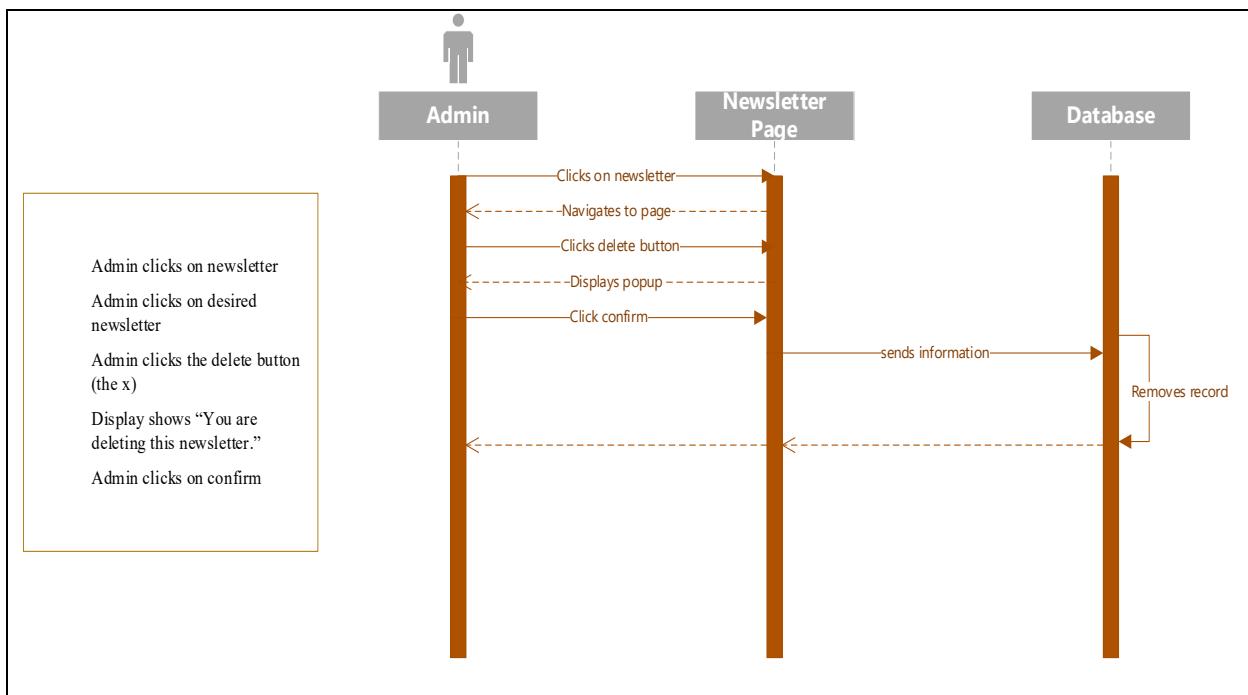




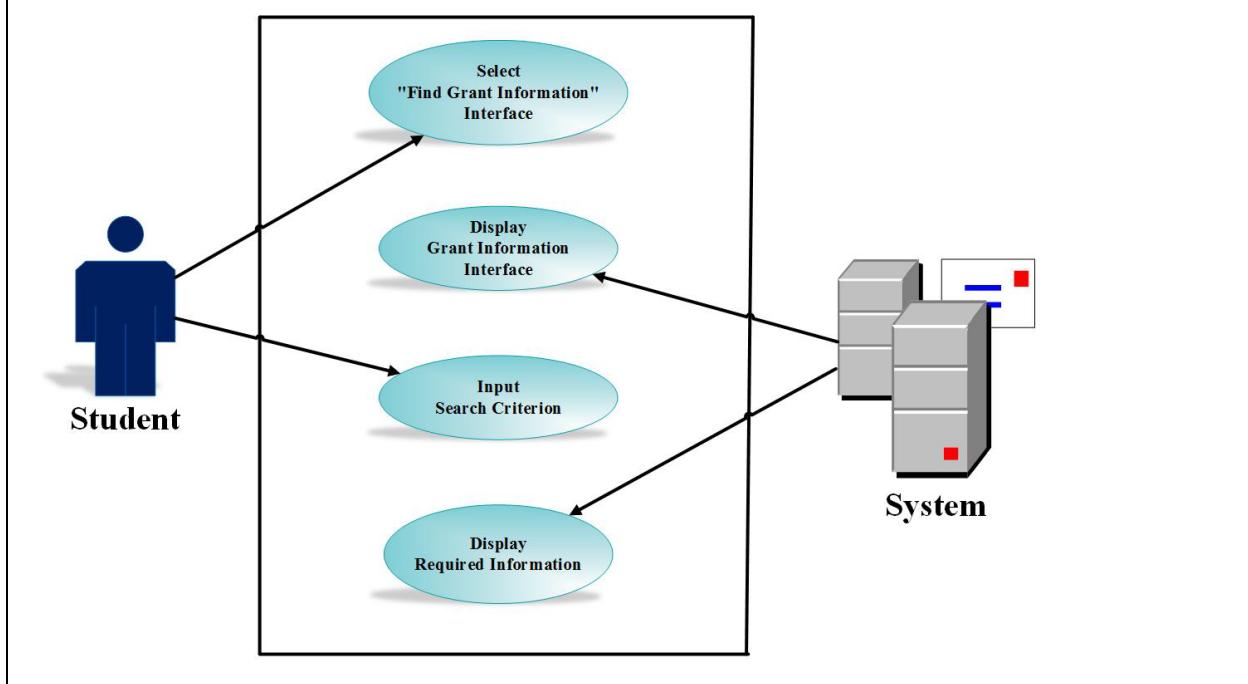


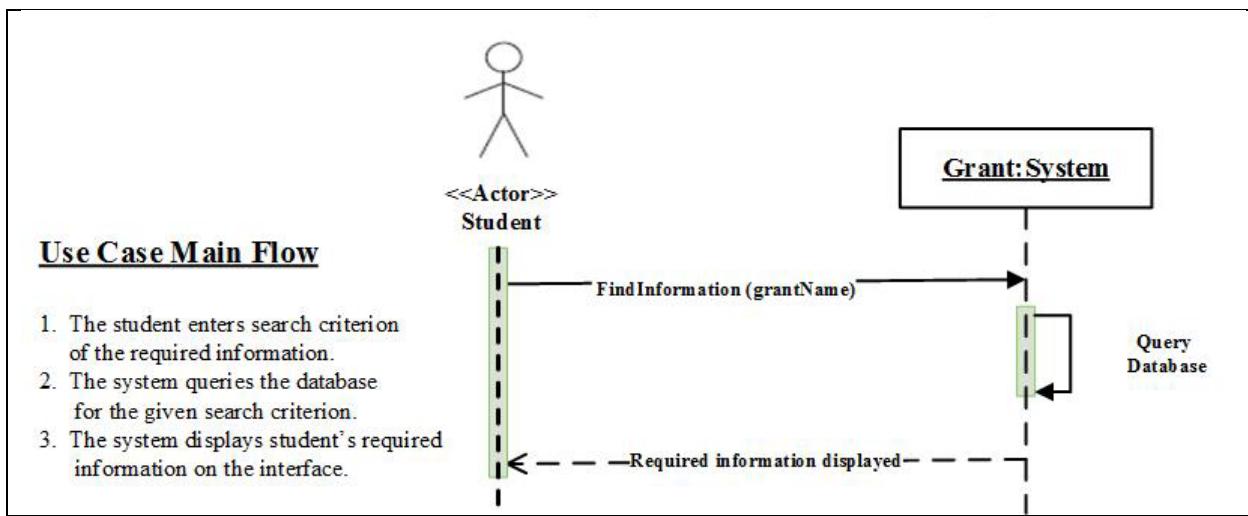
UC 4, 5 – Edit the Newsletter, Delete the Newsletter



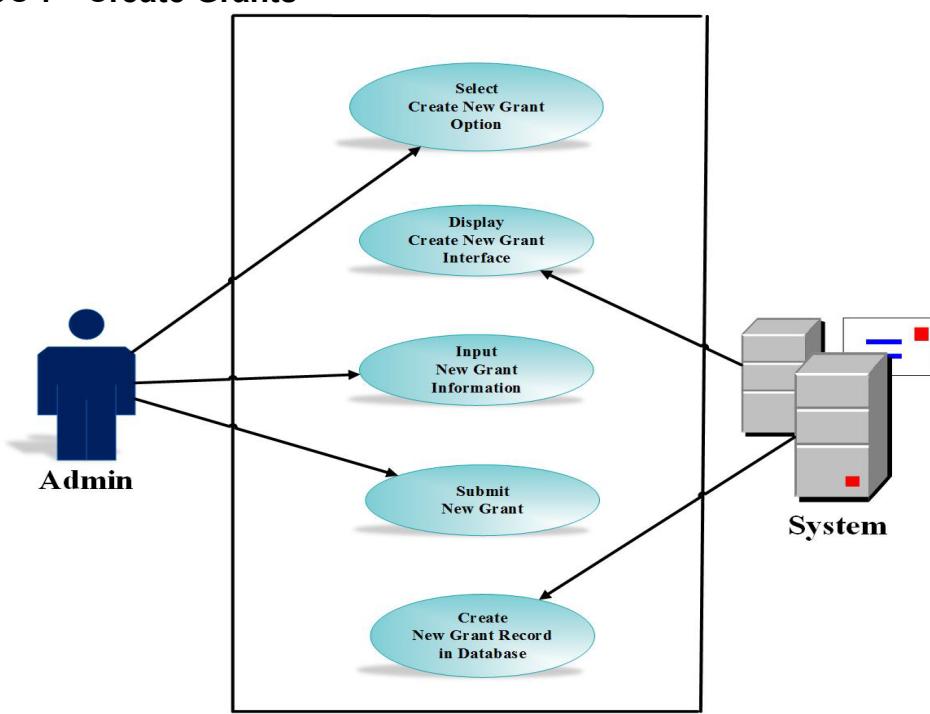


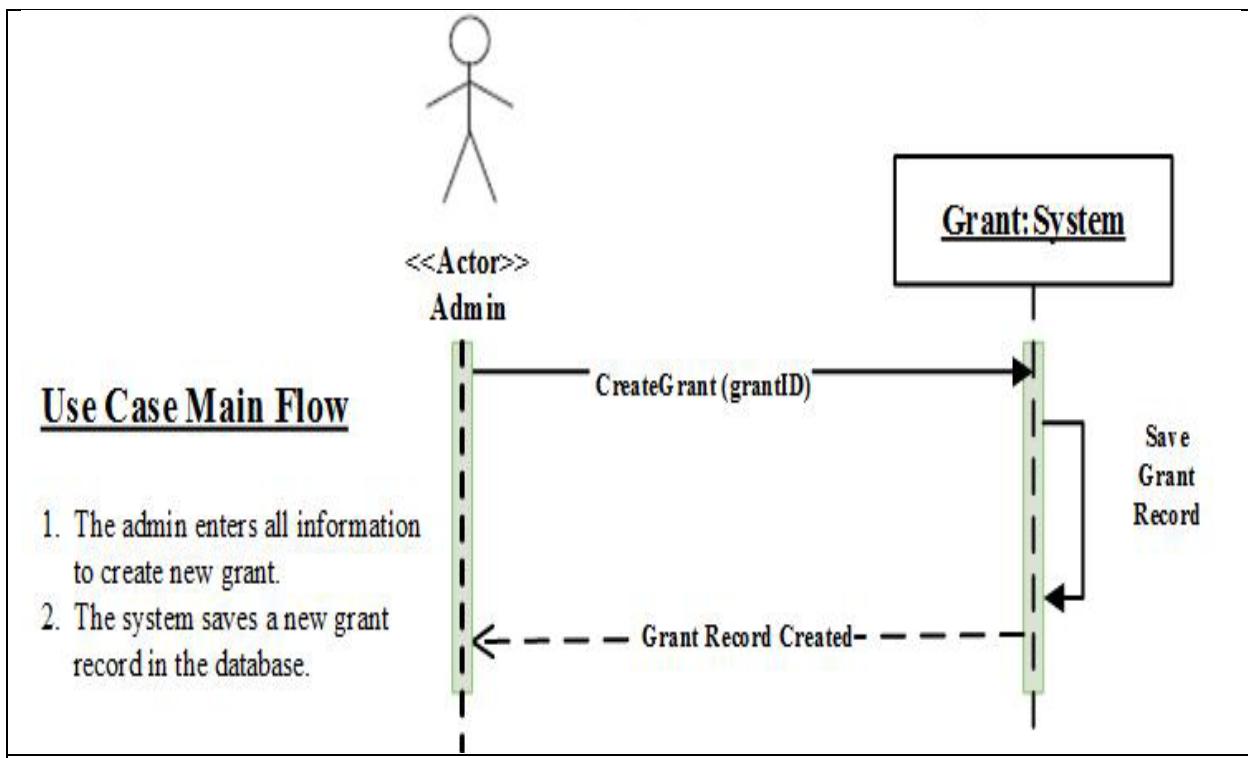
UC 6 - Find Information



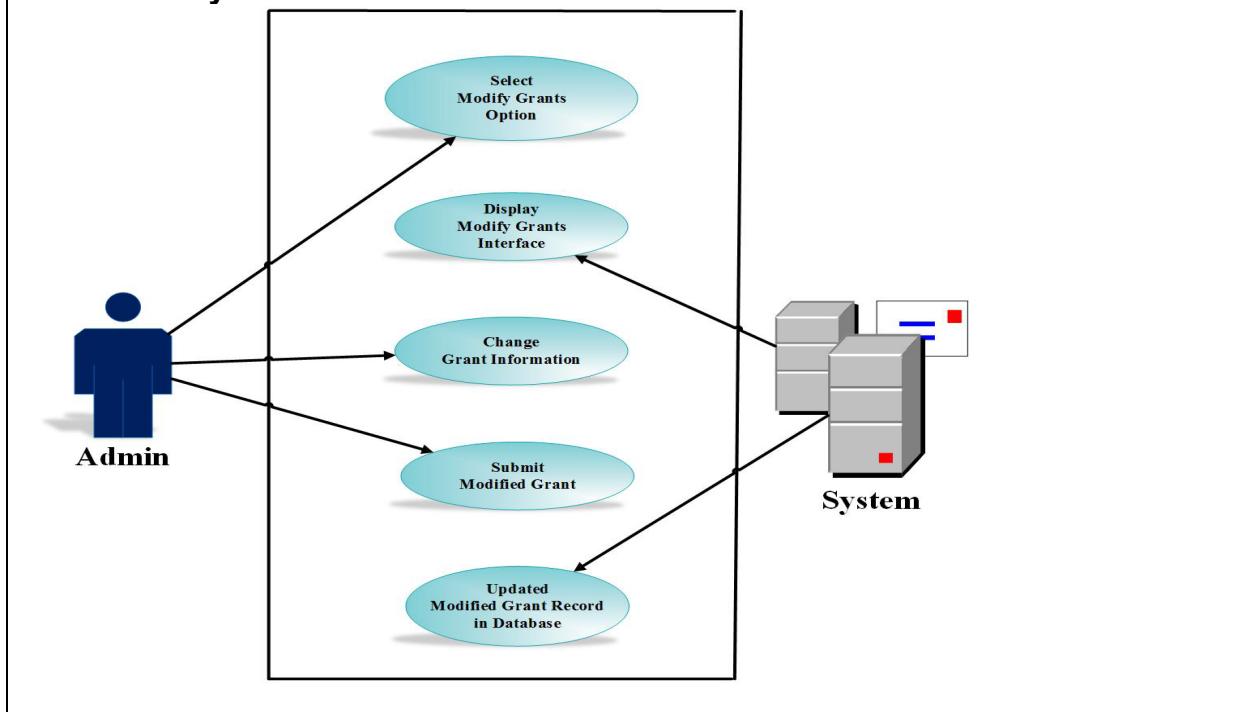


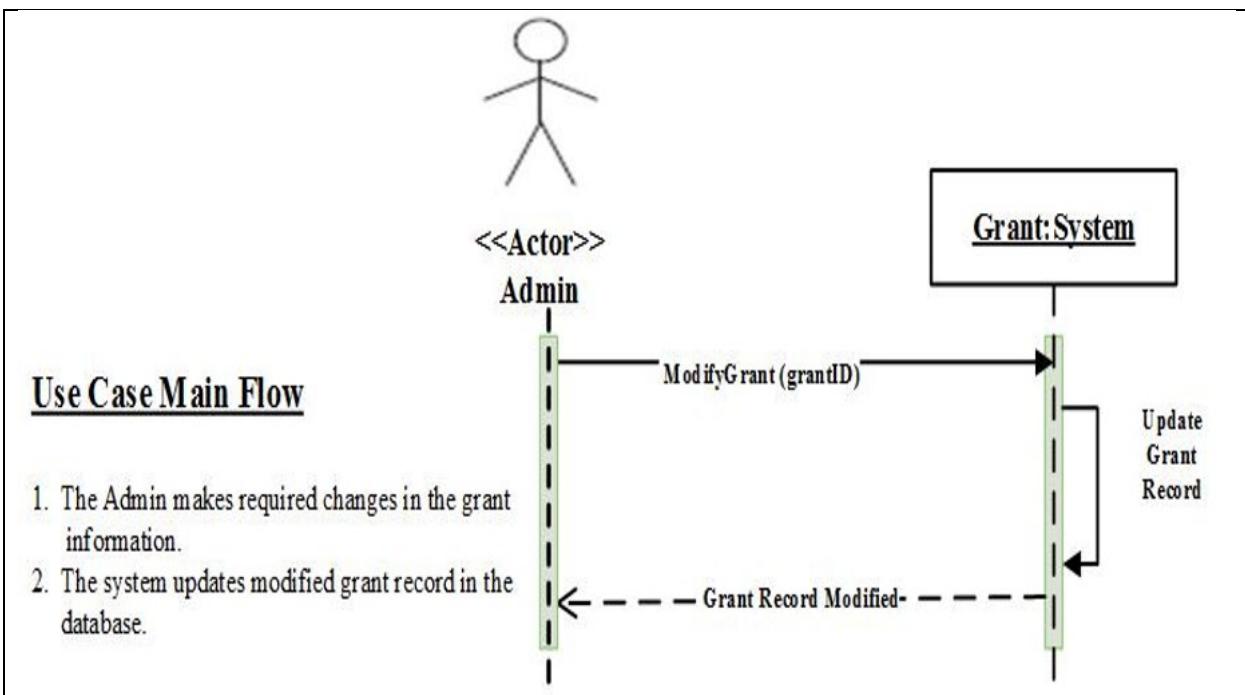
UC 7 - Create Grants



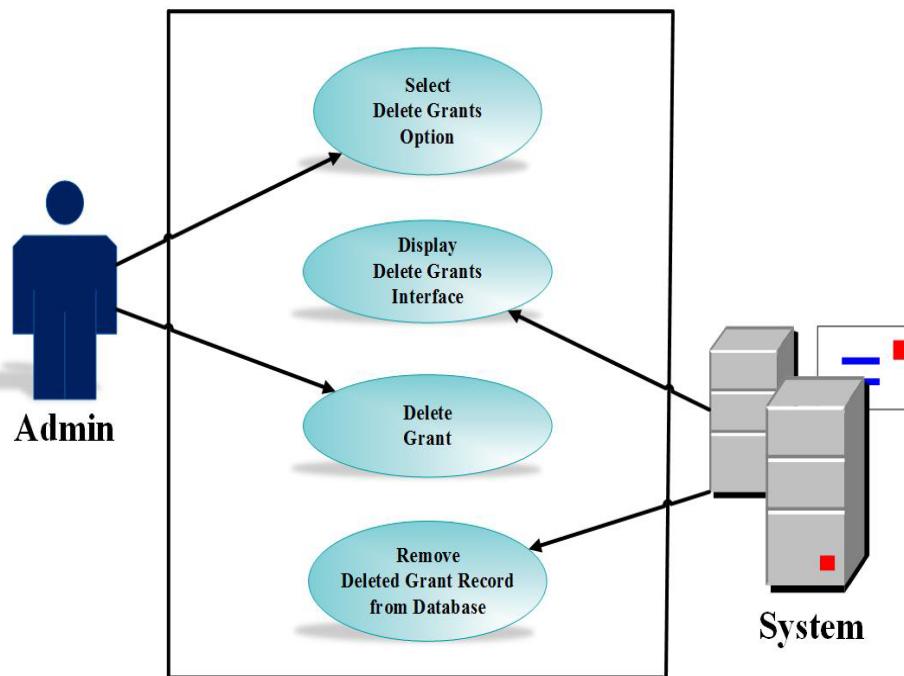


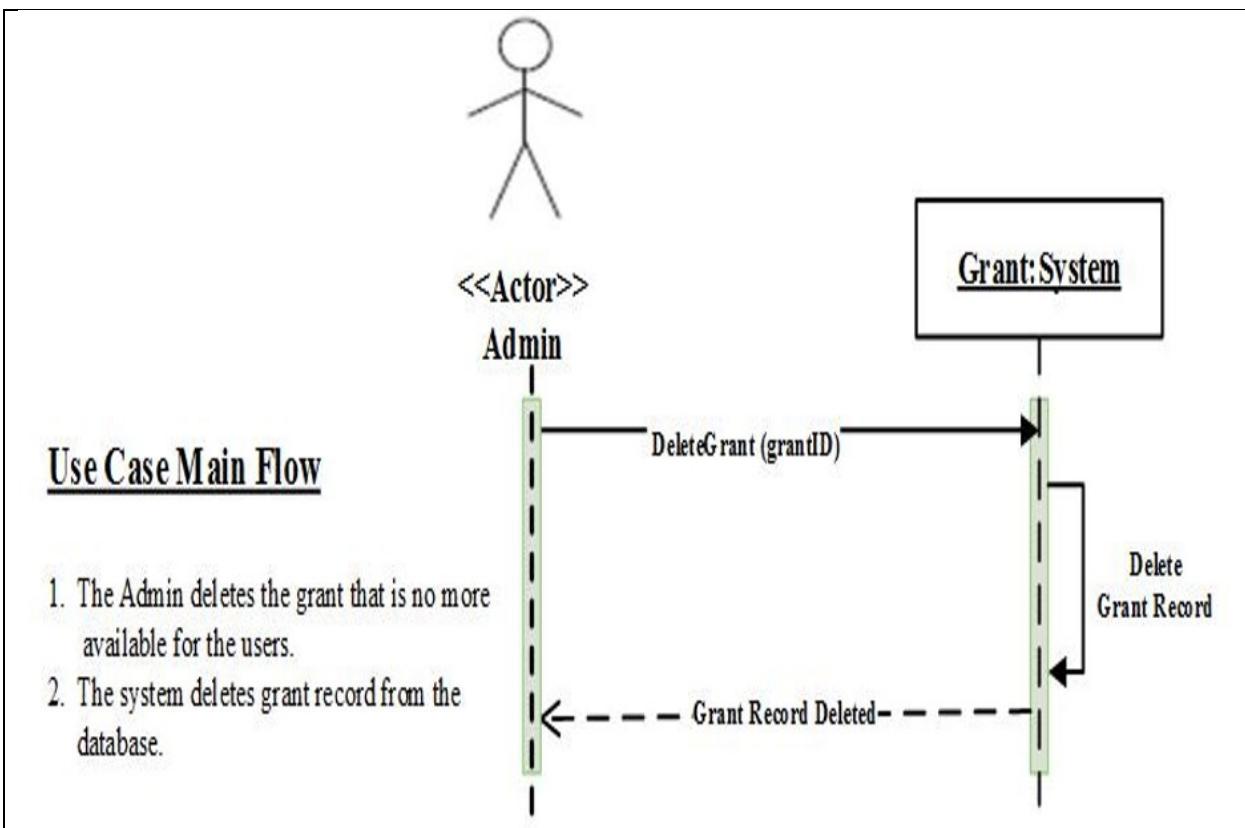
UC 8 - Modify Grants



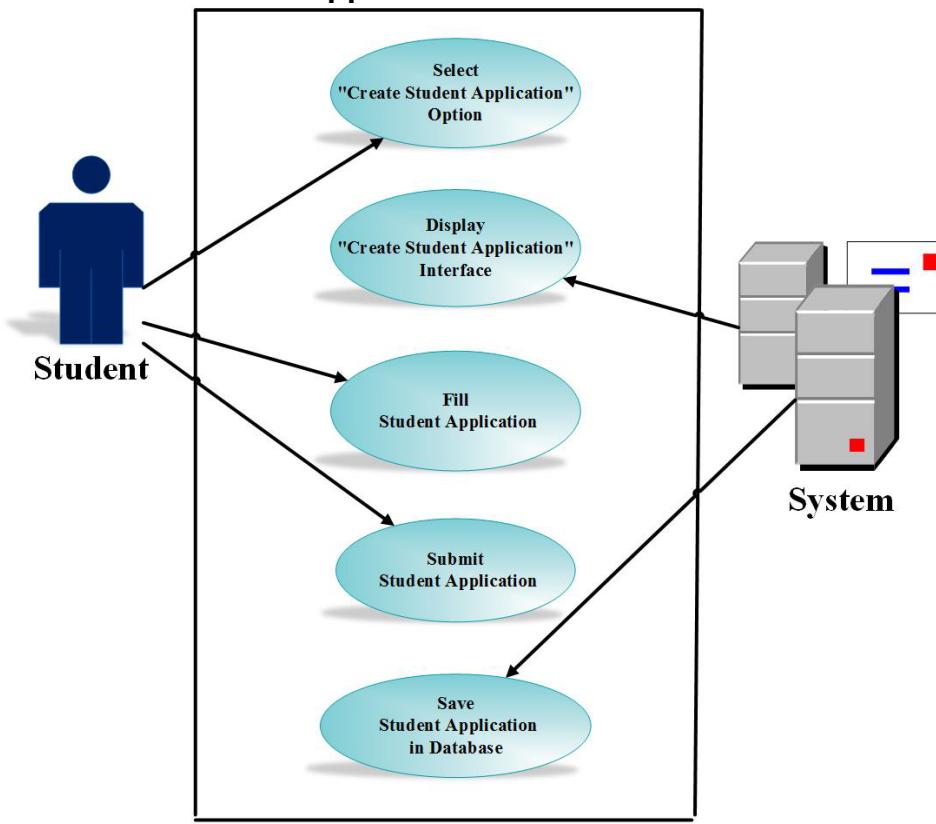


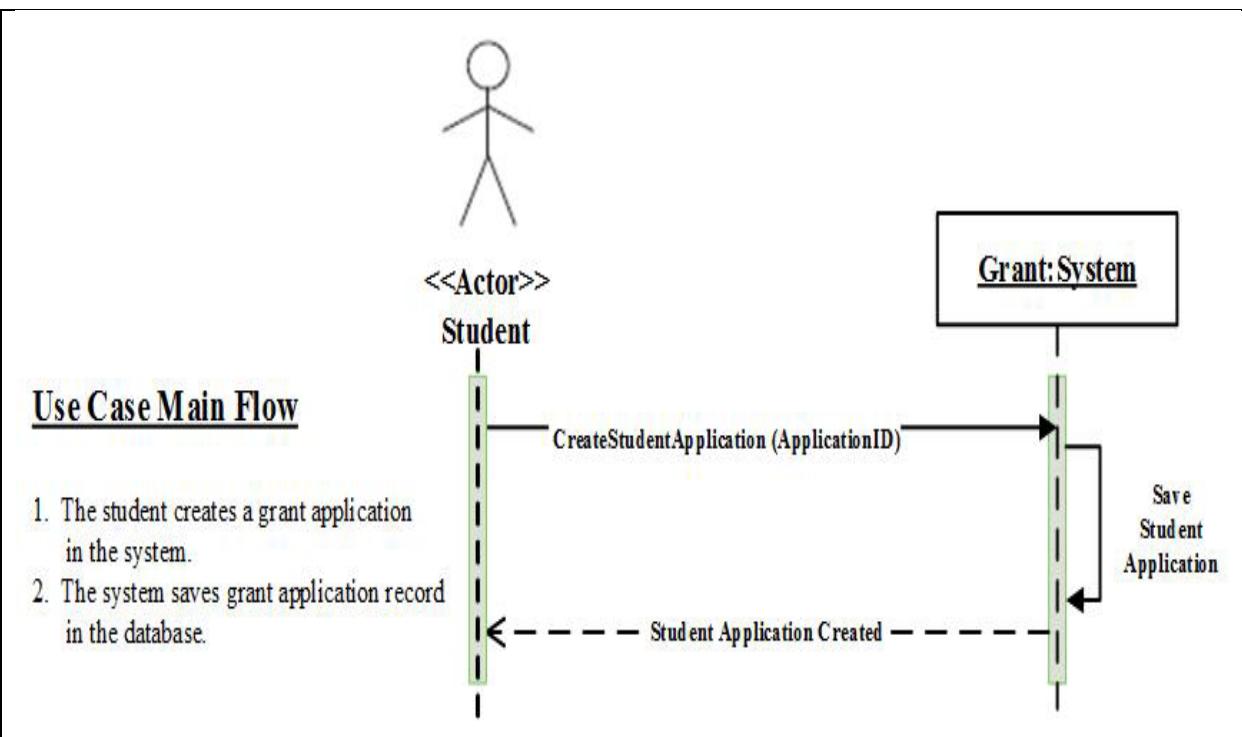
UC 9 - Delete Grants



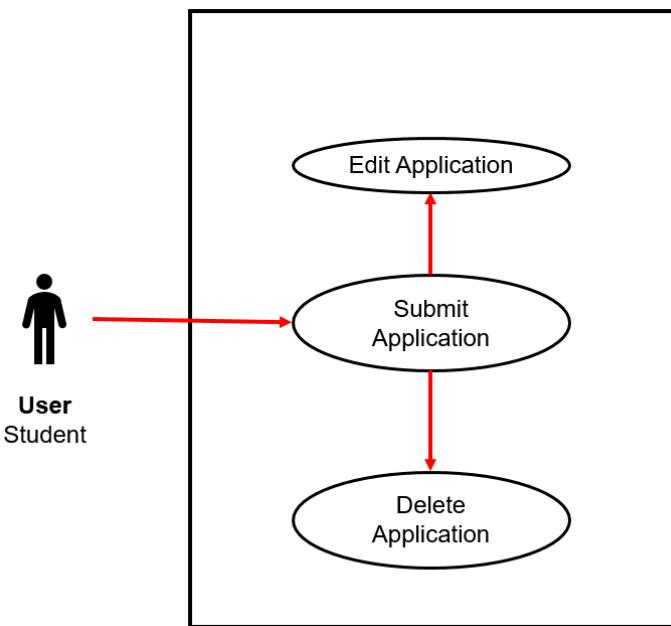


UC 10 - Create Grant Application



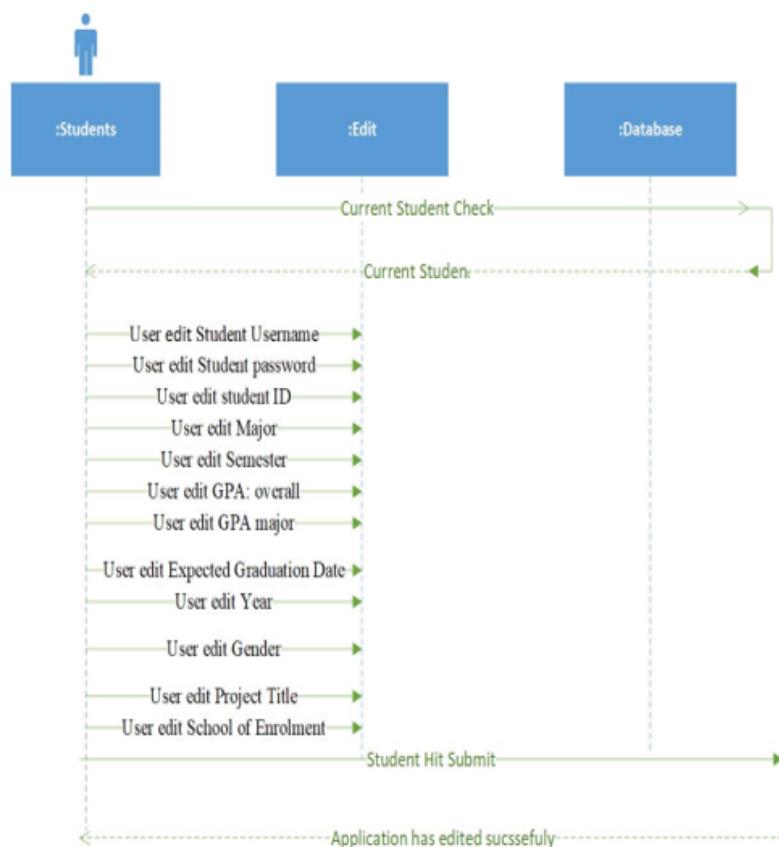


UC 11, 12 – Edit Grant Application, Delete Grant Application



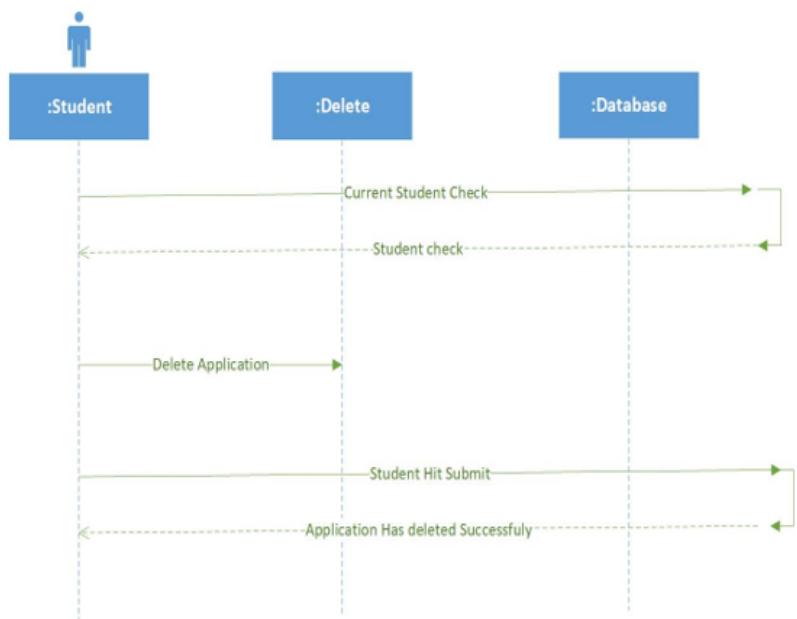
Use Case 11: Edit Student Application

1. User enter credentials to log in
2. User enter Student Username
3. User enter Student password
4. User enter student ID
5. User edit Major
6. User edit Semester Fall
7. User choose Semester Spring
8. User choose Semester summer
9. User edit GPA: overall
10. User edit GPA major
11. User edit Expected Graduation Date
12. User edit Year
13. User edit Gender
14. User edit Project Title
15. User edit School of Enrolment
16. System safe application
17. Use Case end

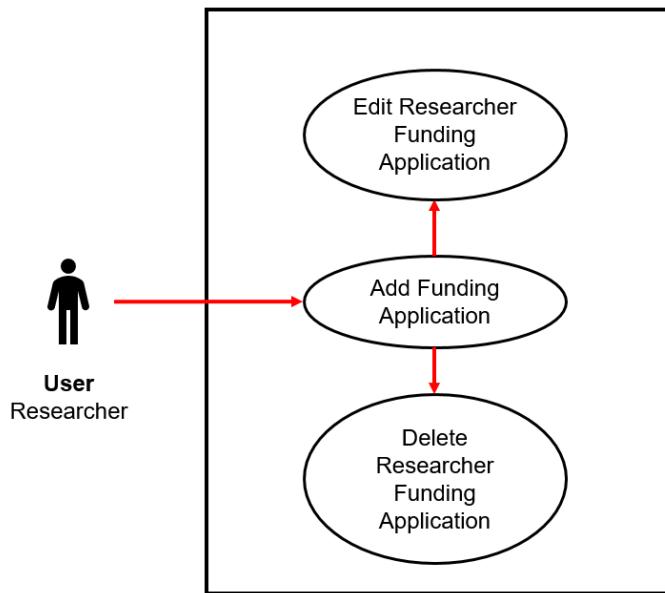


Use Case 12: Delete Student Application

1. Student selects “Delete application” tab to delete
2. Student enters Username
3. Student enter Password
4. student selects correct existing application
5. User confirms deletion
6. System saves form
7. Use Case ends

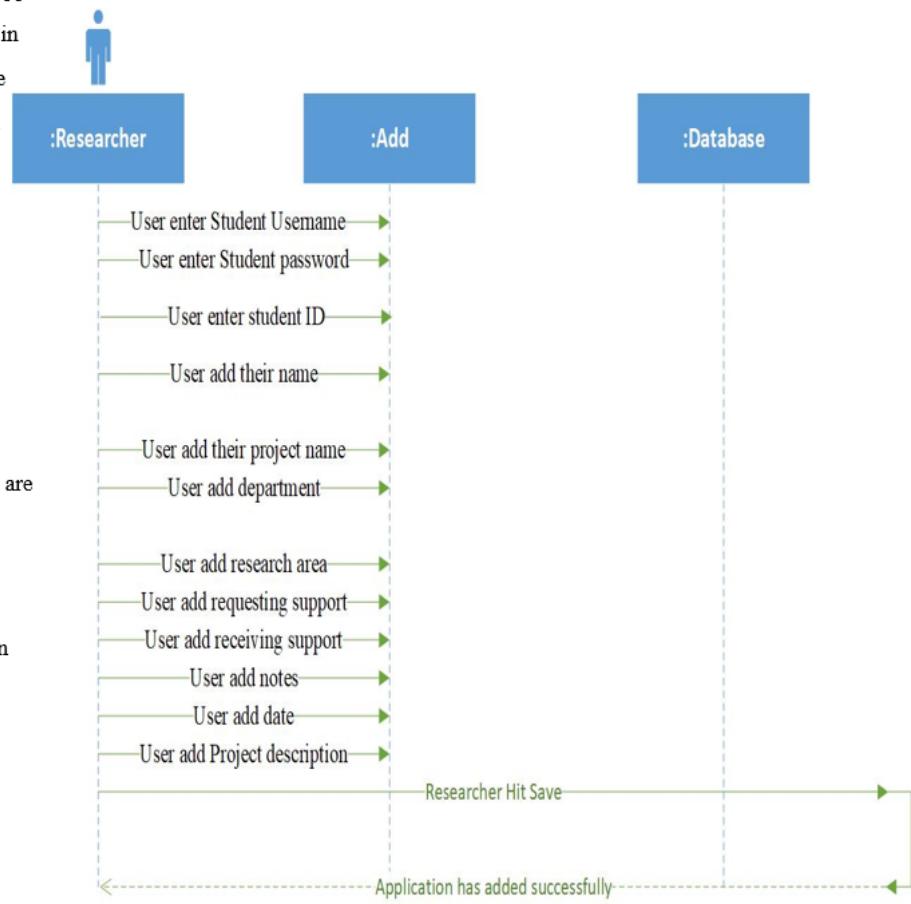


UC 13, 14, 15 – Create Funding Application, Edit Funding Application, Delete Funding Application



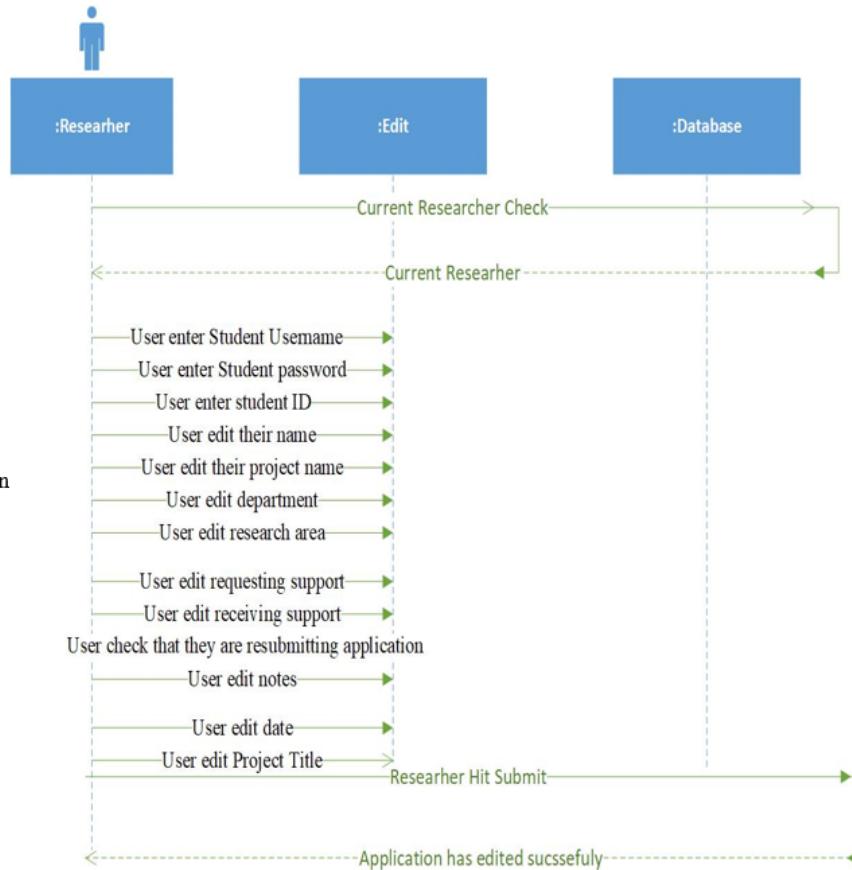
Use Case 13: Create Funding Application

1. User enter credentials to log in
2. User enter Student Username
3. User enter Student password
4. User enter student ID
5. User add their name
6. User add their project name
7. User add department
8. User add research area
9. User add requesting support
10. User add receiving support
11. User do not check that they are resubmitting application
12. User add notes
13. User add date
14. User add Project description
15. System safe application
16. Use Case end



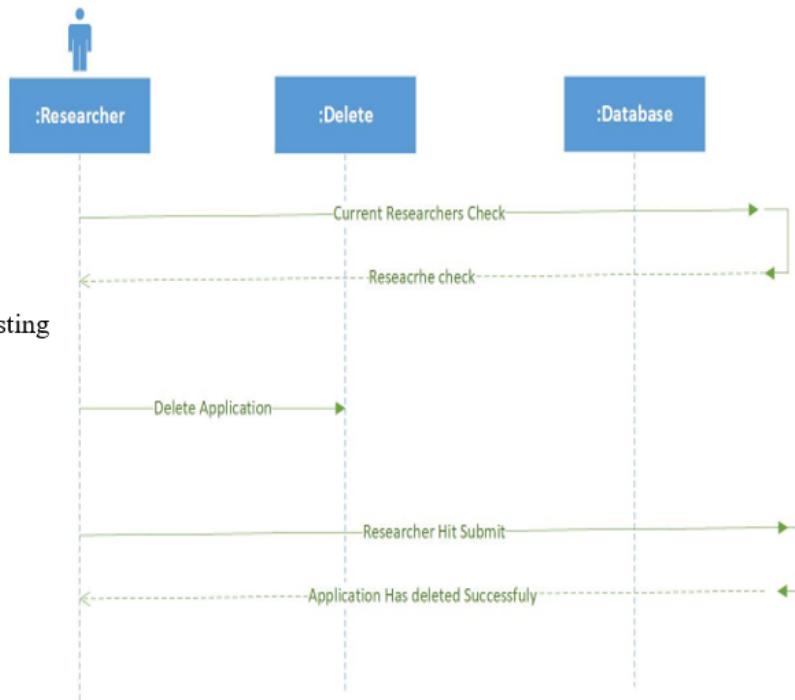
Use Case 14: Edit Funding Application

1. User enter credentials to log in
2. User enter Student Username
3. User enter Student password
4. User enter student ID
5. User edit their name
6. User edit their project name
7. User edit department
8. User edit research area
9. User edit requesting support
10. User edit receiving support
11. User check that they are resubmittin application
12. User edit notes
13. User edit date
14. User edit Project Title
15. System safe application
16. Use Case end

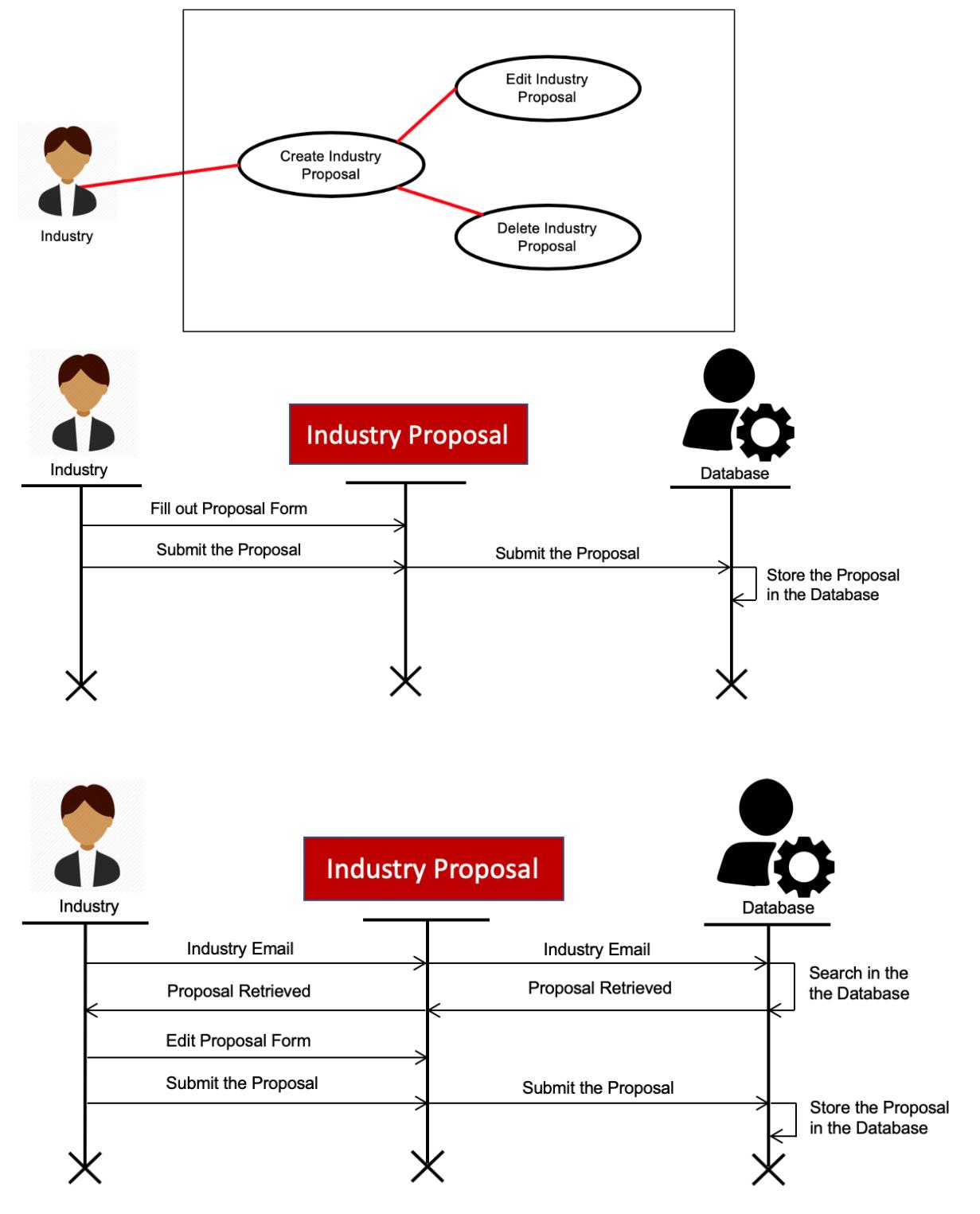


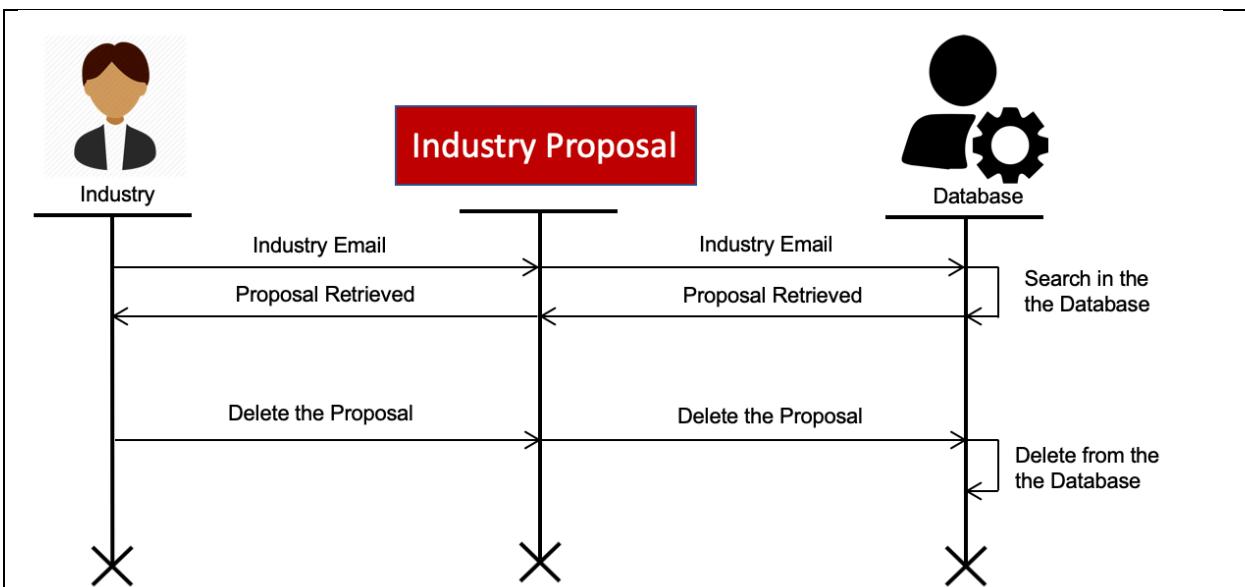
Use Case 15: Delete Funding Application

1. Researcher selects “Delete application” tab to delete
2. Researcher enters Username
3. Researcher enter Password
4. Researcher selects correct existing application
5. Researcher confirms deletion
6. System saves form
7. Use Case ends

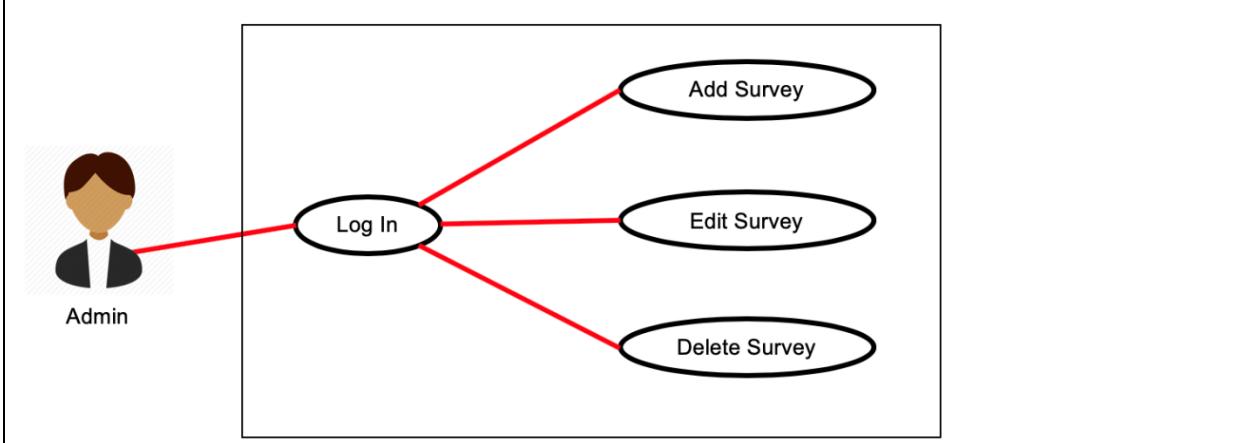


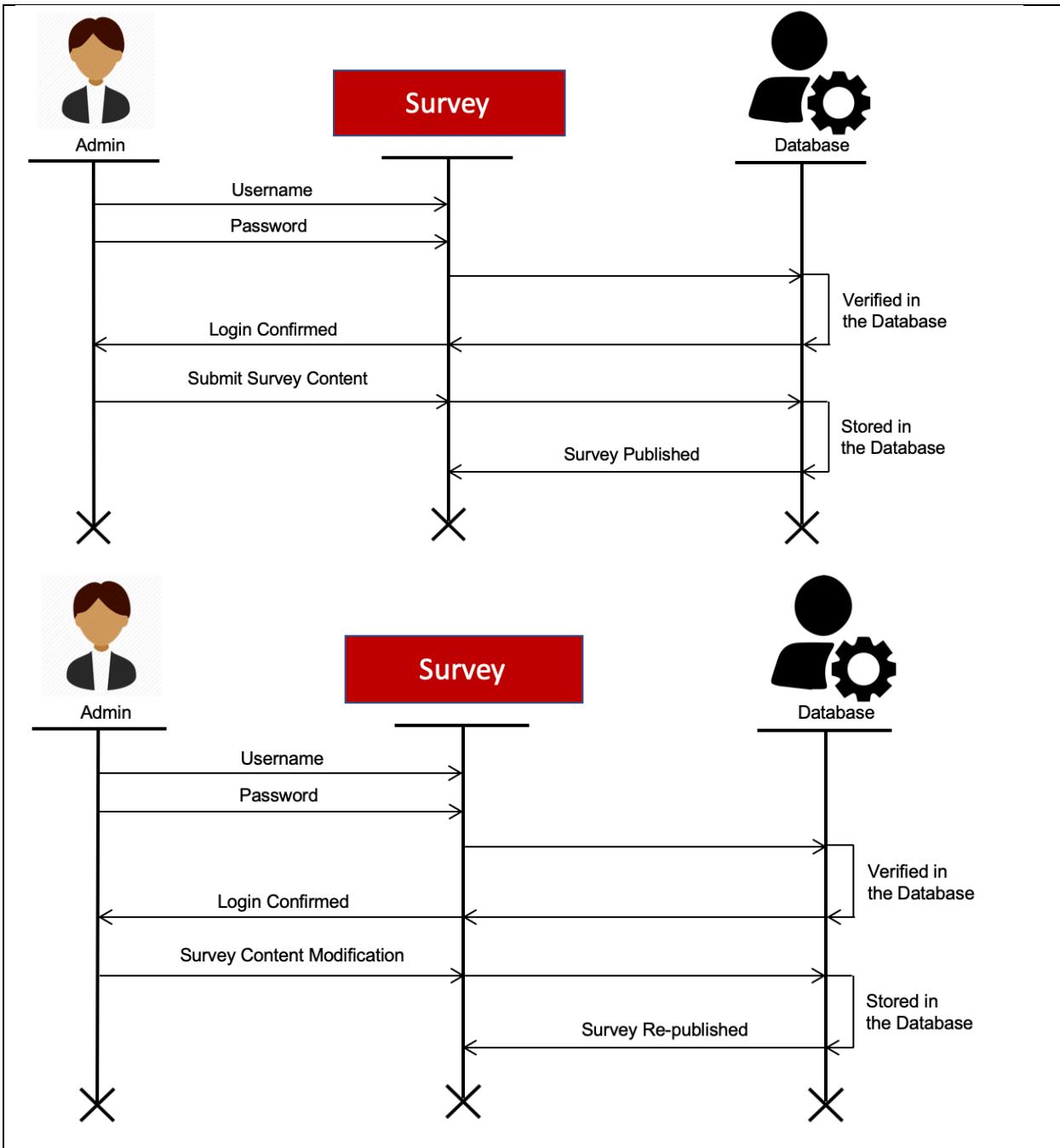
UC 16, 17, 18 – Create Industry Proposal, Edit Industry Proposal, Delete Industry Proposal

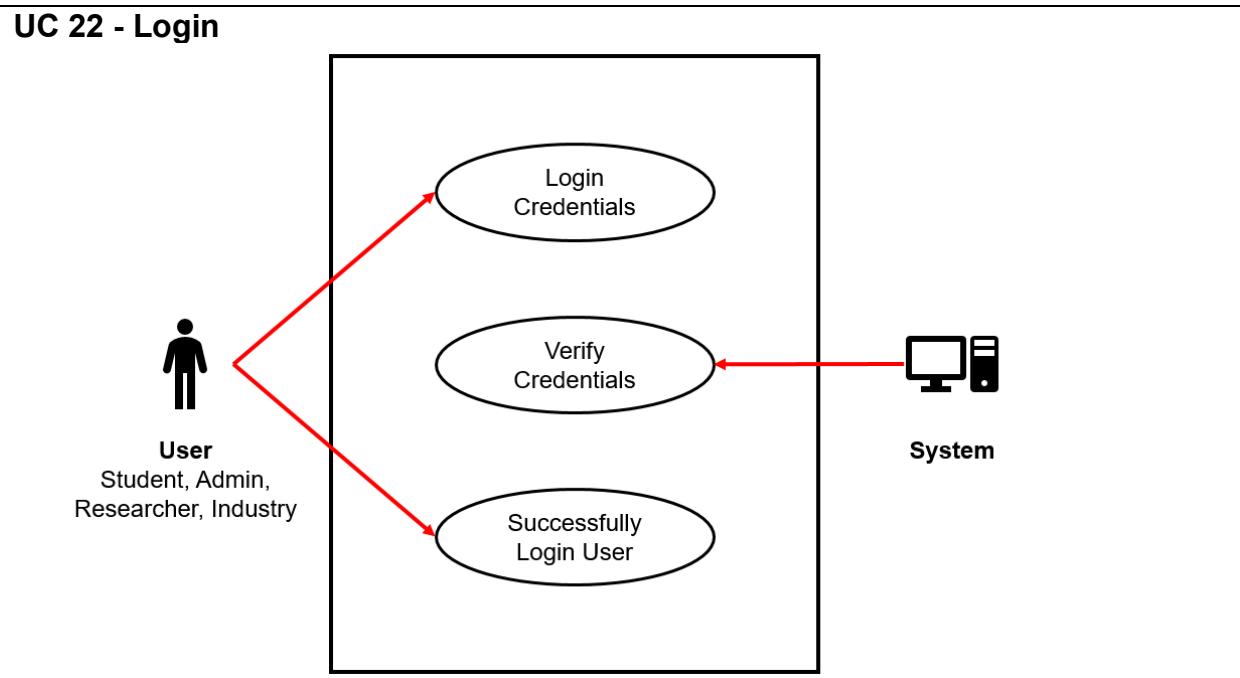
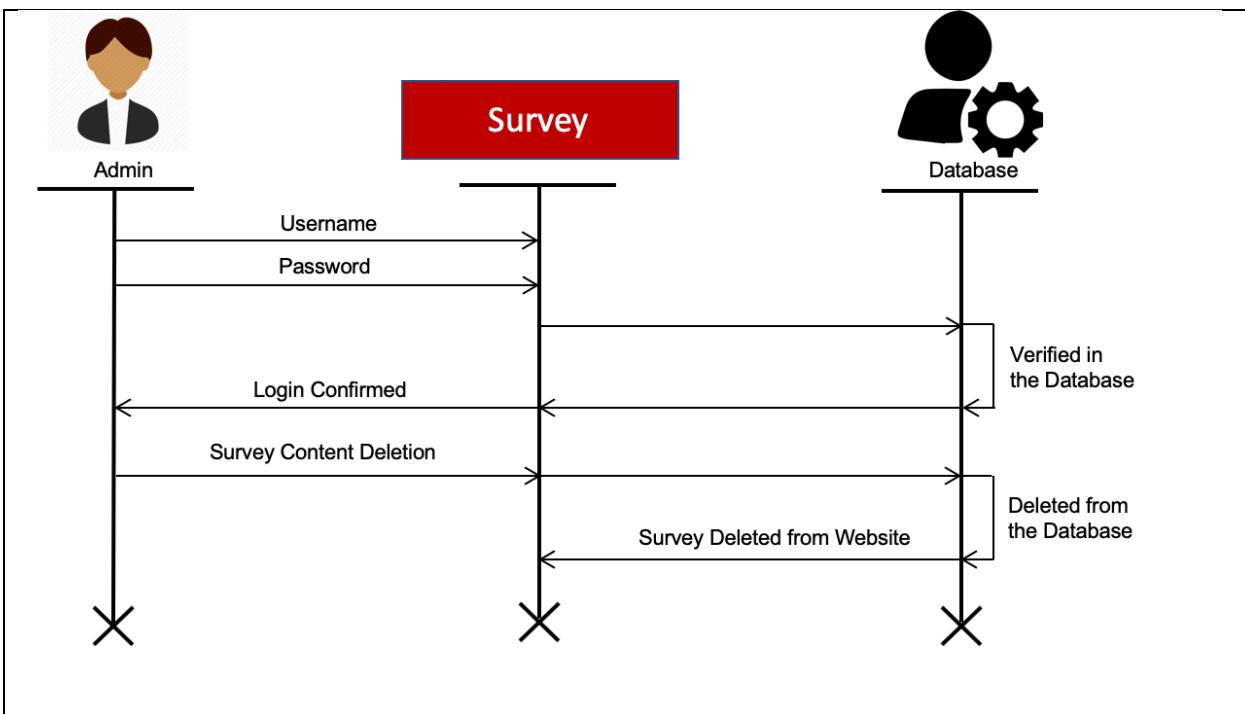


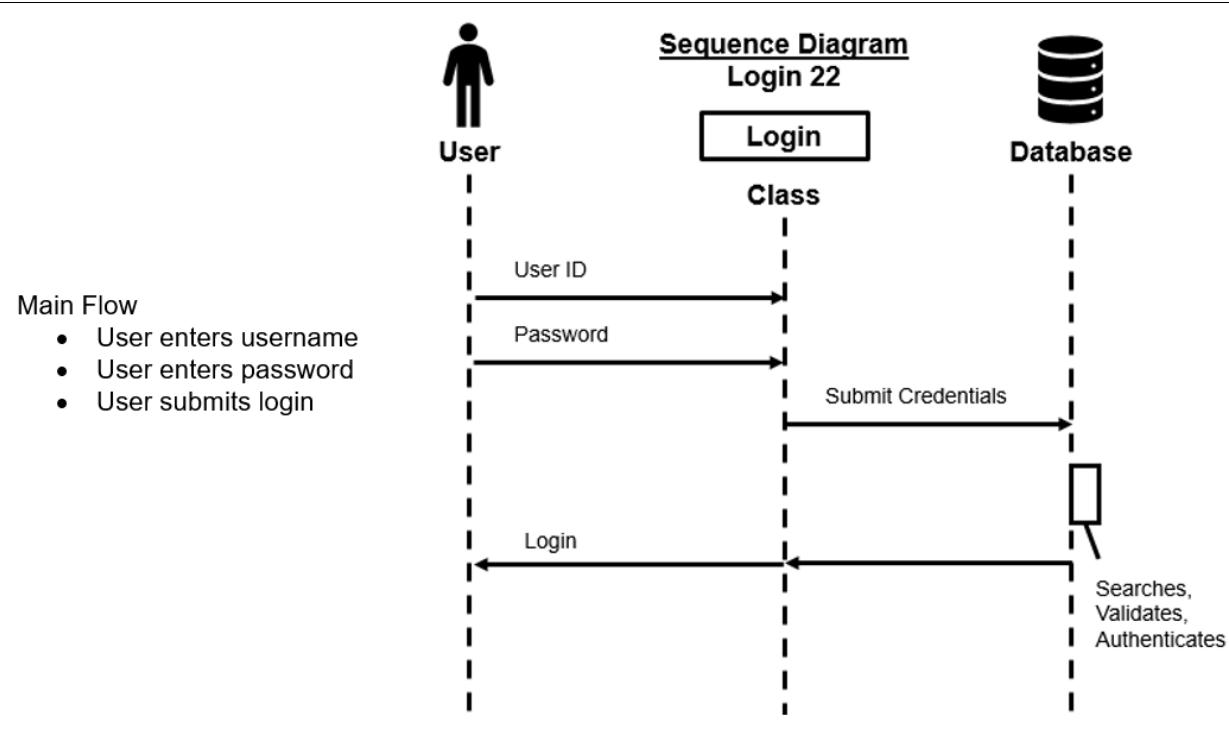


UC 19, 20, 21 – Add Surveys, Edit Surveys, Delete Surveys

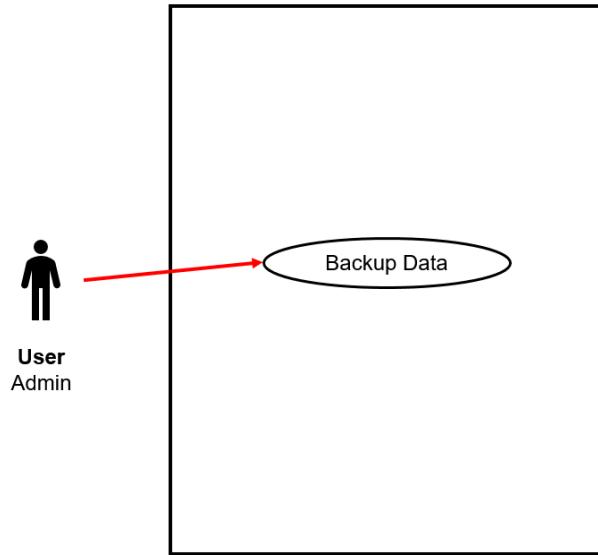


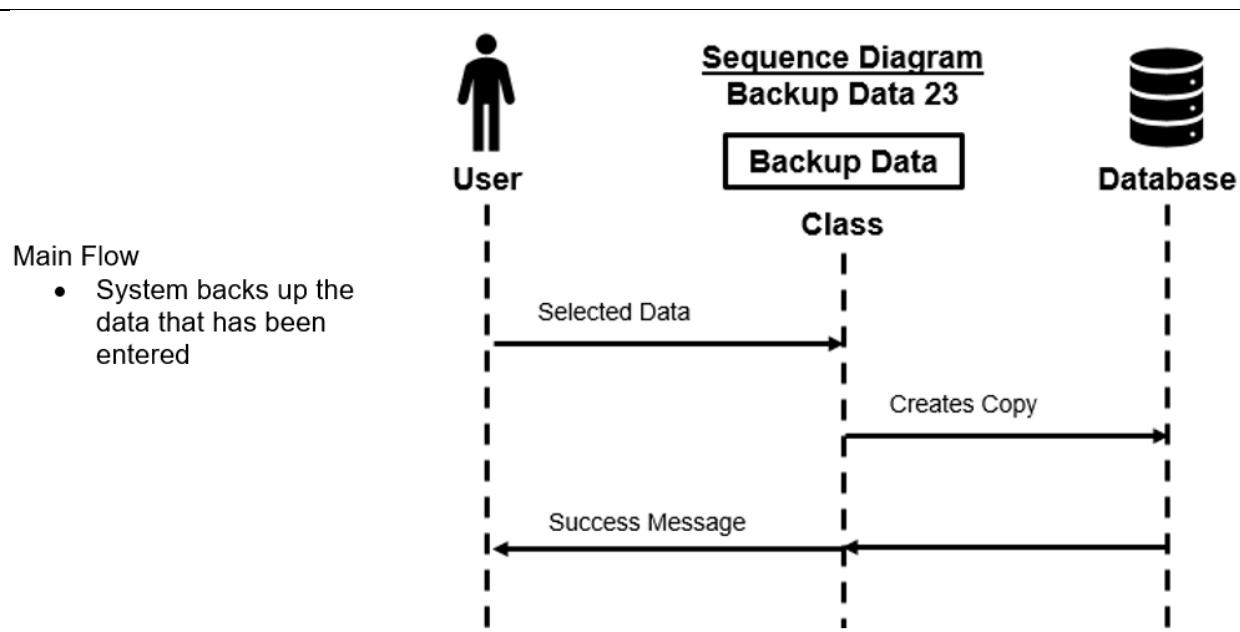




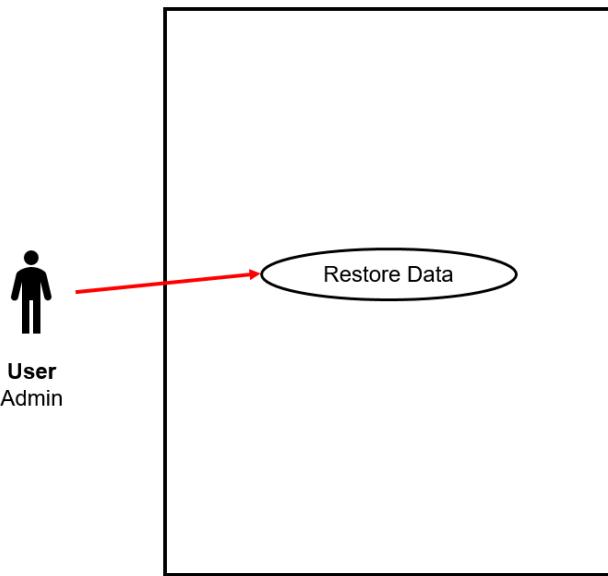


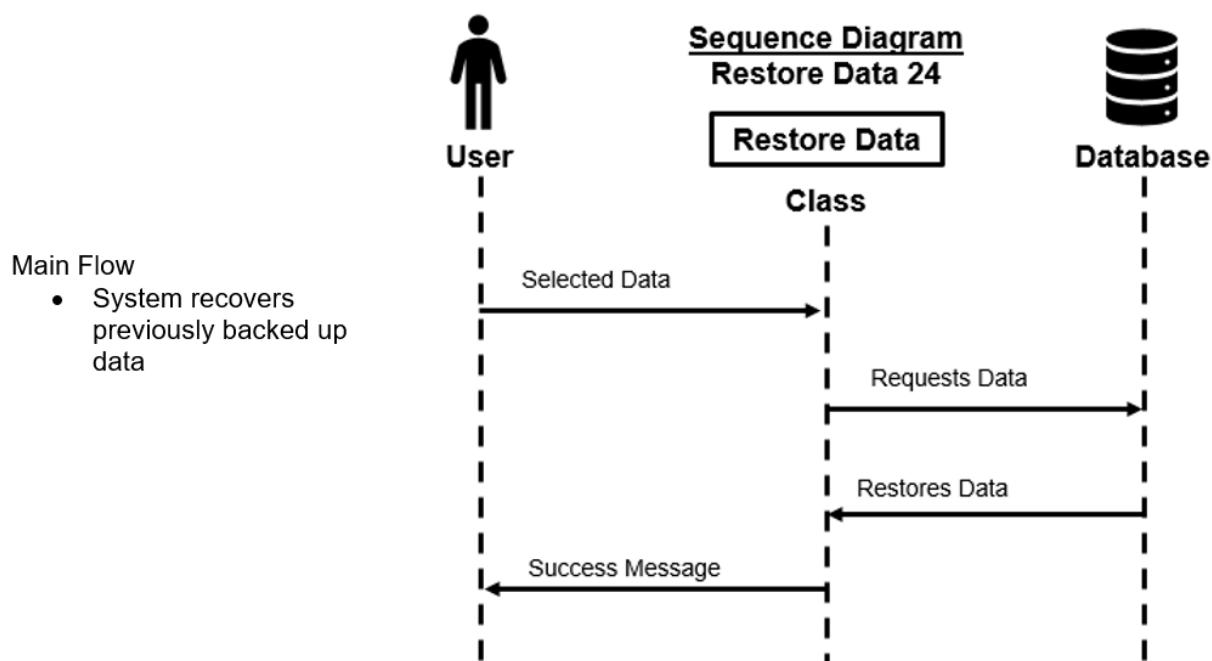
UC 23 – Backup Data



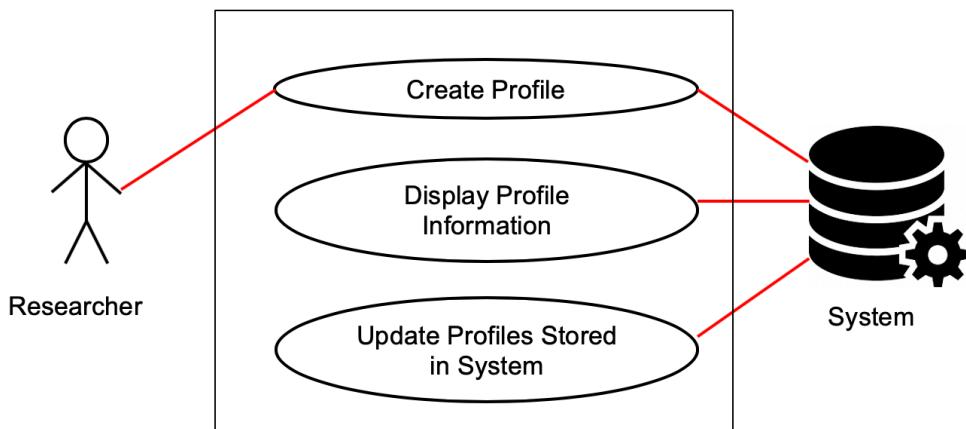


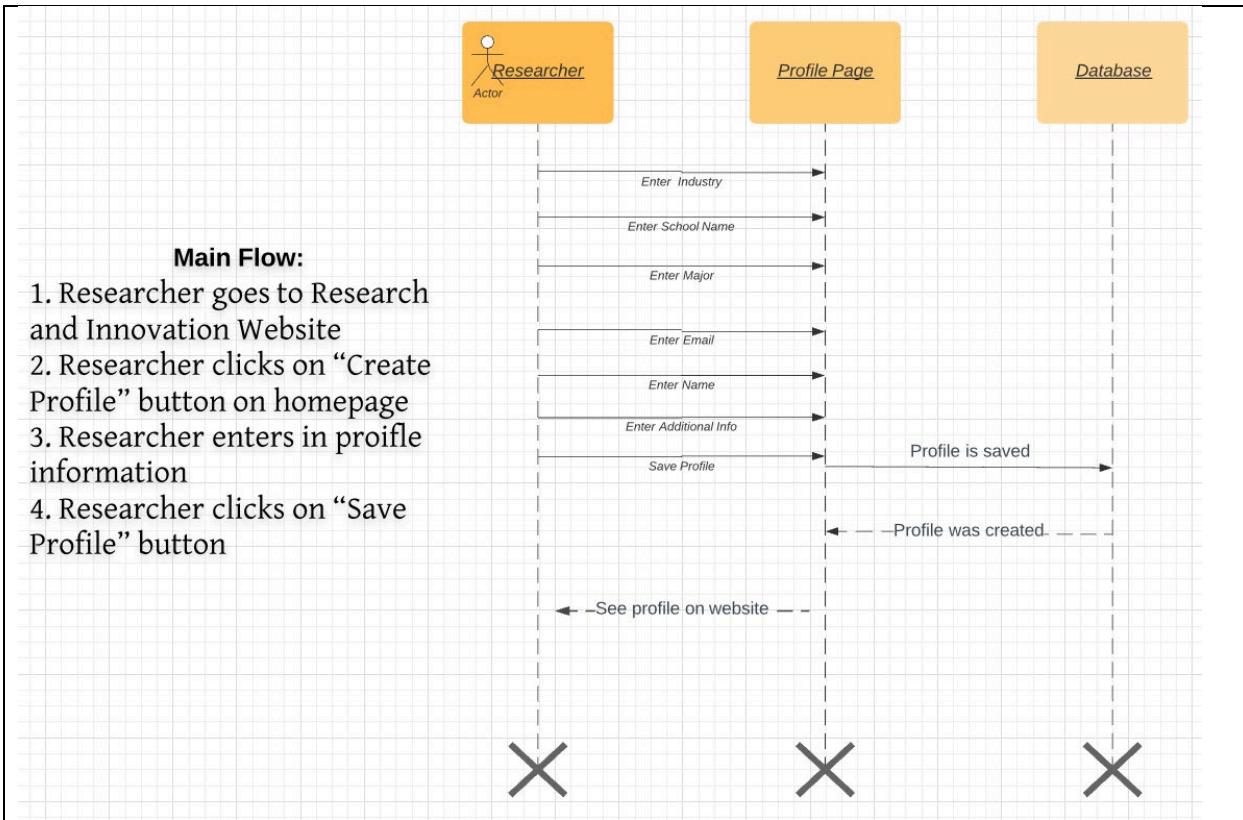
UC 24 – Restore Data



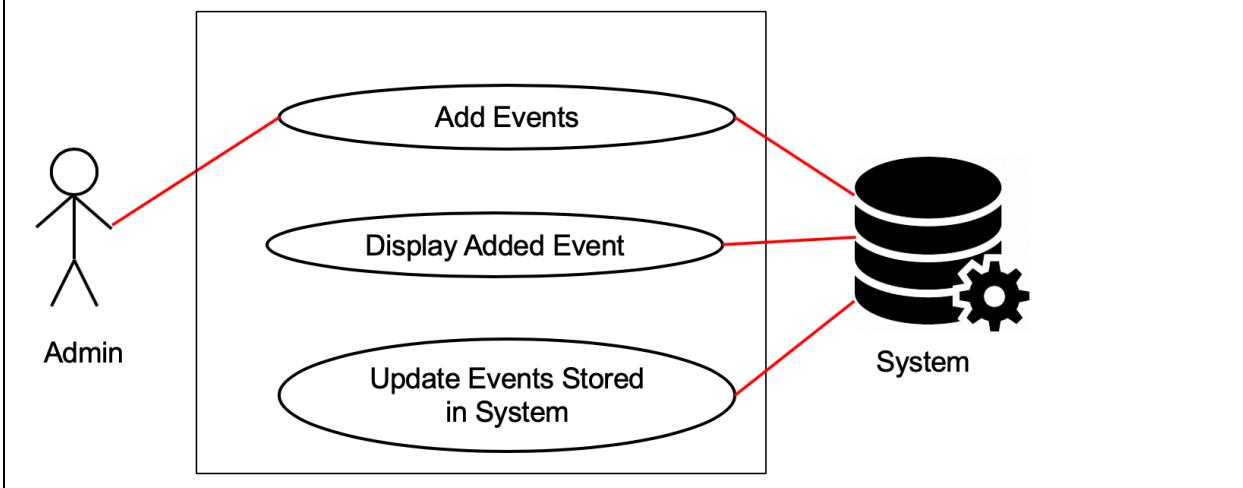


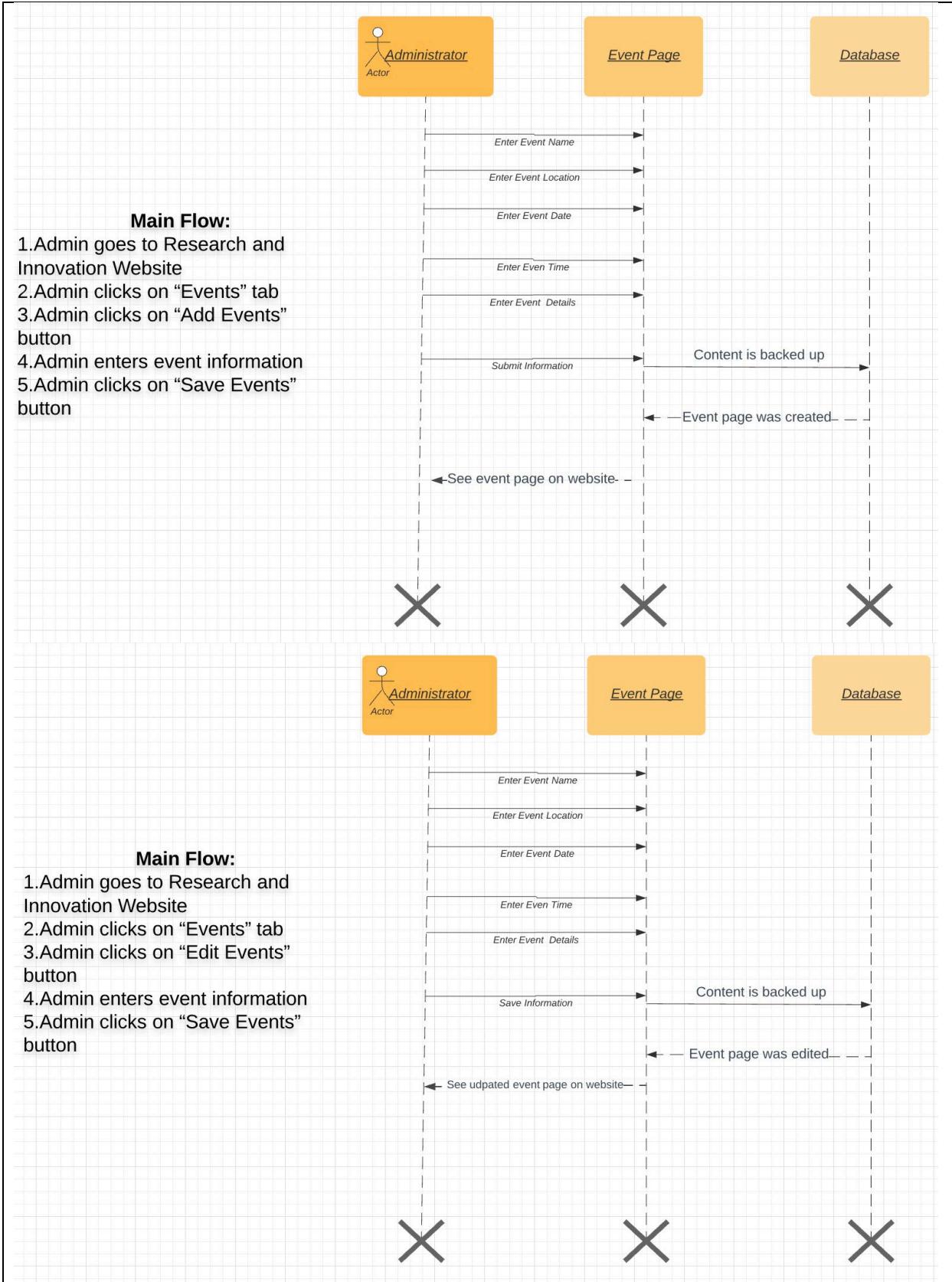
UC 25 – Create Profiles

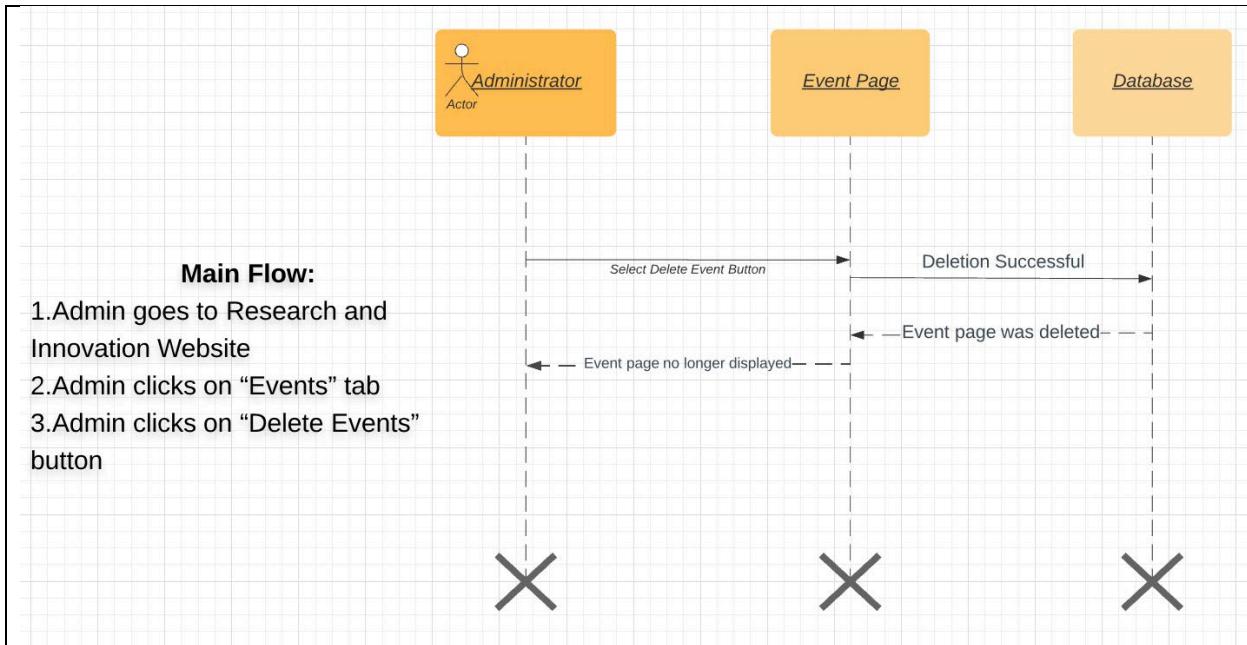




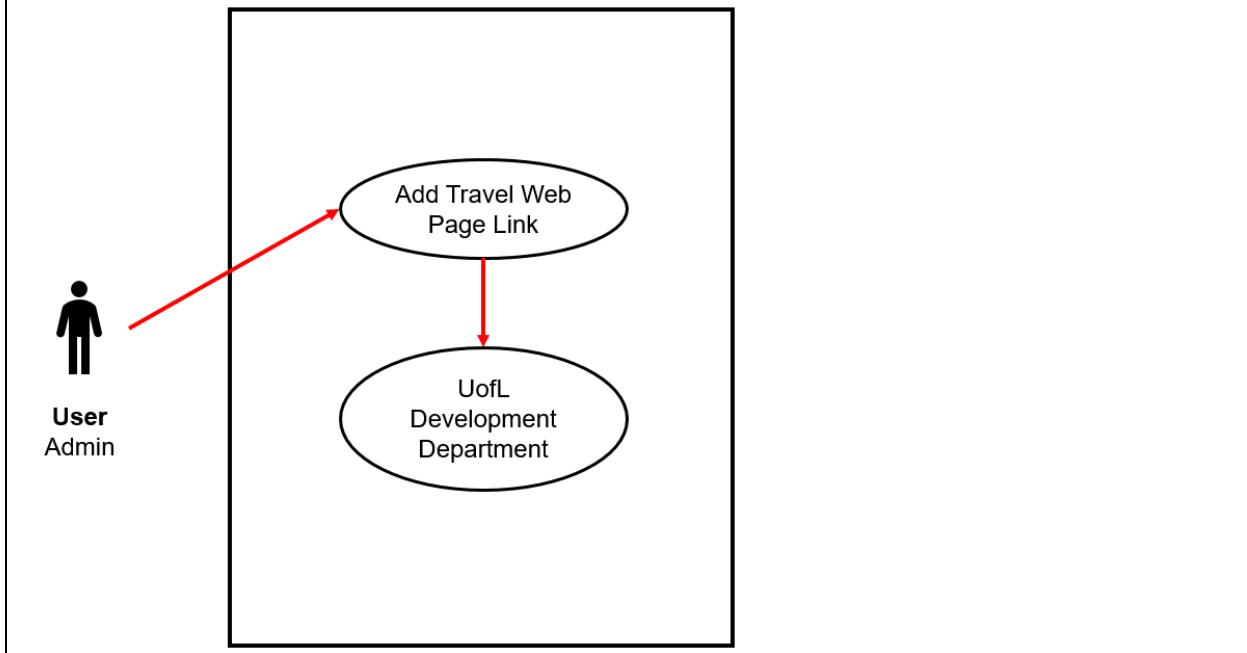
UC 26, 27, 28 – Add Event, Edit Event, Delete Event







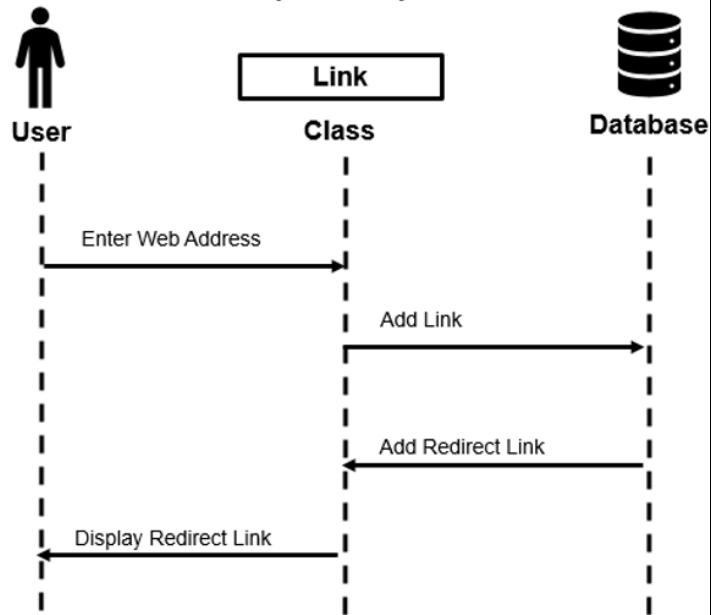
UC 29 - Link the Donation Process Directly to UofL Development Departments



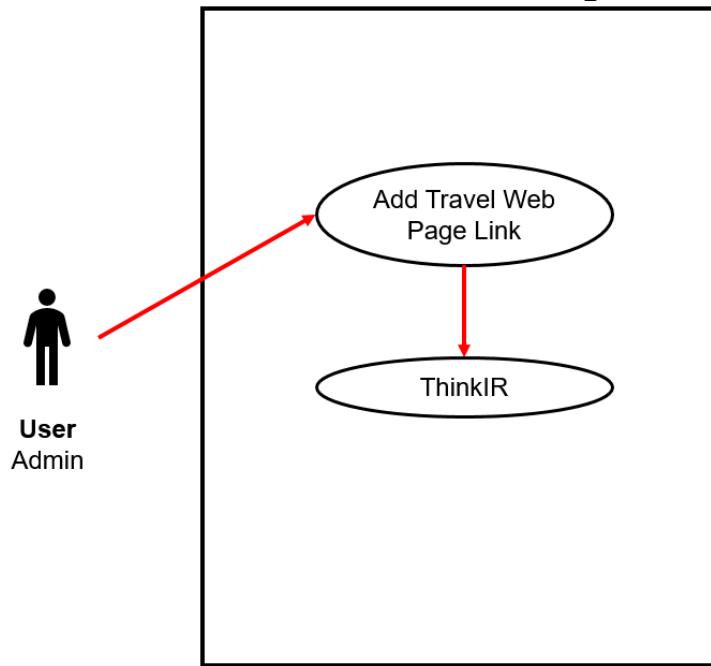
Sequence Diagram
Link the Donation Process Directly to UofL Development Departments 29

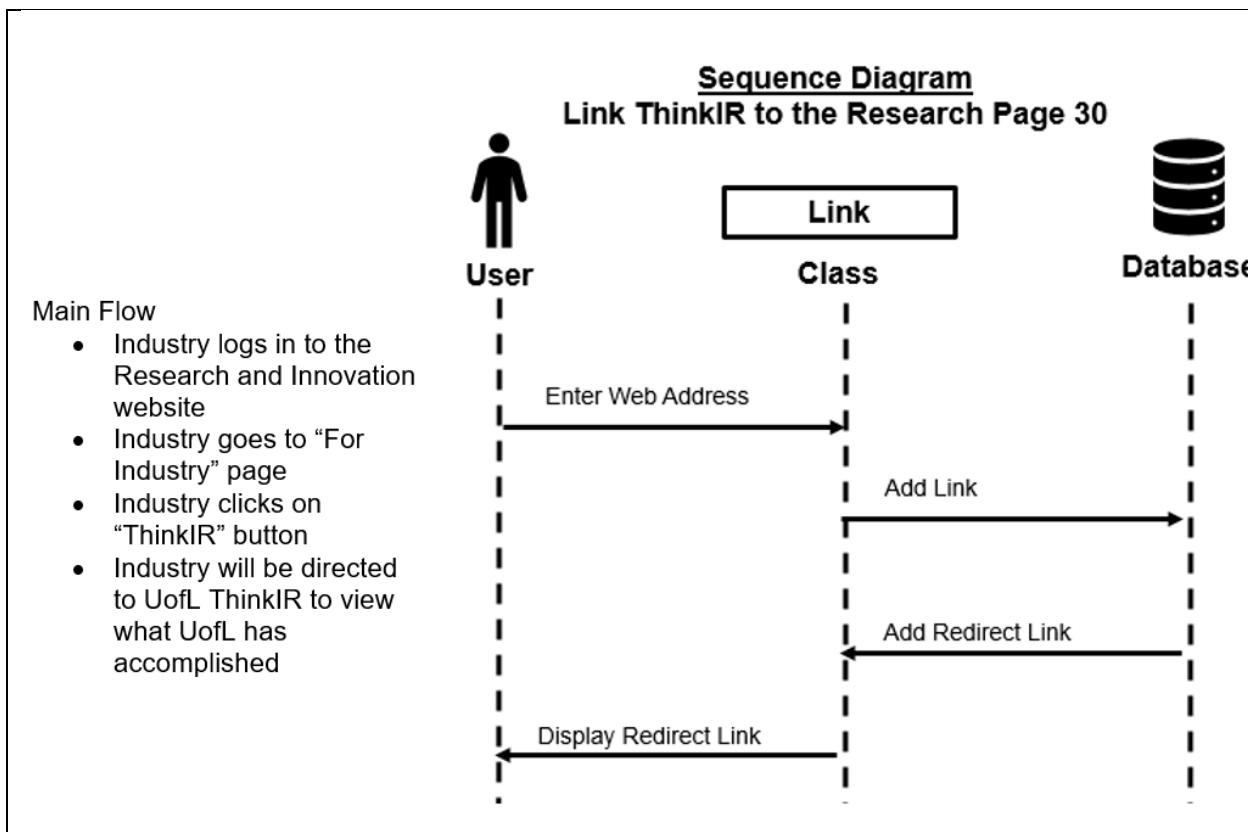
Main Flow

- Industry logs in to the Research and Innovation website
- Industry goes to “For Industry” page
- Industry clicks on “Donation” button
- Industry be directed to UofL development departments’ webpages to continue their donation process



UC 30 - Link ThinkIR to the Research Page





4. Trace Matrix

- Associates use cases with system requirements. To address how use cases can be traced from top-level system requirements, we will explore the applications from the main system requirements and the system allowing administrators to view applications.

	Requirement 1	Requirement 2	Requirement 3	Requirement 4	Requirement 5	Requirement 6	Requirement 7	Requirement 8	Requirement 9	Requirement 10	Requirement 11	Requirement 12	Requirement 13	Requirement 14	Requirement 15	Requirement 16	Requirement 17	Requirement 18	Requirement 19	Requirement 20	Requirement 21	Requirement 22	Requirement 23	Requirement 24	Requirement 25	Requirement 26	Requirement 27	Requirement 28	Requirement 29	Requirement 30	Requirement 31	Requirement 32	Requirement 33	Requirement 34
Use Case 1											X	X	X																					
Use Case 2	X																																	
Use Case 3		X																																
Use Case 4			X																															
Use Case 5				X																														
Use Case 6					X																													
Use Case 7						X																												
Use Case 8							X																											
Use Case 9								X																										
Use Case 10									X																									
Use Case 11										X																								
Use Case 12											X																							
Use Case 13												X																						
Use Case 14													X																					
Use Case 15														X																				
Use Case 16	X	X					X								X																			
Use Case 17		X														X																		
Use Case 18		X															X																	
Use Case 19																	X		X	X														
Use Case 20																		X	X	X														
Use Case 21																		X	X	X														
Use Case 22	X	X	X	X				X	X									X	X	X	X	X					X							
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Use Case 32																																X		
Use Case 33																																	X	
Use Case 34																																		

5. Use Cases

- An overview of essential use cases describing a specific situation in which a product or service could potentially be used.

Use Case ID	Case Name	Primary Actor	Description
UC 1	Create Research Application	Student	Students will be able to apply for research opportunities with researchers
UC 2	Update Information on Current Partnerships	Admin	The admin will update information on current partnerships on the website
UC 3	Add Weekly Updates to Newsletter	Admin	The admin will create weekly updates to the newsletter on the website
UC 4	Delete the Newsletter	Admin	The system will allow admins to delete a newsletter on the website
UC 5	Edit the Newsletter	Admin	The system will allow admins to edit a newsletter on the website
UC 6	Find Information	Student	The system allows the student to find information from the Grants Management System
UC 7	Create Grants	Admin	The system allows the admin to create new grants in the Grants Management System
UC 8	Modify Grants	Admin	The system allows the admin to modify already existing grants in the Grants Management System
UC 9	Delete Grants	Admin	The system allows the admin to delete already existing

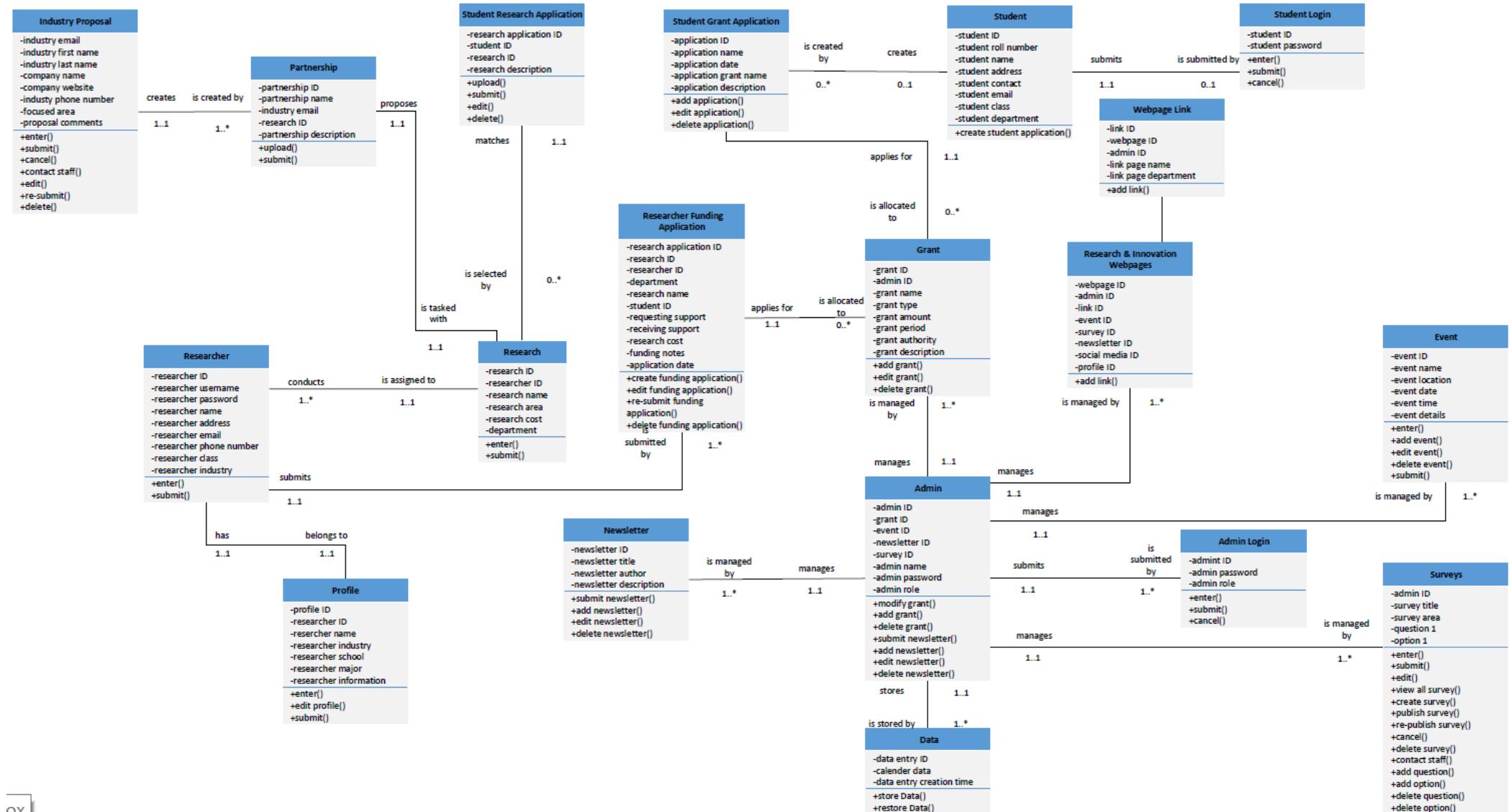
			grants in the Grants Management System
UC 10	Create Grant Application	Student	The system allows students to create student applications to apply for a grant through the Grants Management System
UC 11	Edit Grant Application	Student	The system will allow student applications to be edited
UC 12	Delete Grant Application	Student	The system will allow the deletion of student applications
UC 13	Create Funding Application	Researcher	The system will accept funding applications
UC 14	Edit Funding Application	Researcher	The system will allow funding applications to be edited
UC 15	Delete Funding Application	Researcher	The system will allow funding applications to be deleted
UC 16	Create Industry Proposal	Industry	The system will accept industry proposals
UC 17	Edit Industry Proposal	Industry	The system will allow industry users to edit the proposals they have uploaded before
UC 18	Delete Industry Proposal	Industry	The system will allow industry users to delete the proposals they have uploaded before
UC 19	Add Surveys	Admin	The system will allow the admin to add new surveys
UC 20	Edit Survey	Admin	The system will allow the admin to modify the surveys created before
UC 21	Delete Survey	Admin	The system will allow the admin to delete the surveys created before

UC 22	Login	Admin	The admin can log into their accounts with their username and password
UC 23	Backup Data	Admin	The admin can log into their account and create a copy of computer data
UC 24	Restore Data	Admin	The admin can log into their account and restore and rebuild the website in the case of data loss due to a previous copy being made.
UC 25	Create Profiles	Researcher	The system will allow researchers to create profiles to showcase their works
UC 26	Add Event	Admin	The system will allow the admin to add events
UC 27	Edit Event	Admin	The system will allow the admin to edit events
UC 28	Delete Event	Admin	The system will allow the admin to delete events
UC 29	Link the Donation Process Directly to UofL Development Departments	Admin	The admin can add links to other university departments and resources, in this case, the development department for donations
UC 30	Link ThinkIR to the Research Page	Admin	The admin can add links to other university departments and resources, in this case, the ThinkIR research page

6. Class Diagram

- The class diagram includes all probable domain classes. It displays the structure of a system by showing the system's classes, their attributes, operations, and the relationships among objects. A class is a description of a group of objects all with similar roles in the system. The diagram is further explained with CRC Cards which are a brainstorming tool.

- The class diagram outlines the relationships and cardinality of all the classes that play an important role in the functionality of the University of Louisville Research & Innovation website.
 - For example, the Industry Proposal class is associated with the Partnership class. When the industry proposal is created, the unique “industry email” attribute will be stored in the Partnership class as well.
 - Each diagram includes the attributes the function requires and the methods to realize the function.
 - For example, the Industry Proposal class contains the attributes that the Industry user needs to provide when he/she submit the industry proposal, as well as the methods he/she can utilize when they are filling out and submitting their proposal.



Front

Class name: Student Research Application	ID: 1	Type: Concrete, Domain
Description: Students will be able to apply for research opportunities with researchers.	Associated Use Cases: 1	
Responsibilities Upload() Submit() Edit() Delete()	Collaboration Research	

Back

Attributes: Research application ID Student ID Research ID Research description
Relationships: Generalization (a-kind-of): Form Aggregation (has-parts): N/A Other Associations: Research

Front

Class name: Research Application	ID: 2	Type: Concrete, Domain
Description: The research table includes a research ID which will be unique for each research. Then researcher ID to identify the student who is participating in the research. Then information about	Associated Use Cases: 3	

the research starting with research name and area. Then the cost of this research and lastly the department that this research is part of.	
<p>Responsibilities</p> <p>Enter the application information Edit the application Submit the application Delete the application</p>	<p>Collaboration</p> <p>Researcher Partnership Student research application</p>

Back

<p>Attributes:</p> <p>Research ID Researcher ID Research name Research area Research cost Department</p>
<p>Relationships:</p> <p>Generalization (a-kind-of): Form Aggregation (has-parts): N/A Other Associations: Researcher Partnership Student research application</p>

Front

Class name:	ID: 3	Type:
		Concrete, Domain

Description:	Associated Use Cases: 2
<p>Student table contains the student information so we have student information in our databases. It contains first of all Student ID which is the unique Id for each student. The student roll number is also unique for each student. Student table must also contain student name, address and contact information. This is important to send mails that</p>	

<p>contain important information to the student. Student email is also the most important thing that the student will receive important emails about their application. It also will contain a student class and department.</p>	
<p>Responsibilities Create grant student application</p>	<p>Collaboration Student Log In Student Grant Application</p>

Back

<p>Attributes: Student ID Student roll number Student name Student address Student contact Student email Student class Student department</p>
<p>Relationships: Generalization (a-kind-of): Connection Aggregation (has-parts): N/A Other Associations: Student Log In Student Grant Application</p>

Front

<p>Class name: Student Login</p>	<p>ID: 4</p>	<p>Type: Concrete, Domain</p>
<p>Description: The login table contains User ID- int(7) as a unique Id for each student and Password- int(20) attributes. The User class contains two methods, enter and submit. It interacts with the User Data class to login, and the User Data class</p>		<p>Associated Use Cases: 1</p>

interacts with the Roles class to distribute permissions.	
Responsibilities: Enter() Submit() Cancel()	Collaboration: Admin

Back

Attributes: Admin ID Admin password Admin role
Relationships: Generalization (a-kind-of): Form Aggregation (has-parts): N/A Other Associations: Admin

Front

Class name: Data	ID: 5	Type: Concrete, Domain
Description: The admin can log into their account and backup, restore, or rebuild the website in the case of data loss	Associated Use Cases: 1	
Responsibilities Backup data Restore data	Collaboration Admin	

Back

Attributes: Data entry ID Calendar data Data entry creation date
Relationships: Generalization (a-kind-of): Data Aggregation (has-parts): N/A

Other Associations: Admin

Front		
Class name: Researcher Funding Application	ID: 6	Type: Concrete, Domain
Description: Researchers can apply for funding to fuel their research	Associated Use Cases: 3	
Responsibilities Create funding application Submit funding application Edit funding application Re-submit funding application Delete funding application	Collaboration Research Researcher Grant	

Back

Attributes: Researcher application ID Research ID Researcher ID Department Research name Participating Student ID Requesting support Receiving support Research cost Funding notes Application date
Relationships: Generalization (a-kind-of): Form Aggregation (has-parts): N/A Other Associations: Research, Researcher, Grant

Front

Class name: Grant	ID: 7	Type: Concrete, Domain
-----------------------------	--------------	----------------------------------

Description: The Grant class stores the information of grants	Associated Use Cases: 3
Responsibilities Add grants Edit grants Delete grants	Collaboration Admin Researcher Funding Application Student Grant Application

Back

Attributes: Grant ID Admin ID Grant name Grant type Grant amount Grant period Grant authority Grant description
Relationships: Generalization (a-kind-of): Document Aggregation (has-parts): N/A Other Associations: Admin, Researcher Funding Application, Student Grant Application

Front

Class name: Research	ID: 8	Type: Concrete, Domain
Description: The Research class stores the allocation of researches and researchers	Associated Use Cases: 4	
Responsibilities Enter research/researcher information Submit information	Collaboration Researcher Partnership Student Research Application Researcher Funding Application	

Back**Attributes:**

Research ID
Researcher ID
Research name
Research area
Research cost
Department

Relationships:

Generalization (a-kind-of): Connection

Aggregation (has-parts): N/A

Other Associations: Researcher, Partnership, Student Research Application, Researcher Funding Application

Front

Class name: Partnership	ID: 9	Type: Concrete, Domain
Description: The partnership is generated after the industry proposal is accepted	Associated Use Cases: 1	
Responsibilities Review industry proposal Assign industry proposal to researcher	Collaboration Research	

Back**Attributes:**

Partnership ID
Partnership name
Industry email
Research ID
Partnership description

Relationships:

Generalization (a-kind-of): Connection

Aggregation (has-parts): N/A

Other Associations: Research

Front

Class name: Industry Proposal	ID: 10	Type: Concrete, Domain
Description: Industry users can create/edit/delete proposals to initiate research	Associated Use Cases: 1	
Responsibilities Enter proposal information Submit proposal Edit proposal Re-submit proposal Delete proposal Contact UofL staff	Collaboration Partnership	

Back

Attributes: Industry email Industry representative first name Industry representative last name Company name Company website Industry representative phone number Industry focused area Industry proposal comments
Relationships: Generalization (a-kind-of): Forms Aggregation (has-parts): N/A Other Associations: Partnership

Front

Class name: Researcher	ID: 11	Type: Concrete, Domain
Description: The information of Researcher users	Associated Use Cases: 3	

Responsibilities Enter Researcher user information Submit Researcher user information	Collaboration Profile Research Researcher Funding Application
--	---

Back

Attributes: Researcher ID Researcher password Researcher name Researcher address Researcher email Researcher phone number Researcher class Researcher industry
Relationships: Generalization (a-kind-of): Person Aggregation (has-parts): N/A Other Associations: Profile, Research, Researcher Funding Application

Front

Class name: Newsletter	ID: 12	Type: Concrete, Domain
Description: The admin can create/edit/delete newsletters to showcase UofL research accomplishments	Associated Use Cases: 1	
Responsibilities Submit newsletters Add newsletters Edit newsletters Delete newsletters	Collaboration Admin	

Back

Attributes: Newsletter ID Newsletter title Newsletter author Newsletter description
--

Relationships:**Generalization (a-kind-of):** Webpages**Aggregation (has-parts):** N/A**Other Associations:** Admin**Front**

Class name: Profile	ID: 13	Type: Concrete, Domain
Description: The researchers can create profile to showcase their works		Associated Use Cases: 1
Responsibilities Enter the profile information Edit the profile Submit the profile		Collaboration Researcher

Back**Attributes:**

Profile ID
 Researcher ID
 Researcher name
 Researcher industry
 Researcher major
 Researcher information

Relationships:**Generalization (a-kind-of):** Webpages**Aggregation (has-parts):** N/A**Other Associations:** Researcher**Front**

Class name: Admin	ID: 14	Type: Concrete, Domain
Description: The information of Admin users		Associated Use Cases: 7

Responsibilities	Collaboration
Add grants	Newsletter
Modify grants	Grant
Delete grants	Research & Innovation Webpages
Submit newsletters	Event
Add newsletters	Surveys
Edit newsletters	Data
Delete newsletters	Admin Login

Back

Attributes: Admin ID Grant ID Event ID Newsletter ID Survey ID Admin name Admin password Admin role
Relationships: Generalization (a-kind-of): Person Aggregation (has-parts): Admin Login Other Associations: Newsletter, Grant, Research & Innovation Webpages, Event, Surveys

Front

Class name: Event	ID: 15	Type: Concrete, Domain
Description: Admins can create/edit/delete the events		Associated Use Cases: 1
Responsibilities Enter the event information Add events Edit events Delete events Submit events		Collaboration Admin

Back**Attributes:**

Event ID
Event name
Event location
Event date
Event time
Event details

Relationships:

Generalization (a-kind-of): Events

Aggregation (has-parts): N/A

Other Associations: Admin

Front

Class name: Survey	ID: 16	Type: Concrete, Domain
Description: Admins can create/edit/delete surveys that are designed for students to take	Associated Use Cases: 1	
Responsibilities Enter the survey information Publish the survey Edit the survey View all surveys Re-publish the survey Delete the survey Add a question Add an option Delete a question Delete an option	Collaboration Admin	

Back**Attributes:**

Admin ID
Survey title
Survey area
Question
Option

Relationships:**Generalization (a-kind-of):** Surveys**Aggregation (has-parts):** N/A**Other Associations:** Admin**Front**

Class name: Admin Login	ID: 17	Type: Concrete, Domain
Description: Admins can log in to the Research & Innovation website		Associated Use Cases: 1
Responsibilities Enter username Enter password Submit login		Collaboration Admin

Back**Attributes:**

Admin ID
 Admin password
 Admin role

Relationships:**Generalization (a-kind-of):** Form**Aggregation (has-parts):** N/A**Other Associations:** Admin**Front**

Class name: Research & Innovation Webpages	ID: 18	Type: Concrete, Domain
Description: The webpages will be organized by the admins		Associated Use Cases: 1
Responsibilities Add a link		Collaboration Admin Webpage Link

Back**Attributes:**

Webpage ID
Admin ID
Link ID
Event ID
Survey ID
Newsletter ID
Social media ID
Profile ID

Relationships:

Generalization (a-kind-of): webpages
Aggregation (has-parts): Webpage Links
Other Associations: Admin

Front

Class name: Webpage Links	ID: 19	Type: Concrete, Domain
Description: The admin can add links to the webpages to different UofL departments or different content	Associated Use Cases: 1	
Responsibilities Add a link	Collaboration Research & Innovation Webpages	

Back**Attributes:**

Link ID
Webpage ID
Admin ID
Link page name
Link page department

Relationships:

Generalization (a-kind-of): webpages
Aggregation (has-parts): N/A
Other Associations: Research & Innovation Webpages

7. Database Design and Database Definitions

- The Data Management Layer Design take part in different steps:
-

0 Normal Form

Do any tables have repeating fields? Do some records have a different number of columns from other records?	Yes: Remove the repeating fields. Add a new table that contains the fields that repeat. No: The data model is in 1NF
---	---

First Normal Form

Is the primary key made up of more than one field? If so, do any fields depend on only a part of the primary key?	Yes: Remove the partial dependency. Add a new table that contains the fields that are partially dependent. No: The data model is in 2NF
---	--

Second Normal Form

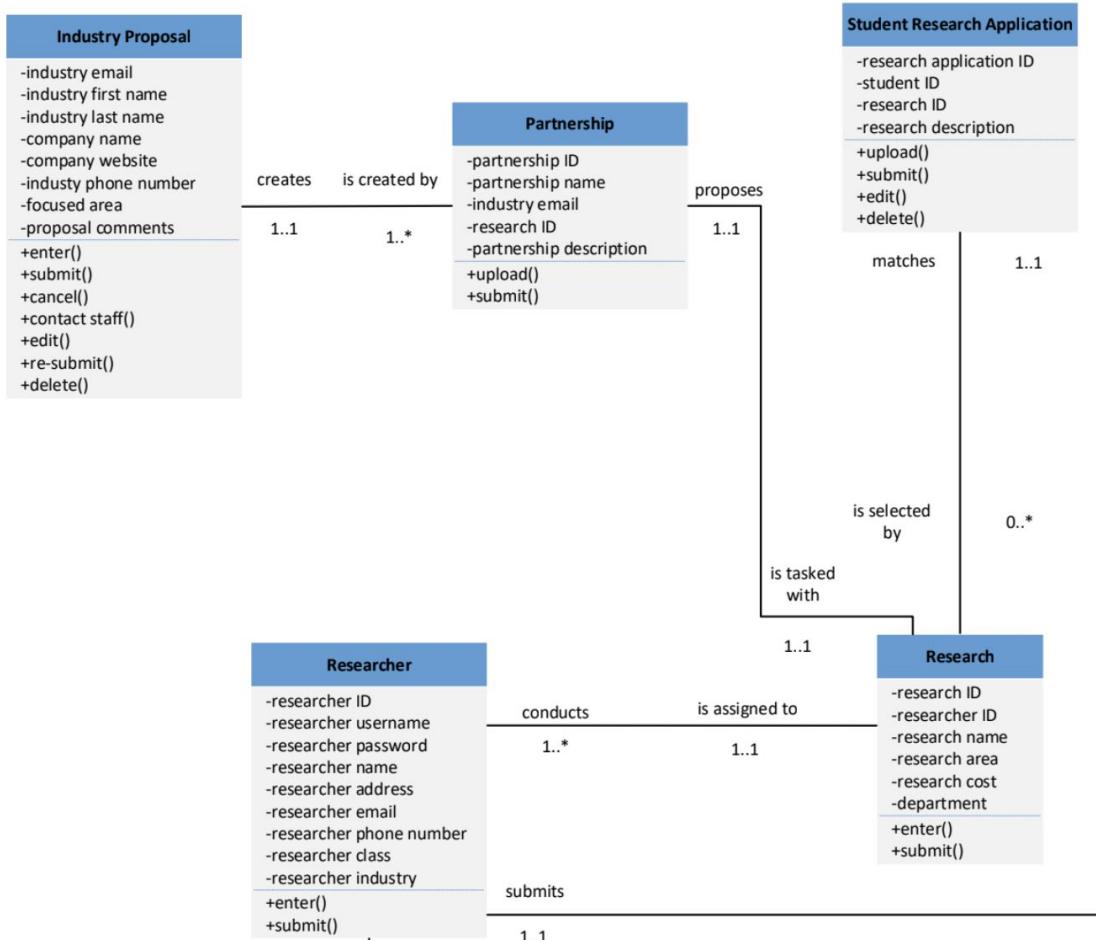
Do any fields depend on another nonprimary key field?	Yes: Remove the transitive dependency. Add a new table that contains the fields that are transitively dependent. No: The data model is in 3NF
---	--

Third Normal Form

Grant	Admin
<ul style="list-style-type: none"> -grant ID -admin ID -grant name -grant type -grant amount -grant period -grant authority -grant description <hr/> <ul style="list-style-type: none"> +add grant() +edit grant() +delete grant() 	<ul style="list-style-type: none"> -admin ID -grant ID -event ID -newsletter ID -survey ID -admin name -admin password -admin role <hr/> <ul style="list-style-type: none"> +modify grant() +add grant() +delete grant() +submit newsletter() +add newsletter() +edit newsletter() +delete newsletter()

Example

In these two tables the admin ID in the admin table will serve as part of the primary key of the Grant table. Now if we have any records that are repeated will delete it. We did not have any repeats.



Research ID will serve as the primary key of the Researcher table.

Research ID will serve as part of the primary key of Research.

Research ID will serve as Foreign key of Research.

Researcher ID will serve as part of the primary key of Research.

Researcher ID will serve as Foreign key of Research.

Research ID will serve as part of the primary key of the Partnership.

Research Application ID will serve as part of the primary key of the Research application.

Research ID will serve as Foreign key of the Research application.

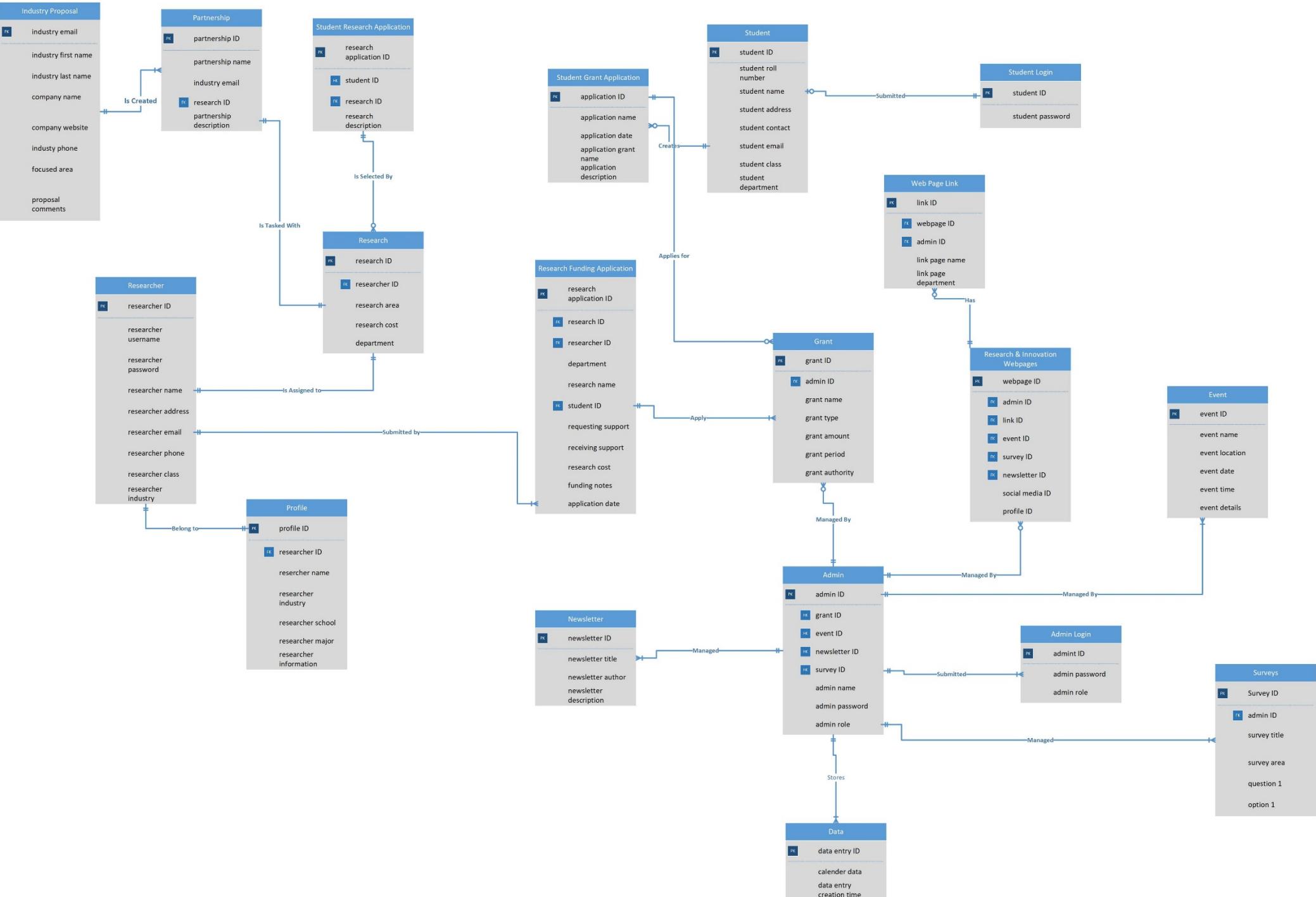
Research ID will serve as part of the primary key of the Partnership.

Partnership ID will serve as part of the primary key of the Partnership.

Partnership ID will serve as Foreign key of the Partnership.

Eliminate Redundancy

Researcher Username and password was moved to Researcher Table to eliminate redundancy. Research description was moved from research table to just research application table to eliminate redundancy.



Narratives

<p>Research Application Table</p> <p>Student ID - Int(9) Research ID- Int(9) Research Description - Varchar(200)</p>	<p>The research application table, we decided that we will have tables for each type of application since we have other applications like student application and funding application. This table is just to contain the student ID which will be int 9 numbers as it is always like this and we do not want to waste space in the memory. Also this table will contain a Research ID to identify each research that the university is doing. Each research will have a unique ID. We decided that it will also be 9 numbers. And lastly research description to add any notes about this research and it is char type 200.</p>
<p>Researcher Funding Application Table</p> <p>Project Name - Varchar(30) Department - Varchar(30) Research Area - Varchar(30) Researcher Name - Varchar(40) Student ID - Int(9) Requesting Support - int(8) Receiving Support -int(8) Research Cost - int(8) Notes - Varchar(200) Date - Date(8)</p>	<p>Funding application table contains the project name to define each project that they will fund. Department Varchar(30) to know this research is for which department in the university. Research Area Varchar(30) to specify the research area exactly that this research will serve to. Researcher Name Varchar(40), Student ID Int(9). Requesting Support int(8) to specify the amount of the requesting support. Receiving Support int(8)if the researcher had support before. Research Cost int(8) to estimate how much this research will cost. Notes Varchar(200)we make sure that on almost every table here has a note which is to give the applicant an option to add anything that he/she wants. Date-Date(10)it is like a sign and to specify when the applicants complete their application.</p>
<p>Student Grant Application Table</p> <p>Application ID - int(9) Application Name - Varchar(10) Application Date - Date(8) Application Grant Name -Varchar(20) Application Description - Varchar(200)</p>	<p>The Student Application Table contains an application ID which is going to be unique for each application. Then application name and details about the application. Date to specify the date that the applicant completed and sent their application. Application details to let the applicant add whatever they want.</p>

<p>Student Table</p> <p>student ID - int(9) student roll number - int(6) student name - Varchar(20) student address - Varchar(30) student contact - int(10) student email - varchar(20) student class - varchar(10) student department - varchar(20)</p>	<p>Student table contains the student information so we have student information in our databases. It contains first of all Student ID which is the unique Id for each student. The student roll number is also unique for each student. Student tables must also contain student name, address and contact information. This is important to send mails that contain important information to the student. Student email is also the most important thing that the student will receive important emails about their application. It also will contain a student class and department.</p>
<p>Researcher Table</p> <p>researcher ID - int(7) researcher username - Varchar(6) researcher password - Varchar(20) researcher name - Varchar(15) researcher address - Varchar(30) researcher email - Varchar(20) researcher phone number - int(10) researcher class - Varchar(10) researcher industry - Varchar(10)</p>	<p>Researcher table will contain the main information about the researcher. Starting with the unique researcher ID. then researcher username and password to let the researcher log in to the website and log in to their application. Also it will contain the researcher name and address if there is any mail should be sent to the researcher. Also it will contain their emails, phone number, class and which industry that they are in.</p>
<p>Partnership Table</p> <p>partnership ID - int(10) partnership name - varchar(20) industry email - varchar(20) research ID - int(10) partnership description - varchar(200)</p>	<p>Partnership table consists of partnership ID- int(10) then partnership name-varchar(20)industry email-varchar(20).research ID-int(7) as we choose in the partnership table. Partnership description-varchar(200) to give an option for any additional notes.</p>
<p>Research Table</p> <p>research ID - int(10) researcher ID - int(7) research name - varchar(15) research area - varchar(20) research cost - int(7) department - varchar(20)</p>	<p>The research table includes a research ID which will be unique for each research. Then researcher ID to identify the student who is participating in the research. Then information about the research starting with research name and area. Then the cost of this research and lastly the department that this research is part of.</p>
<p>Grant Table</p> <p>grant ID - int(10) admin ID - int(7) grant name - varchar(20) grant type - varchar(10)</p>	<p>In this table it is explaining the grant information and it also includes admin ID. The admin class holds admin's attributes and the grant class holds grants attributes. The client after seeing this</p>

grant amount - int(7) grant period - varchar(10) grant authority - varchar(10) grant description - varchar(200)	<p>class model will get an impression of the detailed attributes and the associated method regarding the function to modify grants use case. The admin class interacts with the grants class to modify or delete the already existing grant having one to many multiplicity relations. Both classes have an association relationship with each other. In this table we have grant Id which will be unique to each grant. Admin ID as we described above. Grant name, type to identify this grant which type it will be then grant amount int(6). Grant period to specify this grant will be given in which semester. Then grant authority and description to add more details.</p>
Student Login Table student ID - int(7) student password - int(20)	<p>The login table contains User ID-int(7) as a unique Id for each student and Password- int(20) attributes. The User class contains two methods, enter and submit. It interacts with the User Data class to login, and the User Data class interacts with the Roles class to distribute permissions.</p>
Industry Proposal Table industry email - int(20) industry first name - varchar(12) industry last name - varchar(12) company name - varchar(20) company website - varchar(20) industry phone number - int(10) focused area - int(6) proposal comments - varchar(200)	<p>When the industry partner goes to UofL Research & Innovation website, they click on the tab that leads them to the page designed for industry users. When the industry partners go to the page, they will see a section dedicated for “Industry Request”, and when they click on the button “Industry Request Form”, they will be directed to a new page with three buttons. They can click on the create, edit or delete Industry Request Form” button. After clicking the button if they want to create or edit, they will see a box prompting them to enter the email address int(20)that is associated with the proposal. After entering the matching email address, the application is consist of industry first name-</p>

	varchar(12)industry last name-varchar(12)company name-varchar(20) company website-varchar(20)industry phone number-int(10)focused area-int(6) proposal comments-varchar(200) the system traces back the proposal, then the industry representative can make changes to the industry proposal/request they have already submitted using the information they have. They click on the “Re-submit” button and the changes will be sent to the UofL Research & Innovation Office for review and stored in the UofL database.
Profile Table researcher ID - int(7) researcher name - varchar(20) researcher industry - varchar(20) researcher school - varchar(20) researcher major - varchar(20) researcher information - varchar(50)	In order to create a profile, then the researcher will first have to log in to the Research and Innovation website. After this they will be prompted to create their profile including basic information, and research bio researcher ID- int(7)researcher name- varchar(20)researcher industry- varchar(20) researcher school- varchar(20) researcher major-varchar(20) researcher information-varchar(50) This will then become public on the website for other researchers, industries, and administration to see.
Admin Table admin ID - int(7) grant ID - int(10) event ID - int(10) newsletter ID - int(10) survey ID - int(10) admin name - varchar(20) admin password - varchar(20) admin role - varchar(20)	Admins goes to the Research & Innovation website, and click on the “Log In” tab, then he/she will be directed to the login page. After he/she enters the designated username and password, the database will verify the credentials and allow the admin to log in. the admin table will contain every ID that the admin has. Which in our project admin ID- int(7), grant ID-int(10), event ID-int(10), newsletter ID-int(10,)survey ID-int(10), admin name-varchar(20), admin password-varchar(20), admin role-varchar(20)
Surveys Table admin ID - int(10) survey title - varchar(20)	Admin goes to the Research & Innovation website, and logs in. Admin clicks on “Resource” tab, and clicks on “View All

<p>survey area - varchar(15) question 1 - varchar(20) option 1 - varchar(10)</p>	<p>Surveys" in the Survey section. After being directed to the survey page, admin clicks on the "Create Survey" which contains survey title-varchar(20), survey area-varchar(15), question 1-varchar(20), option 1-varchar(10). Then the survey is completed, the admin clicks on the button "Publish Survey". Admin can also modify and delete the survey.</p>
<p>Event Table event ID - int(10) event name - varchar(20) event location - varchar(20) event date - varchar(8) event time - varchar(20) event details - varchar(200)</p>	<p>The Event table is a mix between the administrator class and the event class. Admin table which holds the information the system holds for each admin after the system acknowledges this information, they can therefore connect to the events class and edit the information for an event from that class. This is a one to many relationship because an admin can edit more than one event if they like. The event class contain event ID-int(10)which is unique to identify each event, event name-varchar(20), event location-varchar(20), event date-varchar(8), event time-varchar(20), event details-varchar(200).</p>
<p>Newsletter Table newsletter ID - int(10) newsletter title - varchar(20) newsletter author - varchar(20) newsletter description - varchar(200)</p>	<p>The Newsletter table contains a newsletter ID which is unique for each newsletter. It is important to have a newsletter to keep everyone updated about the latest news. It also contains a newsletter title, newsletter author, newsletter description.</p>
<p>Backup Data Table Data entry ID - varchar Calendar Date - date Data entry creation time - time</p>	<p>This data table describes the flow of action through which the actor (admin) logs into the system and starts a data backup and restoration. The system verifies their permissions and allows them access to this functionality.</p> <p>The backup data class diagram contains Data, Calendar Date, and Time attributes. The class contains one method, store data. It interacts with the restore data class because the data must be accessed for a rebuild.</p> <p>The class contains one more method, restore data. It interacts with the backup</p>

data class because the data must be accessed for a rebuild.

8. User Interface Navigation Diagram and Screen Layouts

- The Window Navigation Diagram depicts the screens needed to realize the use cases. The screen layouts are captured from the HTML prototype and realize the use cases.

UC 30 – Link ThinkIR to the Research Page

- Users will be able to access ThinkIR after clicking its link under the For Researchers tab. It will reroute them to the ThinkIR website so they can log in.

iRIS
integrated
Research
Information System

iRIS Login

> [Login Here](#)

Log In

Welcome to

UL
OF

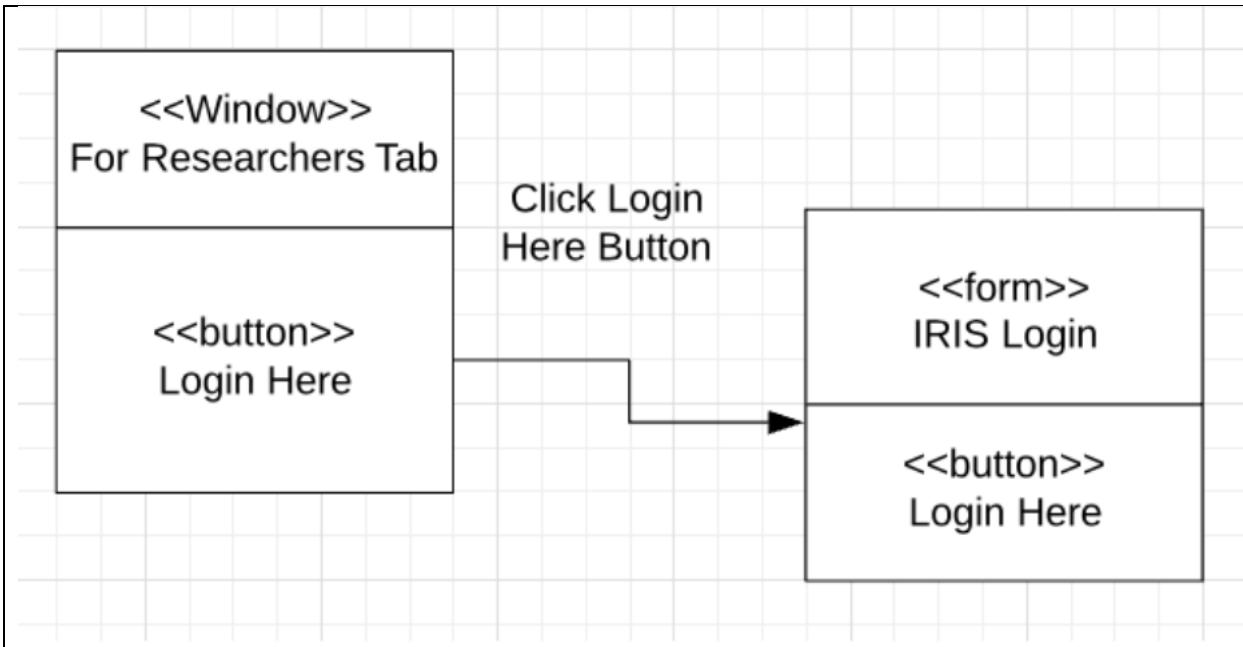
iRIS
integrated
Research
Information System

UserID:

Password:

Log In

[System/Browser Requirements](#)



UC 13 – Create Funding Application

- The researcher can find this module under the For Researchers tab. Clicking the link reroutes them to a form that allows them to create a funding application.

Create Funding Application

Name of the Project	<input type="text"/>	Name	<input type="text"/>
Department	<input type="text"/>	Student Id	<input type="text"/>
Research Area	<input type="text"/>	Uofl Email	<input type="text"/>
		student Id	<input type="text"/>
Are you requesting support for this project from any other unit? if yes, give name of unit and amount of support requested		<input type="text"/>	
Are you receiving support for this project from any other Uofl unit? if yes, give name of unit and amount of support		<input type="text"/>	
Explanation and justification of major costs: <input type="text"/>			
Check here if this is a resubmission <input type="checkbox"/>			
Funding Application	Additional Notes	Date	mm/dd/yyyy
> Create Funding Application > Edit Funding Application > Delete Funding Application		Submit	Cancel

UC 14 – Edit Funding Application

- The researcher can find this module under the For Researchers tab. Clicking the link reroutes them to a form that allows them to edit a funding application.

Edit Funding Application

List of application

Name of the Project	<input type="text"/>	Name	<input type="text"/>
Department	<input type="text"/>	Student Id	<input type="text"/>
Research Area	<input type="text"/>	Uofl Email	<input type="text"/>
		student Id	<input type="text"/>

Are you requesting support for this project from any other unit? if yes, give name of unit and amount of support requested

Are you receiving support for this project from any other Uofl unit? if yes, give name of unit and amount of support

Explanation and justification of major costs:

Check here if this is a resubmission

Additional Notes

Date

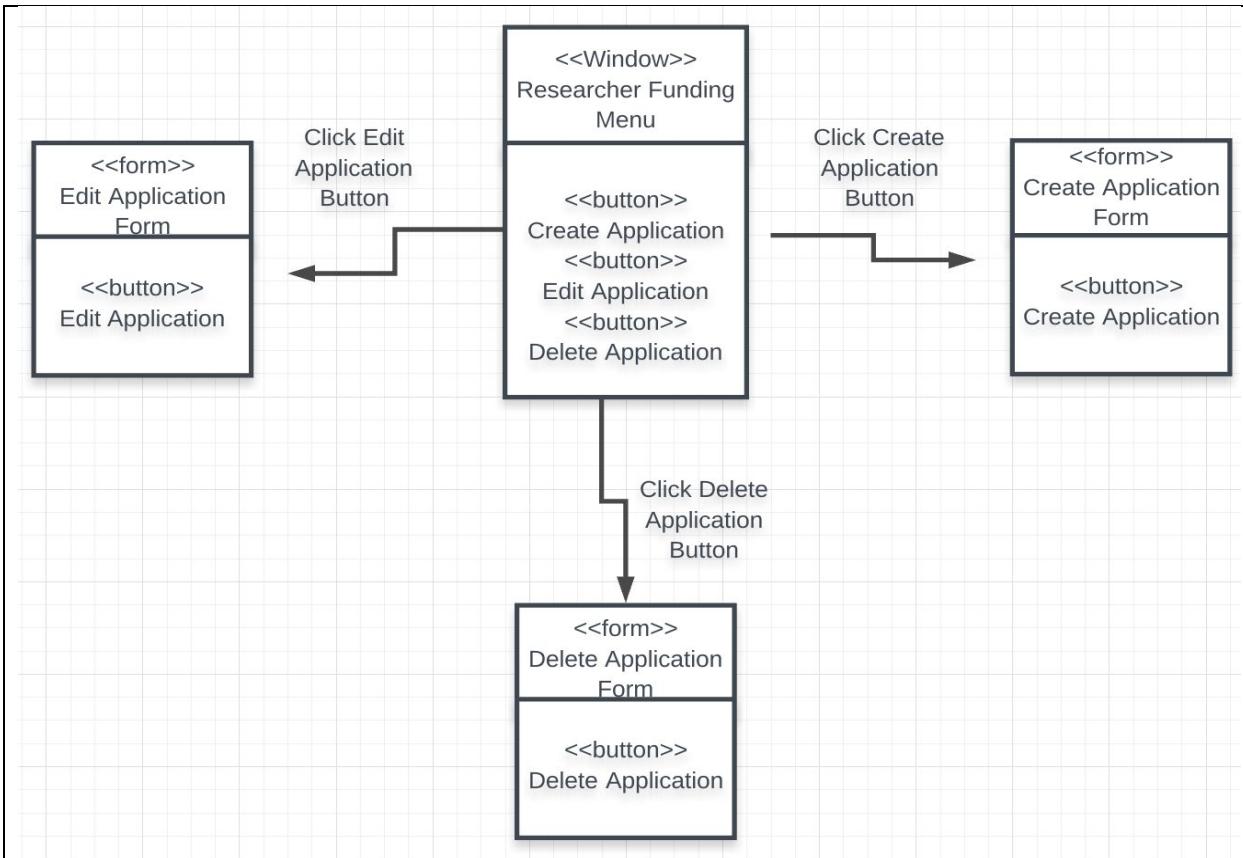
UC 15 – Delete Funding Application

- The researcher can find this module under the For Researchers tab. Clicking the link reroutes them to a form that allows them to delete a funding application.

Delete Funding Application

List of application

Student ID	<input type="text"/>
------------	----------------------



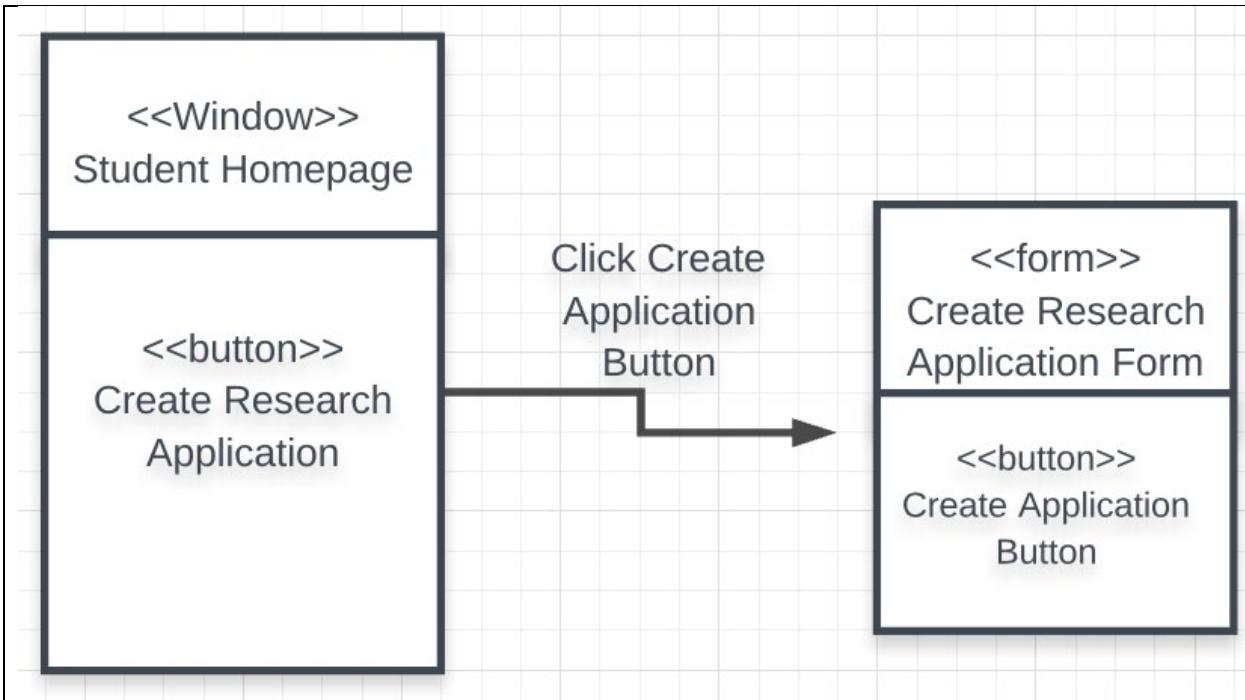
UC 1 – Create Research Application

- Students can find the research application module which includes a link to the form.

Create Research Application

The screenshot shows a web-based application for creating a research application. On the left, there is a sidebar with a circular icon containing a magnifying glass over a document and the text "Research Application". Below the sidebar, a link says "> [Create Research Application](#)". The main content area has the following fields:

- Title:** A text input field containing "Research #1 Title 1". To its right are buttons for **Apply** (red), **Review**, and **profile**.
- Description:** A text area with the placeholder text: "This Research will focus on microbiology. You will be performing several labs and reports."
- Requirements:** A large empty text area for requirements.
- File Upload:** A section with a "Choose File" button and a message "No file chosen". To its right is a dashed box labeled "Documents Uploaded".
- Submit:** A central "Submit" button at the bottom of the form.



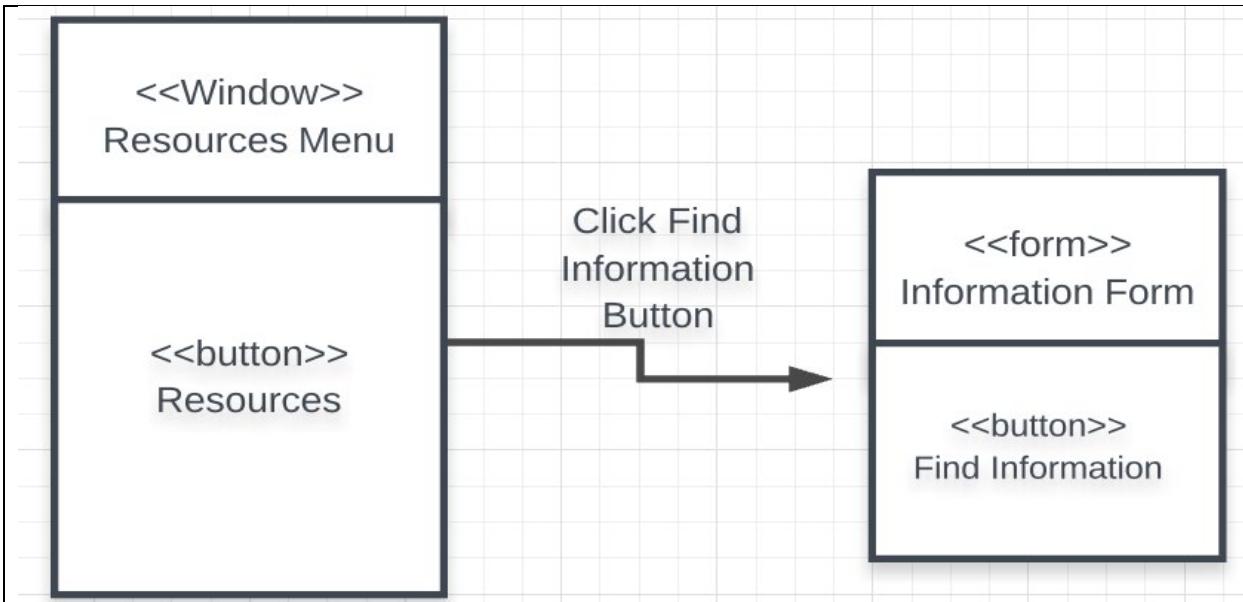
UC 6 – Find Information

- The student can find this module under the For Students tab. Clicking the reroute link opens a form that allows the student to search for grants.

Search Information

Find Grant Information			
Enter Grant Search :	<input type="text" value="Search"/>	<input type="button" value="q"/>	
Display Grant Information			
Grant ID	<input type="text"/>	Grant Name	<input type="text"/>
Grant Type	<input type="text"/>	Grant Amount	<input type="text"/>
Concerned Authority	<input type="text"/>		
Grant Details	<input type="text"/>		
<input type="button" value="Cancel"/>		<input type="button" value="Go Back"/>	

 Find Information
 > [Find Information Form](#)



UC 10 – Create Grant Application

- The student can find this module under the For Students tab. Clicking the link reroutes them to a form that allows them to create a student application.

Create Student Application

Application ID	<input type="text"/>	Application Name	<input type="text"/>
Application Date	<input type="text"/>	Application Grant Name	<input type="text"/>
Application Details			
Student Roll No.	<input type="text"/>	Student Name	<input type="text"/>
Student Class	<input type="text"/>	Student Department	<input type="text"/>
<input type="button" value="Cancel"/>		<input type="button" value="Submit"/>	

Student Application

- > [Student Application Form](#)
- > [Edit Student Application](#)
- > [Delete Student Application](#)

UC 11 – Edit Grant Application

- The student can find this module under the For Students tab. Clicking the link reroutes them to a form that allows them to edit a student application.

Edit Student Application

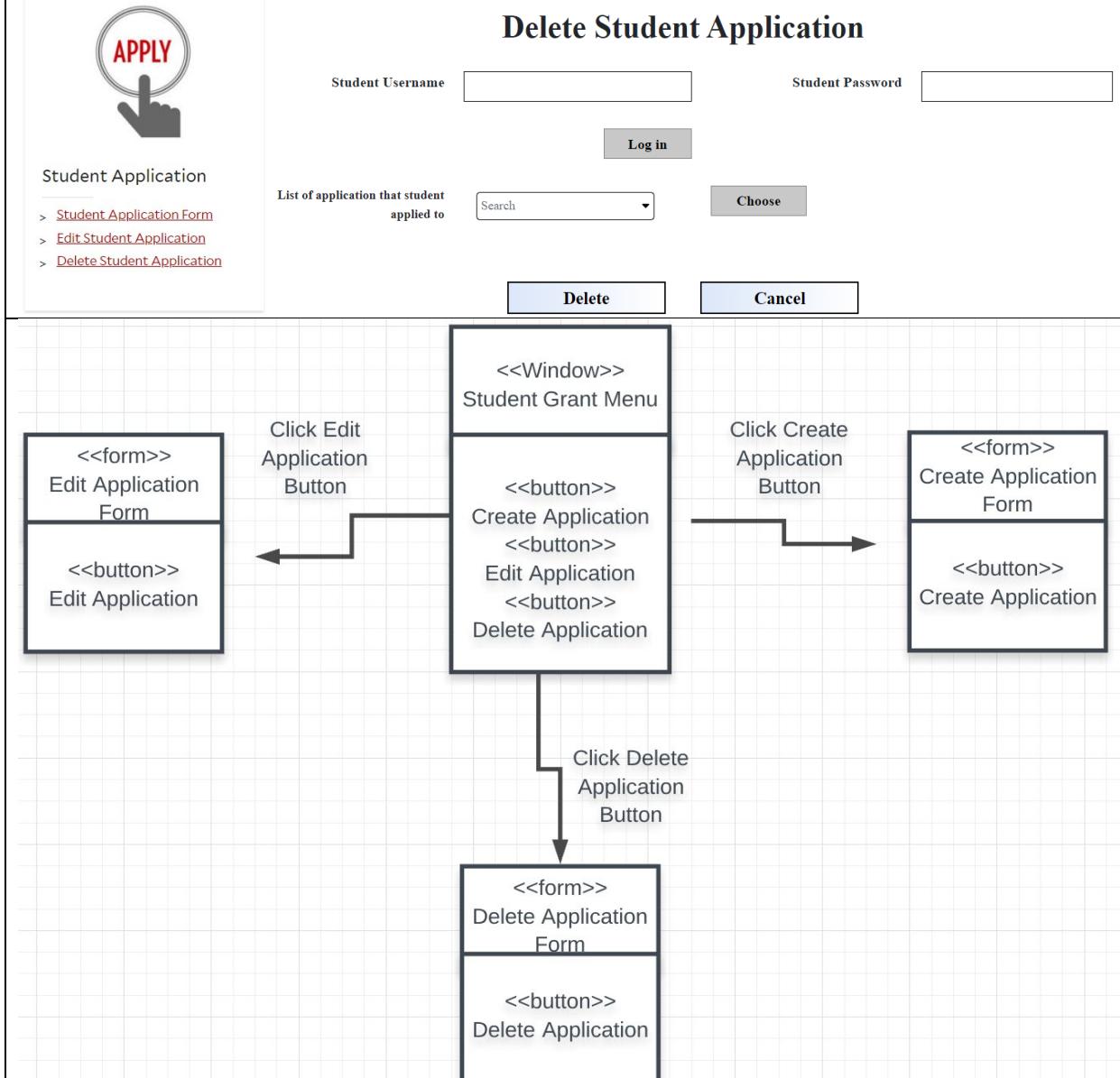
Student Username	<input type="text"/>	Student Password	<input type="text"/>
<input type="button" value="Log in"/>			
List of application that student applied to		<input type="button" value="Search"/>	<input type="button" value="Choose"/>
		<input type="button" value="Cancel"/>	

Student Application

- > [Student Application Form](#)
- > [Edit Student Application](#)
- > [Delete Student Application](#)

UC 12 – Delete Grant Application

- The student can find this module under the For Students tab. Clicking the link reroutes them to a form that allows them to delete a student application.



- The industry partner can find this module under the For Industry tab. Clicking the link reroutes them to a form that allows them to create an industry proposal.



Create Industry Proposal

If you have any question, please contact our staff [Contact Staff](#)

Email:

First Name: Last Name:

Company Name:

Website(if applicable) :

Day Time Phone Number :

How can we Help you?

space
 Labs, equipment
 Access to Technologies, Inventions and licensing
 Research support

Tell us more about your project goals, any research or interest areas.and any budgetary limitations, if applicable

[Submit](#) [Cancel](#)

Industry Request

- > [Industry Request Form](#)
- > [Edit industry proposal](#)
- > [Delete Industry Proposal](#)

UC 17 – Edit Industry Proposal

- The industry partner can find this module under the For Industry tab. Clicking the link reroutes them to a form that allows them to edit an industry proposal.



Edit industry proposal

If you have any question, please contact our staff [Contact Staff](#)

Email: 11111111@business.com

First Name: John Last Name: Doe

Company Name: Company 1

Website(if applicable) : Company1.com

Day Time Phone Number : (502)111-1111

How can we Help you?

space
 Labs, equipment
 Access to Technologies, Inventions and licensing
 Research support

Tell us more about your project goals, any research or interest areas.and any budgetary limitations, if applicable

[Re-submit](#) [Cancel](#)

Industry Request

- > [Industry Request Form](#)
- > [Edit industry proposal](#)
- > [Delete Industry Proposal](#)

UC 18 – Delete Industry Proposal

- The industry partner can find this module under the For Industry tab. Clicking the link reroutes them to a form that allows them to delete an industry proposal.

Delete Industry Proposal

If you have any question, please contact our staff [Contact Staff](#)

Please enter the mail address associated with the proposal you have submitted

Email:

[Submit](#) [Cancel](#)

Delete Industry Proposal

If you have any question, please contact our staff [Contact Staff](#)

April 2, 2020 - **Industry Request Form 2** [Delete](#)

March 30, 2020 - **Industry Request Form** [Delete](#)

```

graph TD
    subgraph IndustryHomepage [Industry Homepage]
        direction TB
        A["<<Window>>  
Create Proposal  
<<button>>  
Edit Proposal  
<<button>>  
Delete Proposal"]
    end
    subgraph CreateProposalForm [Create Proposal Form]
        direction TB
        B["<<form>>  
Create Proposal Form  
<<button>>  
Create Proposal"]
    end
    subgraph DeleteProposalForm [Delete Proposal Form]
        direction TB
        C["<<form>>  
Delete Proposal Form  
<<button>>  
Delete Proposal"]
    end
    A -- "Click Edit Proposal Button" --> B
    B -- "Click Create Proposal Button" --> C
    C -- "Click Delete Proposal Button" --> A

```

UC 2 – Update Information on Current Partnerships

- Admins can find this module under the For Industry tab. After locating the Current Partnerships module, they will be able to update information via a form.

Update Information on Current Partnerships



Current Partnerships

> [Update Information on Current Partnerships](#)

Description: This Research will focus on microbiology. You will be performing several labs and reports.

Requirements:

URL: www.partner1website.com

Submit

```

    <<Window>>
    For Industry Tab
    <<button>>
    Update Information
    on Current
    Partnerships
  
```

Click Update Information Button

```

    <<form>>
    Update Info on
    Current Partnerships
    Form
    <<button>>
    Update Infromation
  
```

UC 7 – Create Grants

- The admin can find this module under the For Researchers tab. Clicking the link reroutes them to a form that allows them to create a grant.



Grants

> [Create Grants](#)

> [Delete Grants](#)

Create Grants

Grant ID	<input type="text"/>	Grant Name	<input type="text"/>		
Grant Type	<input type="text"/>	Grant Amount	<input type="text"/>	Period	<input type="text"/>
Concerned Authority	<input type="text"/>				
Grant Detail	<input type="text"/>				

Cancel **Submit**

UC 9 – Delete Grants

- The admin can find this module under the For Researchers tab. Clicking the link reroutes them to a form that allows them to delete a grant.



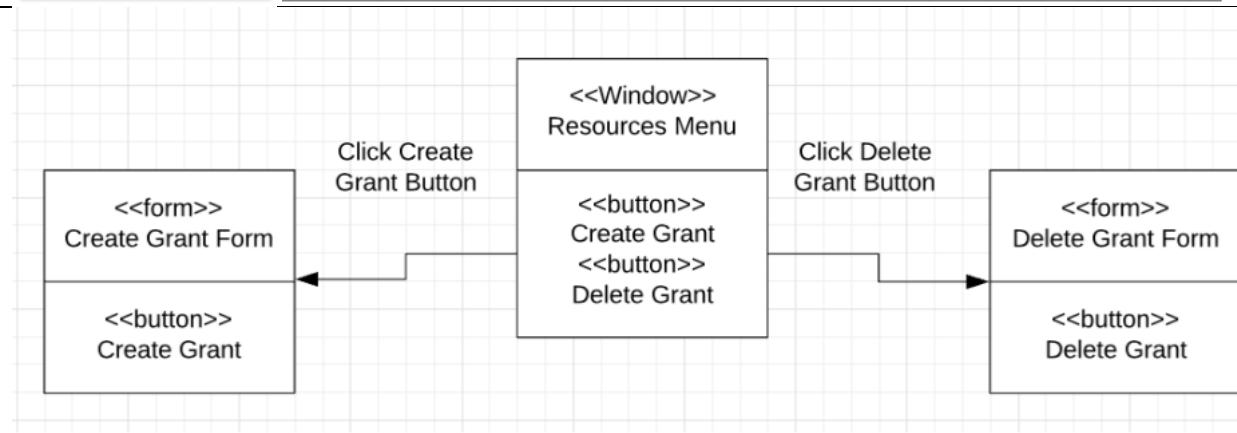
Grants

- > [Create Grants](#)
- > [Delete Grants](#)

Delete Grants

Grant ID	<input type="text"/>	Grant Name	<input type="text"/>
Grant Type	<input type="text"/>	Grant Amount	<input type="text"/>
Concerned Authority	<input type="text"/>		
Grant Detail	<input type="text"/>		

Cancel **Delete**



UC 19 – Add Surveys

- The admin can find this module under the Resources tab. Clicking the link reroutes them to a form that allows them to create a survey.



Survey

- > [Add Survey](#)
- > [Edit/Delete Survey](#)

Edit industry proposal

Survey Title:

Survey Area:

space
 Labs, equipment
 Access to Technologies, Inventions and licensing
 Research support

Question 1:

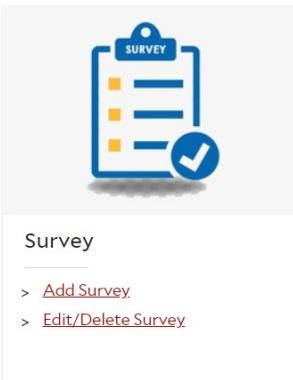
Option.... 1:

Add a Option **Add a Question**

Public Survey **Cancel**

UC 20 – Edit Survey

- The admin can find this module under the Resources tab. Clicking the link reroutes them to a page that gives them the option to edit or delete a survey, when edit is clicked, a form pops up that allows them to edit it.



Survey

- > [Add Survey](#)
- > [Edit/Delete Survey](#)

Log In To Edit Survey

Username:

Password:

Confirm
Cancel

Edit Survey

Survey Title:

Survey Area:

space
 Labs, equipment
 Access to Technologies, Inventions and licensing
 Research support

Question 1:

Option... 1:

[Add a Option](#)
[Add a Question](#)

[Re-public Survey](#)
[Cancel](#)

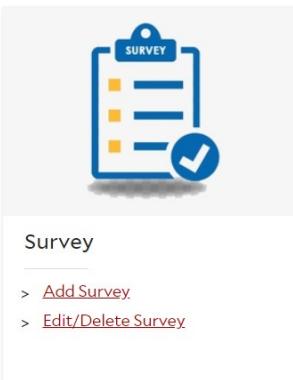
Select To Edit Survey

[Survey 1](#)
[Edit Survey](#)
[Delete Survey](#)

UC 21 – Delete Survey

- The admin can find this module under the Resources tab. Clicking the link reroutes them to a page that gives them the option to edit or delete a survey.

Log In To Edit Survey



Survey

- > [Add Survey](#)
- > [Edit/Delete Survey](#)

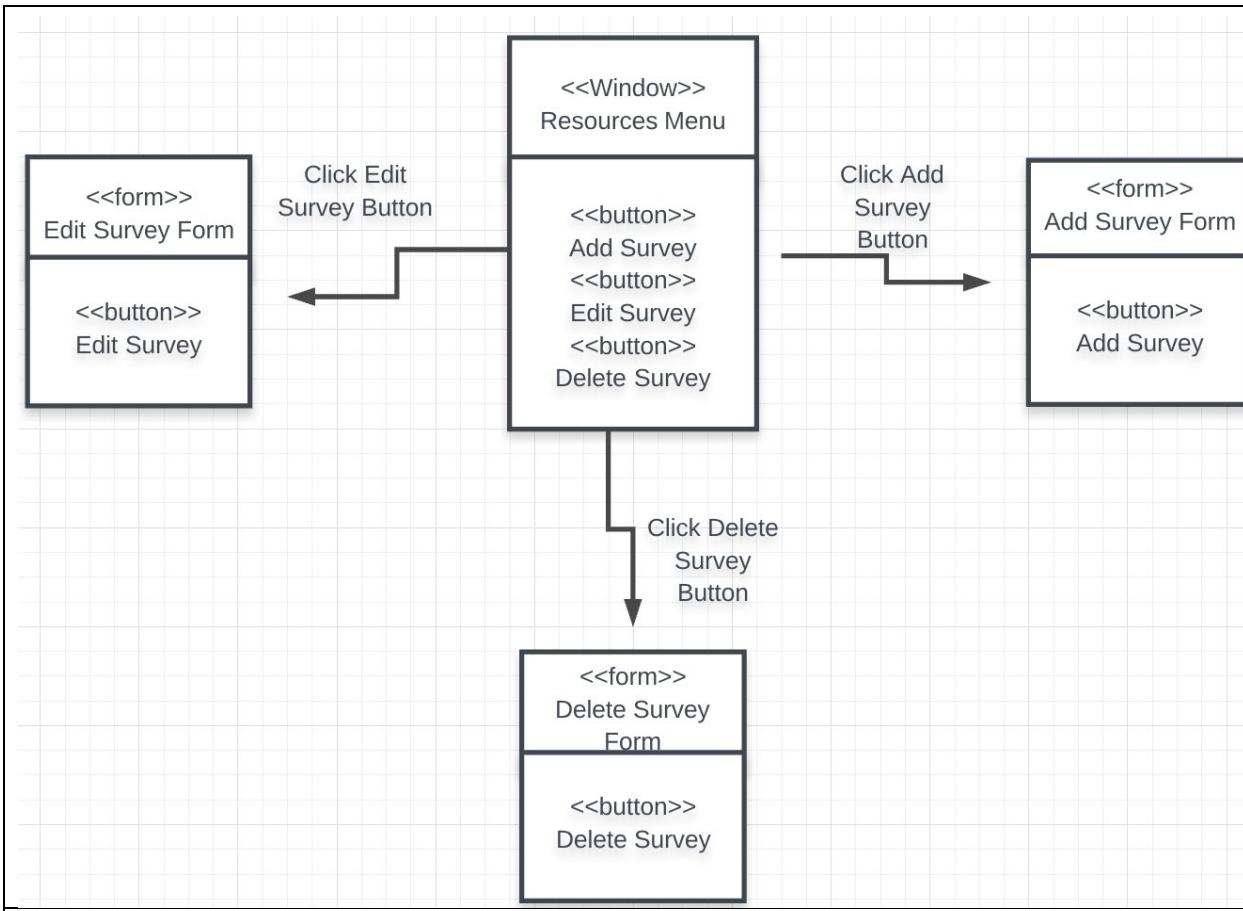
Username:

Password:

Confirm
Cancel

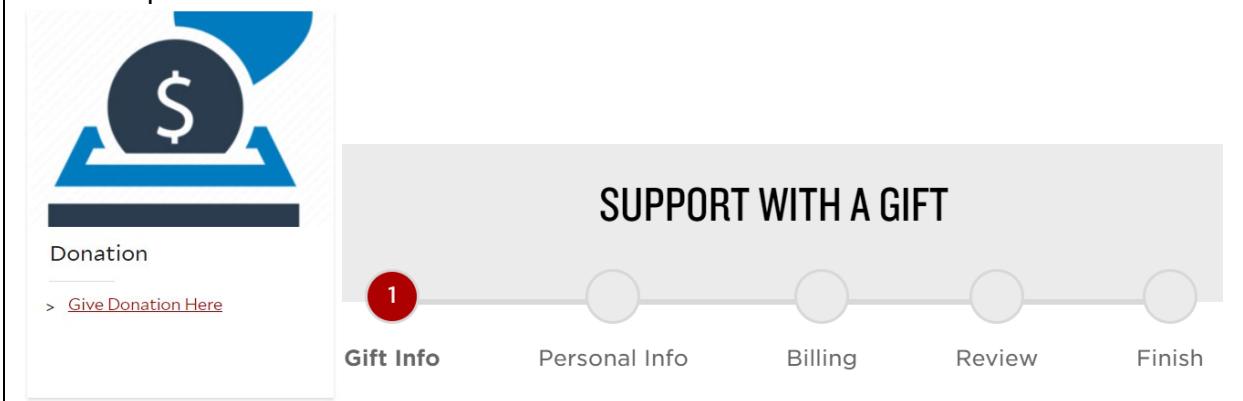
Select To Edit Survey

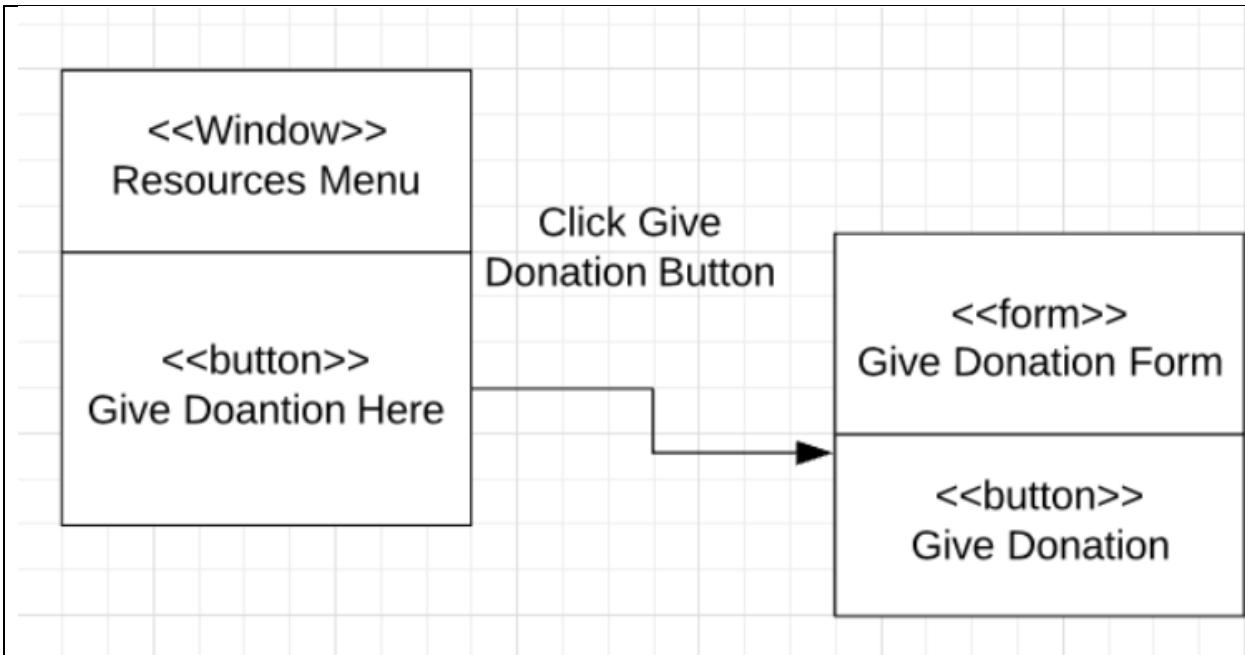
[Survey 1](#)
[Edit Survey](#)
[Delete Survey](#)



UC 29 – Link The Donation Process Directly to UofL Development Departments

- User will be able to donate directly to the university when clicking the donation link found under the resources tab. It will reroute them to the University's development department's website.





UC 3 – Add Weekly Updates to Newsletter

- Admins can find this module under the News and Events tab. After locating the Newsletter module, they will be able to create a newsletter via a form.

The screenshot shows a user interface for adding a newsletter. On the left, there's a sidebar with a newspaper icon labeled 'Newsletter' and links for 'Add weekly updates to Newsletter', 'Delete Newsletter', and 'Edit Newsletter'. The main area has a title 'Add Weekly updates to Newsletter' and a 'Newsletter' input field. Below it are fields for 'Title' (with placeholder 'Enter Title') and 'Author' (with placeholder 'Enter Author'). There's also a large 'Content' area with a text input field. At the bottom right is a 'Submit' button.

UC 4 – Delete Newsletter

- Admins can find this module under the News and Events tab. After locating the Newsletter module, they will be able to delete a newsletter.

Delete Newsletter



Newsletter

- > [Add weekly updates to Newsletter](#)
- > [Delete Newsletter](#)
- > [Edit Newsletter](#)

You are deleting this newsletter

Confirm
Cancel

UC 5 – Edit Newsletter

- Admins can find this module under the News and Events tab. After locating the Newsletter module, they will be able to edit a newsletter.



Newsletter

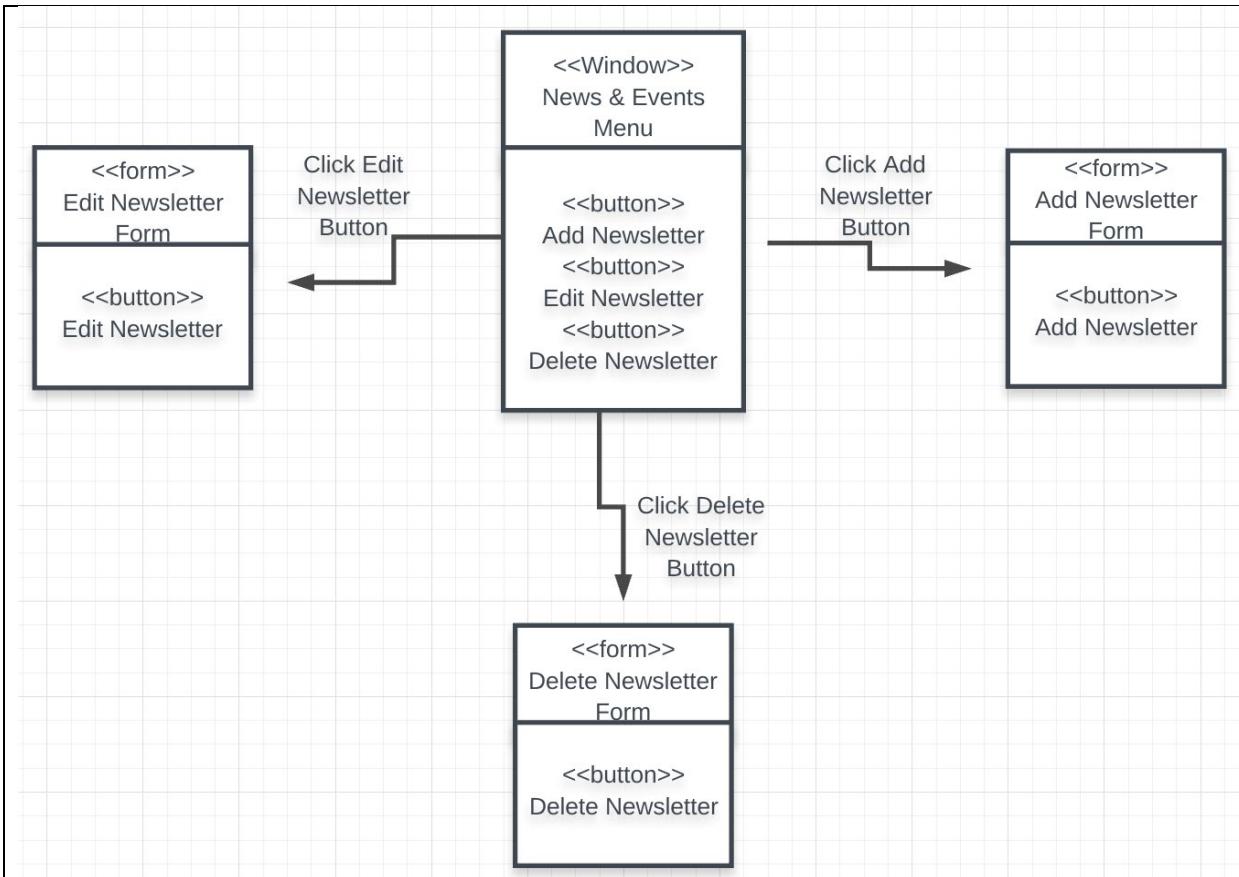
- > [Add weekly updates to Newsletter](#)
- > [Delete Newsletter](#)
- > [Edit Newsletter](#)

Edit Newsletter

Title:

Author:

Content:



UC 26 – Add Event

- The admin can find the Events module under the News and Events tab. Clicking the link reroutes them to a page that gives them the option to create, edit, or delete an event, when New Event is clicked, a form will pop up.

New Event	Edit Event	Delete Event								
 Events > Event Form										
<table border="1"> <tr> <td>Event Name</td> <td>Event Location</td> </tr> <tr> <td>mm/dd/yyyy</td> <td>--:-- --</td> </tr> <tr> <td colspan="2">Events Details</td> </tr> <tr> <td colspan="2" style="text-align: right;">submit</td> </tr> </table>			Event Name	Event Location	mm/dd/yyyy	--:-- --	Events Details		submit	
Event Name	Event Location									
mm/dd/yyyy	--:-- --									
Events Details										
submit										

UC 27 – Edit Event

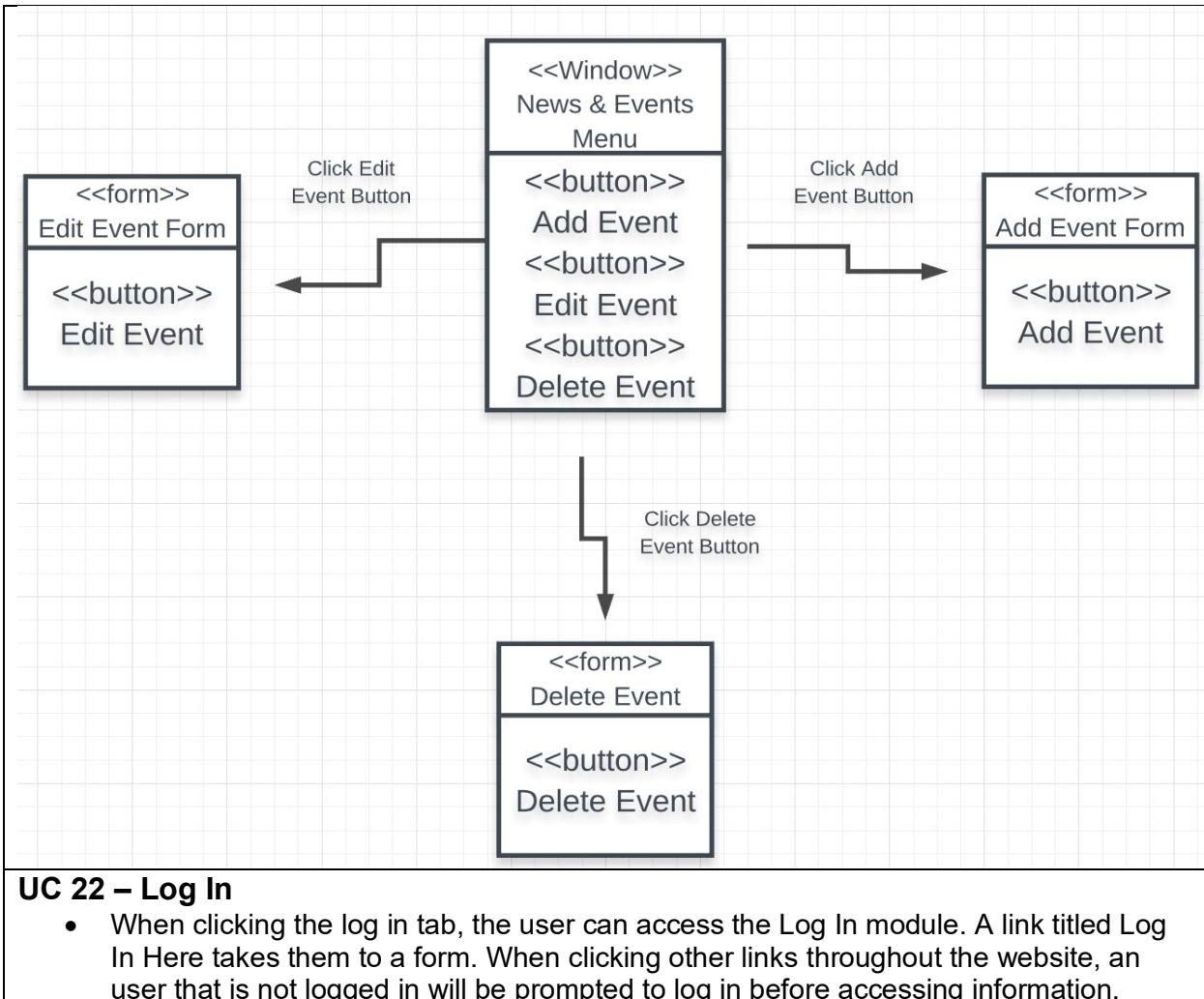
- The admin can find the Events module under the News and Events tab. Clicking the link reroutes them to a page that gives them the option to create, edit, or delete an event, when Edit Event is clicked, a form will pop up.

 Events > Event Form	New Event	Edit Event	Delete Event								
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Event Name</td> <td style="width: 50%;">Event Location</td> </tr> <tr> <td>mm/dd/yyyy</td> <td>--:-- --</td> </tr> <tr> <td colspan="2">Events Details</td> </tr> <tr> <td colspan="2" style="text-align: right;">submit</td> </tr> </table>			Event Name	Event Location	mm/dd/yyyy	--:-- --	Events Details		submit	
Event Name	Event Location										
mm/dd/yyyy	--:-- --										
Events Details											
submit											

UC 28 – Delete Event

- The admin can find the Events module under the News and Events tab. Clicking the link reroutes them to a page that gives them the option to create, edit, or delete an event, when Delete Event is clicked, a form will pop up.

 Events > Event Form	New Event	Edit Event	Delete Event								
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Event Name</td> <td style="width: 50%;">Event Location</td> </tr> <tr> <td>mm/dd/yyyy</td> <td>--:-- --</td> </tr> <tr> <td colspan="2">Events Details</td> </tr> <tr> <td colspan="2" style="text-align: right;">submit</td> </tr> </table>			Event Name	Event Location	mm/dd/yyyy	--:-- --	Events Details		submit	
Event Name	Event Location										
mm/dd/yyyy	--:-- --										
Events Details											
submit											



Login

Login - Research and Innovation

User ID :

Password :

Submit **Cancel**

[Forgot User ID or Password](#)

Log In

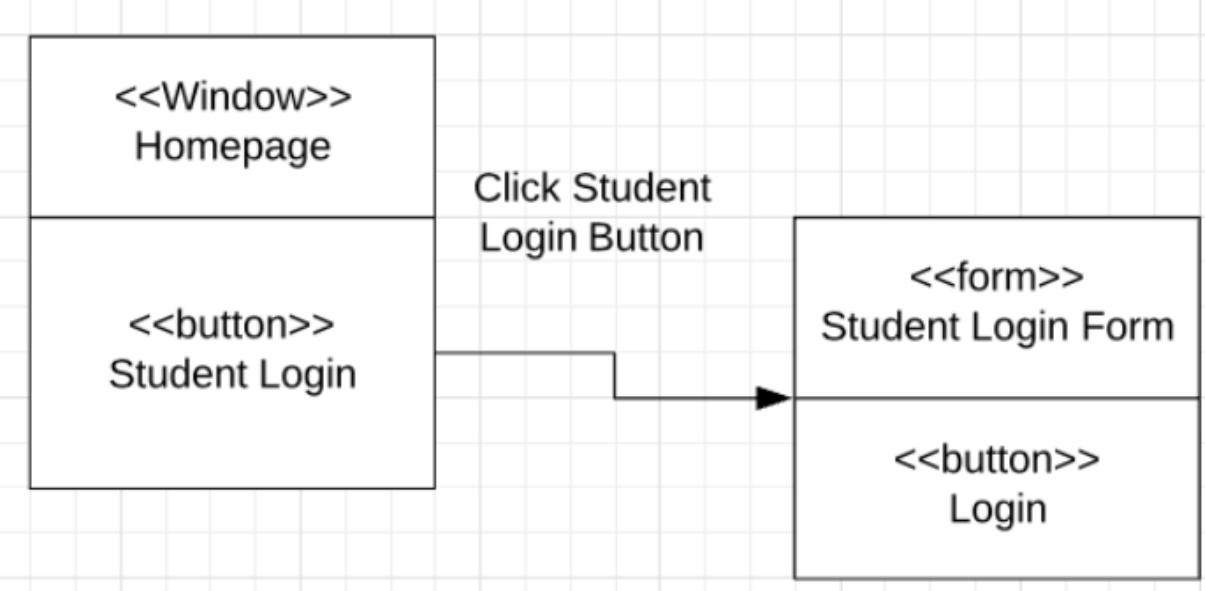
- > [Log In Here](#)
- > [Update Profile](#)

Log In To Create Survey

Username:

Password:

Confirm **Cancel**



UC 25 – Create Profiles

- A researcher will be prompted to create a profile when they log in for the first time, anytime after that they will be able to update it. They can find this functionality in the

Log In module under the Log In tab. They will be able to create a profile to showcase their work.

LOG IN

Log In

[Log In Here](#)
[Update Profile](#)

Insert Picture

My Account

Profile

Name of school :

Current Major :

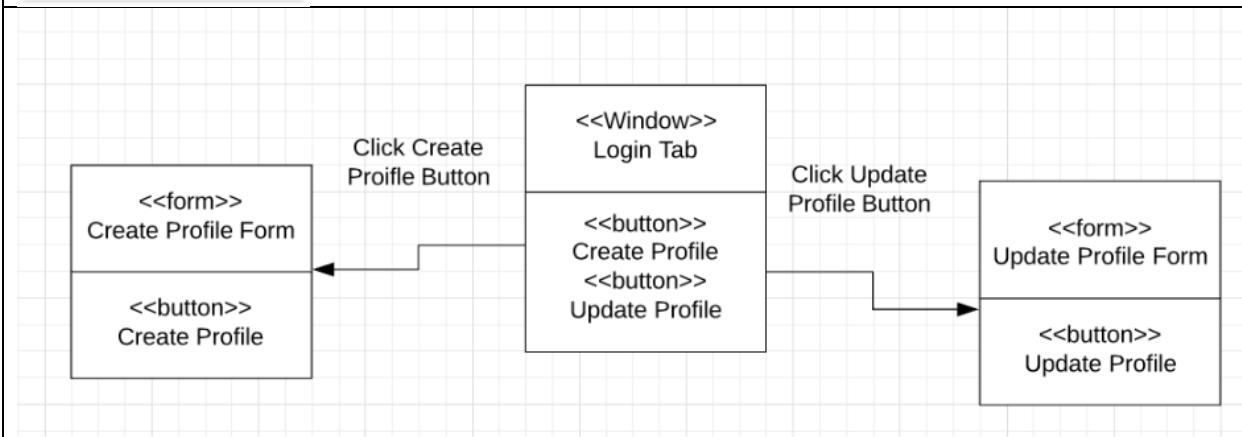
Contact Email :

Enter Full Name :

Graduation Date :

Additional Details :

Save Profile



UC 8 – Modify Grants

- The admin can find this module when logging in. Clicking the link reroutes them to a form that allows them to modify a grant.

ADMINISTRATOR

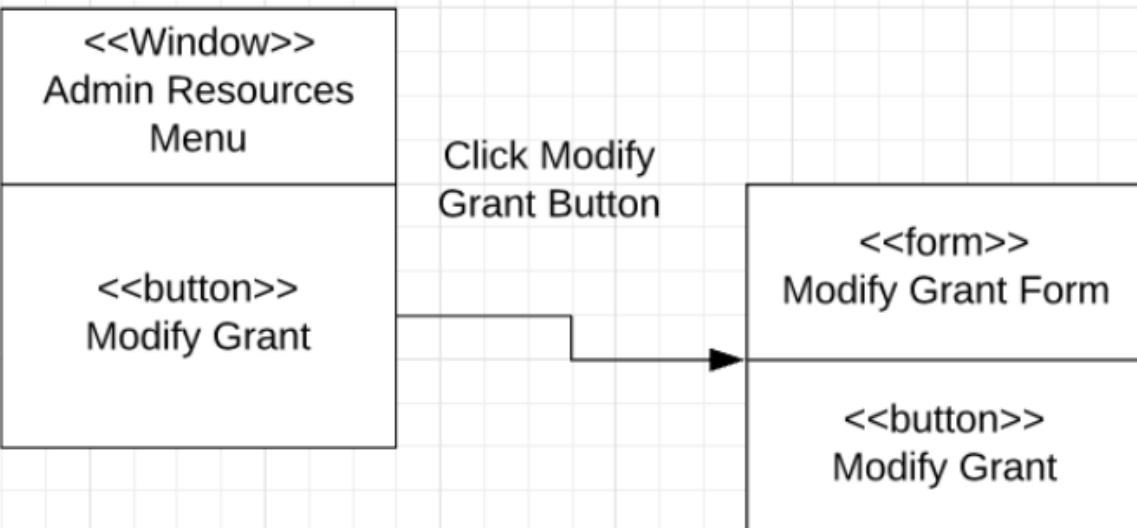
Admin Resources

[Modify Grants](#)
[Backup Data](#)
[Restore Data](#)

Modify Grants

Grant ID	<input type="text"/>	Grant Name	<input type="text"/>
Grant Type	<input type="text"/>	Grant Amount	<input type="text"/>
Concerned Authority	<input type="text"/>		
Grant Detail	<input type="text"/>		

Cancel
Delete



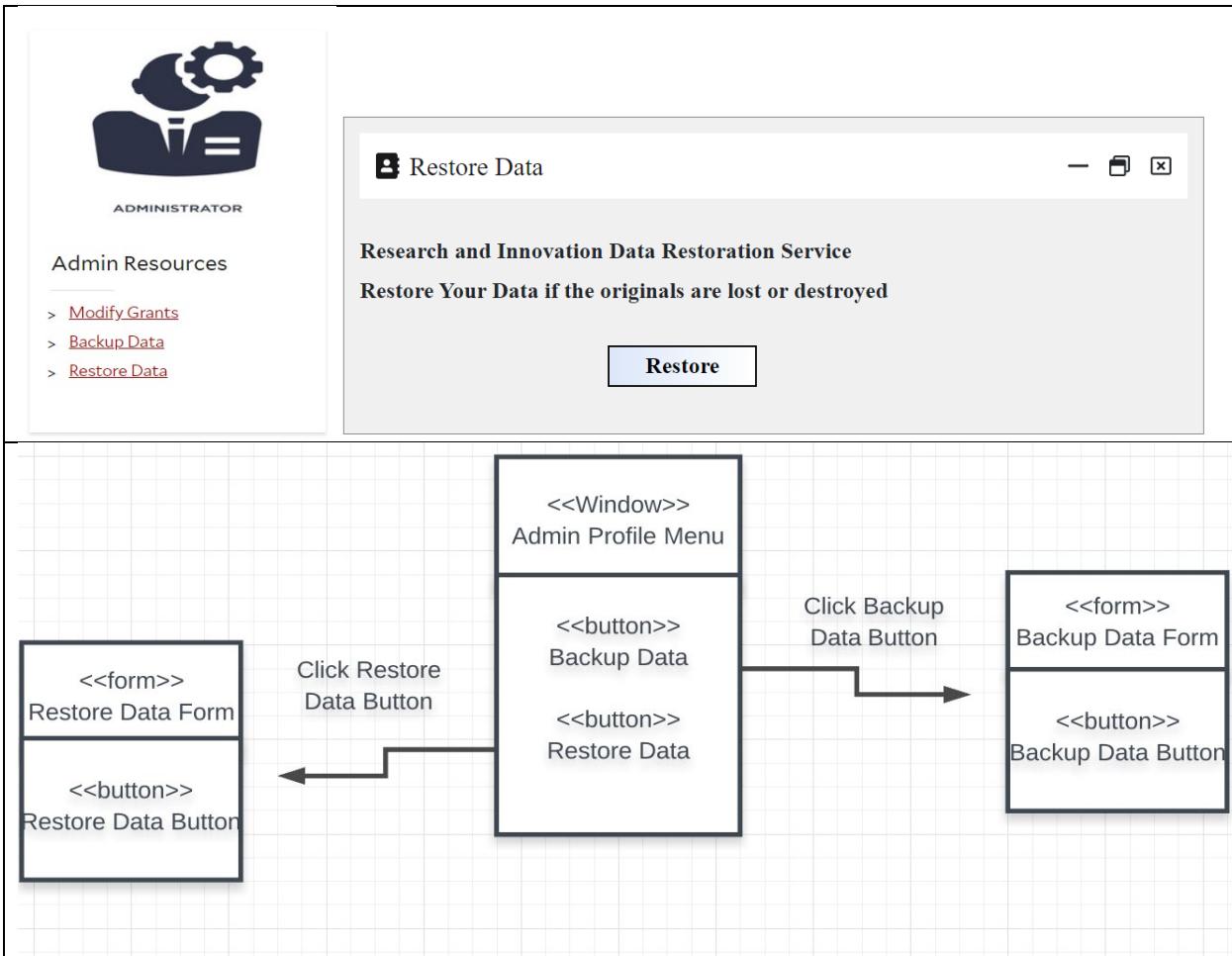
UC 23 – Backup Data

- An admin can access the Admin Resources module under the Log In tab. Clicking the link takes them to a form that will start the backup process.

The screenshot shows the "Admin Resources" module. On the left, there is a sidebar with a user icon and the word "ADMINISTRATOR". Below this, the "Admin Resources" section is expanded, showing three links: "Modify Grants", "Backup Data", and "Restore Data". The "Backup Data" link is highlighted with a red underline. To the right, a new window titled "Backup Data" is open. This window has a header with a close button. The main content area is titled "Research and Innovation Backup Service" and contains the text "Backup Your Data to a drive and restore them if the originals are lost or destroyed". At the bottom of this window is a large blue "Backup" button.

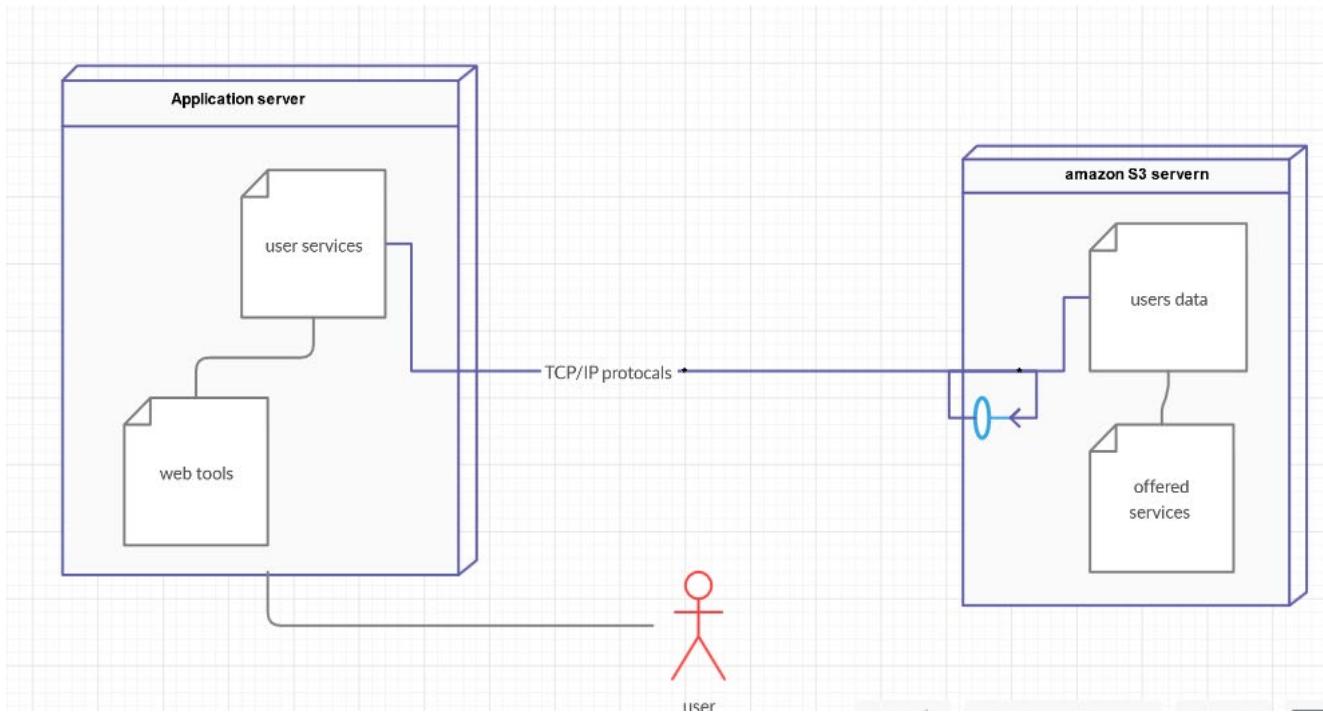
UC 24 – Restore Data

- An admin can access the Admin Resources module under the Log In tab. Clicking the link takes them to a form that will prompt them to start the restoration process by choosing a backup.



9. Physical Architecture Design

- A deployment diagram of the system architecture, presuming server hosting and support is provided by a third party.



The user interacts with the application server to access the services offered by the website. The user data and services data are stored in the database and security server which is Amazon S3 server. TCP/IP protocols are used to provide the communication between the application server and the amazon S3 server.

10. Design Procedures for Security Concerns and Non-Functional Requirements

- Security concerns are necessary in any website, for our research website there is sensitive information such as personal information, grant sums, and research proposal ideas. Other public news and events will also need to be secure from just anyone being able to post. To ensure the security of our data that flows through the website, we will have to have security measures in place. We will discuss those as well as nonfunctional requirements.
- This section will outline the design procedures for security and non-functional requirements. An explanation of the procedures will be written next to it.

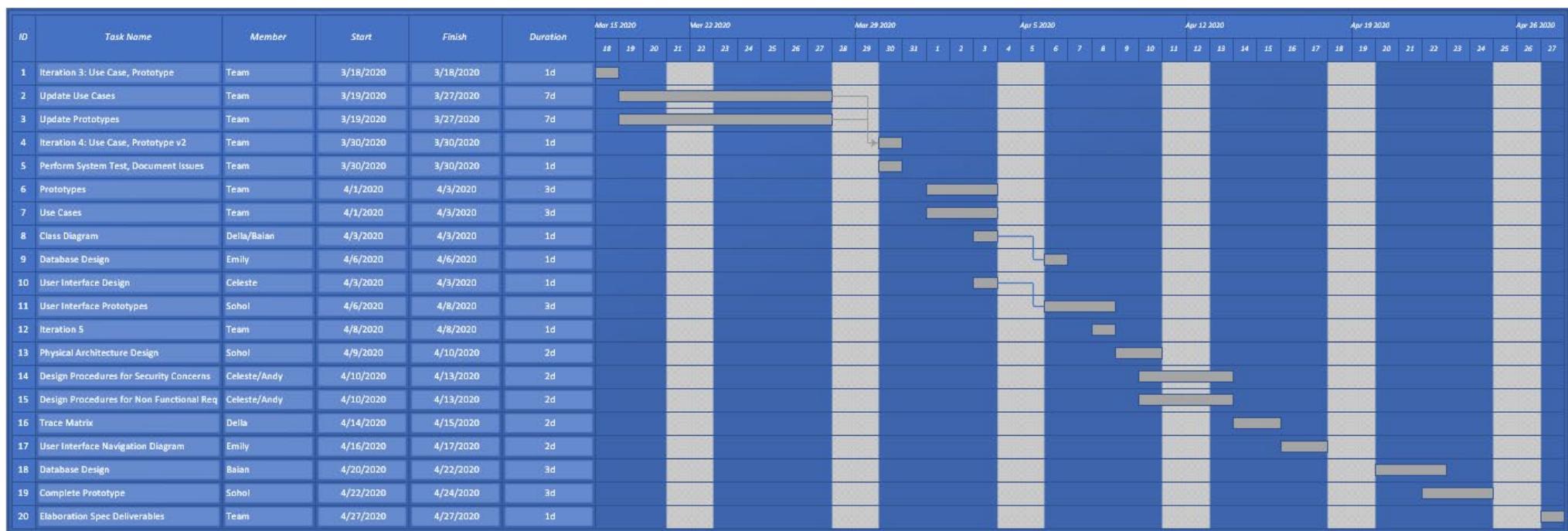
Security Requirements

1. System Value Estimates - This estimates the monetary value of the data in the system and loss of value if there are outages of the system. This will include all the personal data we have on users of our website. This includes students, researchers, and industry partners. This amounts to a lot of data, and is of value for the university.

2. Access Control Requirements - This limits who can access what type of data. This ensures that only certain people can modify data. Throughout our website administrators have authorization to create, modify, or delete certain files such as surveys, events, grants etc. Students will also have certain access to their profiles and proposals they submit. Controlling who can access data is important in keeping our users information safe.
3. Encryption and Authentication Requirements - Defines what data will be encrypted and where and whether authentication will be needed to access. There will be two measures for user logins for password requirements as well as a backup email or phone number to ensure the user is real.
4. Virus Control Requirements - Requirements to control the spread of viruses. Checking all files uploaded on our website, such as grant and proposal submission for viruses will be a measure to control viruses from entering our website. Other firewalls and measures will be put in place as well.
5. Availability/Reliability Requirement - The system will be cloud based on thin and thicker client servers. It will be available to users with logins.
6. Payment Security - Our link to donations will be available but actual payments will be done through iModules platform. This data will follow the payment security standards and encryption processes.
7. Usability- Improve user interface design. Implement fixes for any glitches or not smooth website flow.
8. Speed requirements - How fast a system should operate. Stay below seven seconds per page.

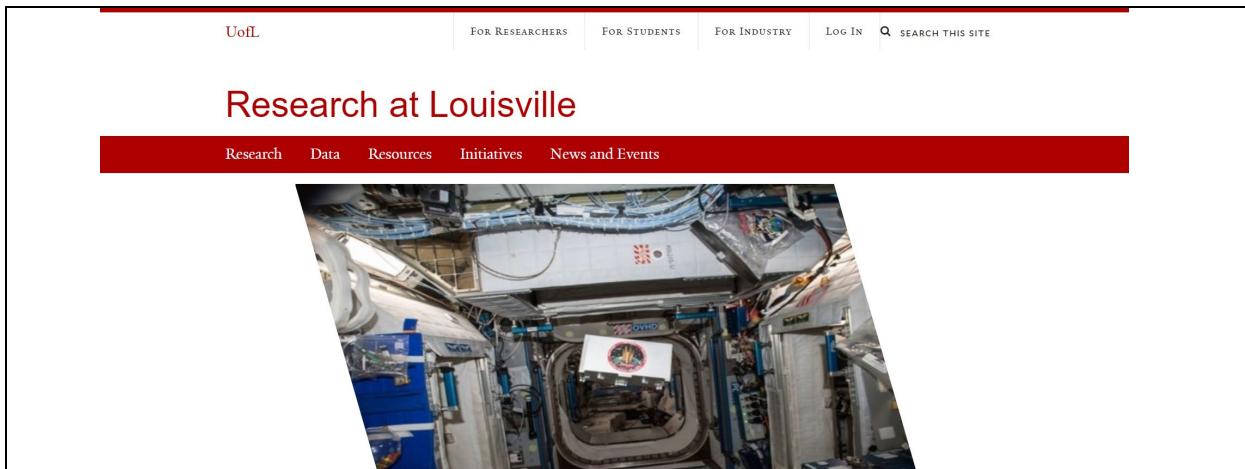
11. Gantt Chart

- A Gantt chart is a type of bar chart that illustrates a project schedule. This chart lists the tasks to be performed on the vertical axis, and time intervals on the horizontal axis. The width of the horizontal bars in the graph shows the duration of each activity.



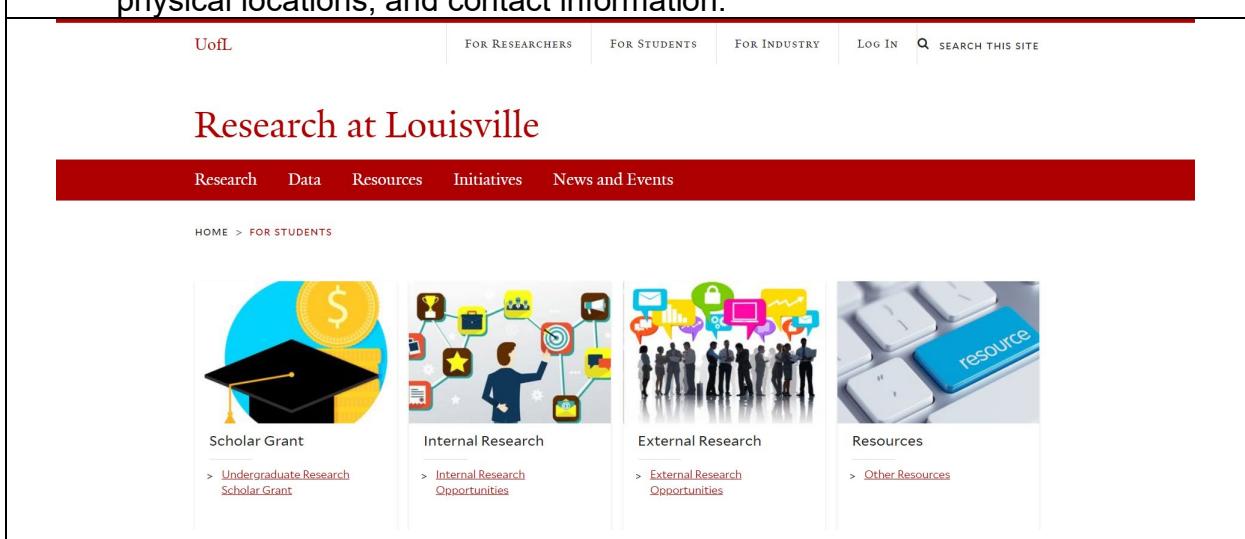
12. Elaboration Spec Prototype

- A mock-up/demo of what the website will look like when it goes live. A fully functional HTML website that realizes all of the use cases presented in previous iterations.
- Link: <http://pictureintext.net/pro/>



Home Page

- The home page provides four branches for different types of users, it directs them to pages with unique and relevant information.
- The search function helps users search for information they need across the entire website.
- On the bottom, it links the users to Research Office's social media accounts, physical locations, and contact information.



For Student Page

- The page is dedicated to the students and provides them with information about undergraduate research scholar grants, internal and external research opportunities, and other resources.