

## **ERP2: Project Plan**

### **ERP2 Team Members**

Terence Berry  
Corey Immke  
Connie McClung  
Alexander Yfrainmov

### **Introduction**

The ERP2 Team will create a web-based Employee Recognition portal that allows users to create and personalize Employee Award certificates, which can then be emailed to recipients. The portal will also include functionality for admin users to manage general user accounts and run business intelligence reporting. Data for the portal will be maintained in a relational database. As a team, we do have some experience with databases and website development. We will be pushing our knowledge as a team to understand emails, LaTeX, and more advanced web development techniques.

### **Our Client**

General users of our portal will be supervisors who wish to create recognition awards for their employees. Supervisors will be able to choose from at least two award types, generate award certificate documents, and send the awards to employees via email. Supervisors will want the ability to view the history of awards they have issued, and to delete the records of awards issued. In addition, portal administrators will access the portal to manage user accounts and perform business intelligence reporting.

### **User Perspective**

There are two main user types: admin and regular users. Either user will navigate to the employee recognition portal and find a login screen and website logo. This login form takes a username and password as input. If the user forgot their password, they can use the “Forgot Password” option to recover a lost password. An email will be sent to them so they can create a new password. After the user logs in, the admin and regular users go to separate dashboards, which have been tailored by account type.

### Admin User

After login, admin users are navigated to their dashboard, where they can add/edit/create regular and admin user accounts. They can also create and run reports based off of the awards created by the regular users. They can view graphs and export search results in .csv format.

### Regular User

After login, regular users (i.e. supervisors who create awards for employees) are navigated to their dashboard, where they have the option to create new awards and delete awards previously issued. They will be able to choose from at least two different award types and enter in the recipient's name, award date, email address and other information needed to personalize the award. They will be able to preview the award and then click send to email the award to the recipient's email address.

From any location in the portal, both user types will be able to edit their own account information and logout.

### **Requirements**

- Create a login page
  - Fields including:
    - Username (which is their email address)
    - Password
  - Recover password option
- Create two different user types
  - Admin User
    - Properties including:
      - An email address (the username)
      - A password
      - The name of the user
      - The timestamp of when the account was created
    - Able to do the following:
      - Should not be able to create awards.
      - Change his or her name.
      - Change password.
      - Add/edit/delete regular users (who can create awards).
      - Add/edit/delete admin users (who cannot create awards).
      - Perform Business Intelligence reporting operations.
      - Export the above queries as a CSV file and/or display the results on-screen. The on-screen reports should include appropriate graphical charts, such as those provided by Google Charts.
  - Regular User
    - Properties including:
      - An email address (the username)
      - A password
      - The name of the user
      - The timestamp of when the account was created
      - The signature of the user, stored as an image file
    - Able to do the following
      - Create two award types.

- Search for and list Past Award Entries made by this User, with search and filtering allowed on:
    - Employee Name
    - Department
    - Region
    - Date Range
  - Email award to recipient.
  - Change his or her name.
  - Change password.
  - Upload signature image file or freehand their signature.
  - Delete from the system awards that this user has previously given.
    - Search results can be viewed onscreen with the ability to drill into individual records for deletion
- Store user data in SQL database.
- Regular users can create awards which include the following:
  - The type of award being given
  - The name of the person getting the award
  - The email address of the person getting the award
  - An index in to the table of users, indicating which user account created the award
  - A time and date chosen that allows the user to specify when the award was granted
  - Employee Department
  - Employee Region
- Records of created awards will be saved in the SQL database and associated with the user who created them.
- Once the award has been created, the system should email a PDF certificate to the person getting the award, that has been custom generated using LaTeX, with the person's name, date, and the name of the user who authorized the award, along with the authorizing user's signature image.

### **Initial Plan for Structure**

Our initial plan is that the program will be structured as a dynamic web application supported by a relational database. Data will be stored in a MySQL database containing tables for at least the following entities:

- Users
- Awards
- Certificates (use to specify the award and hold its background image to be used with LaTeX)
- Regions
- Departments

The site will be implemented as a web app using Node.js and Express, with supporting scripts, image files, and stylesheets stored in a file structure and hosted on one of the OSU flip servers.

Pages that pull from the database will be dynamically generated and updated in Node/Express using Javascript with an API in front of the MySQL database.

Parameters for personalizing certificates will be saved as Awards object records in the database and combined with pre-written LaTeX document templates for each award type, to render a LaTeX certificate for previewing, printing, and emailing.

Password Recovery functionality will use the existing database tables. Username or email can be used for login, so a “Forgot Username” option will not be needed. A “Forgot Password” option will reset the user account password with a temporary password to be emailed to the user’s email and a page requiring the temporary password to be changed will load at first login. Passwords will be stored in a hashed format including the use of a salt for increased security. A service or logic will be built to handle the hashing of passwords.

Once the user is signed in, we will use a session table in the database as well as browser cookies to help track the user that is logged in and verify they are able to use the specific pages. The session table will have an expiration datetime set to assist with management and not allow indefinite sessions.

### **Technologies**

We expect to use the following languages, libraries, APIs, dev Tools, servers and systems, although this list may change as work progresses:

- Javascript
- HTML
- CSS
- MySQL
- Node.js
- Express
- Handlebars
- Tex/LaTeX
- OSU Flip servers
- Visual Studio Code
- Visual Studio
- GitHub
- Postman (for API testing)
- Docker

### **Team Responsibilities**

Report	Due	Assignee to Submit
Project Plan	4/14/2019	All Team Members

Week 4 Progress Report	4/28/2019	All Team Members
Week 5 Progress Report	5/5/2019	All Team Members
Mid-Point Project Check	5/12/2019	All team members will participate but one team member will submit the assignment.
Week 7 Progress Report	5/19/2019	All Team Members
Week 8 Progress Report	5/26/2019	All Team Members
Week 9 Progress Report	6/2/2019	All Team Members
Final Project	6/9/2019	All team members will participate but one team member will submit the assignment.
Poster	6/9/2019	All team members will participate but one team member will submit the assignment.
Demonstrate	6/9/2019	All team members will participate but one team member will submit the assignment.

### Terence Berry

Tasks	Estimated Hours
<b>Week 3:</b> <ul style="list-style-type: none"> <li>• Create website framework. <ul style="list-style-type: none"> <li>○ Login page</li> <li>○ Admin side</li> <li>○ Normal User side</li> </ul> </li> <li>• Setup Github account to share with everyone in group.</li> </ul>	20
<b>Week 4:</b> <ul style="list-style-type: none"> <li>• Admin side of the website. <ul style="list-style-type: none"> <li>○ Create normal and admin users.</li> </ul> </li> </ul>	15

<b>Week 5:</b> <ul style="list-style-type: none"> <li>• Admin side of the website. <ul style="list-style-type: none"> <li>◦ Add being able to edit and delete normal and admin users.</li> </ul> </li> <li>• All users <ul style="list-style-type: none"> <li>◦ Add functionality to have any user edit their profile and logout.</li> </ul> </li> </ul>	15
<b>Week 6:</b> <ul style="list-style-type: none"> <li>• Normal user side of the website. <ul style="list-style-type: none"> <li>◦ Able to create two award types and preview the pdf (sync with Connie).</li> </ul> </li> <li>• Assist with mid-point report.</li> </ul>	10
<b>Week 7:</b> <ul style="list-style-type: none"> <li>• Normal user side of the website. <ul style="list-style-type: none"> <li>◦ Create a searchable history of awards that the user can delete.</li> </ul> </li> </ul>	15
<b>Week 8:</b> <ul style="list-style-type: none"> <li>• Change look and feel of the website with CSS and javascript.</li> </ul>	10
<b>Week 9:</b> <ul style="list-style-type: none"> <li>• Change look and feel of the website with CSS and javascript.</li> </ul>	10
<b>Week 10:</b> <ul style="list-style-type: none"> <li>• Verify everything and improve user interface.</li> <li>• Work on report/poster/presentation content with team as needed.</li> </ul>	5
	<b>Total Hours: 100</b>

#### Connie McClung

Tasks	Estimated Hours
<b>Week 3:</b> <ul style="list-style-type: none"> <li>• Draft functional requirements for Award creation interface</li> <li>• Mock up screens and data flow between DB, interface, and award</li> </ul>	15

<pre> preview • Prototype simple LaTeX Award with db field placement • Research javascript/node/MySQL capabilities/libraries for LaTeX document creation </pre>	
<pre> Week 4: • Continue Research on javascript/node/MySQL capabilities/libraries for LaTeX document creation • Create simple HTML screen for Award creation testing • Create MySQL queries and statements for personalizing award and saving award record • Incorporate MySQL into Node/Javascript to extract and return db information • Work on using HTML/javascript/node to generate simple LaTeX document </pre>	15
<pre> Week 5: • Incorporate db query results into dynamically generated LaTeX document • Work on print preview and email award functionality • Increase graphical complexity of LaTeX document </pre>	15
<pre> Week 6: • Review database interactions, confirm all queries and statements needed for desired award functionality are present • Update interface screen(s) and database interactions if needed • Increase graphical complexity of LaTeX document and prototype 2nd award type • Assist with mid-point report </pre>	15

<b>Week 7:</b> <ul style="list-style-type: none"> <li>• Increase graphical complexity of 2nd award type</li> <li>• Write test cases for award creation, generation, transmission functionality</li> <li>• QA Testing on award generation and interface functionality</li> <li>• Work on save/report/delete functionality for previously generated awards</li> </ul>	12
<b>Week 8:</b> <ul style="list-style-type: none"> <li>• Add 3rd award type if feasible</li> <li>• Tweak award graphical appearance</li> <li>• QA other areas of application</li> </ul>	12
<b>Week 9:</b> <ul style="list-style-type: none"> <li>• Bug fixes/improvements on Award functionality</li> <li>• Work on report/poster/presentation content with team as needed</li> </ul>	12
<b>Week 10:</b> <ul style="list-style-type: none"> <li>• QA, bug fix assistance throughout app</li> <li>• Work on report/poster/presentation content with team as needed</li> </ul>	12
	<b>Total Hours: 108</b>

#### Corey Immke

Tasks	Estimated Hours
<b>Week 3:</b> <b>Build database</b> <ul style="list-style-type: none"> <li>• Create tables</li> <li>• Create roles for different users</li> <li>• Generate random data to fill in tables for testing and demo</li> </ul> <b>Create First Pass of API endpoints</b>	15
<b>Week 4:</b>	15



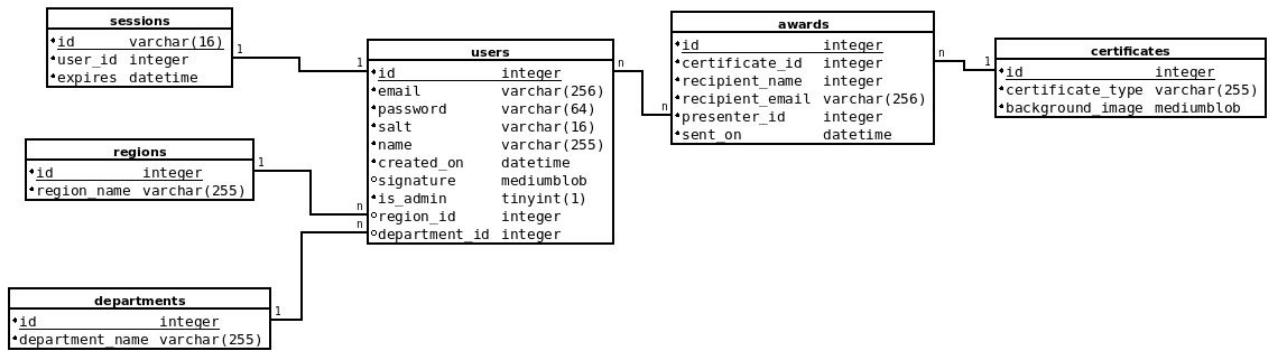
<b>Build login API</b> <b>Build authentication service</b> <ul style="list-style-type: none"> <li>• Password hashing</li> <li>• Password salt creation</li> <li>• Success/Error response</li> </ul>	
<b>Week 5:</b> <b>Session authentication service</b> <ul style="list-style-type: none"> <li>• Session creation from successful login</li> <li>• Cookie response to user</li> <li>• Cookie validation against session table</li> <li>• Cookie expiration handler</li> </ul>	15
<b>Week 6:</b> <b>Build users API</b> <b>Assist with midpoint docs including API documentation</b>	12
<b>Week 7:</b> <b>Password API</b> <b>Password Recovery Service</b>	15
<b>Week 8:</b> <b>Build awards API</b> <b>Build regions API</b> <b>Build departments API</b>	12
<b>Week 9:</b> <b>Finalize API documentation</b> <b>Finalize API testing scripts</b> <b>Help with Poster</b>	10
<b>Week 10:</b> <b>Final Report Input</b> <b>Assist with demo</b> <b>Help with deployment of final application</b>	10
	<b>Total Hours: 104</b>

**Alexander Yfraimov**

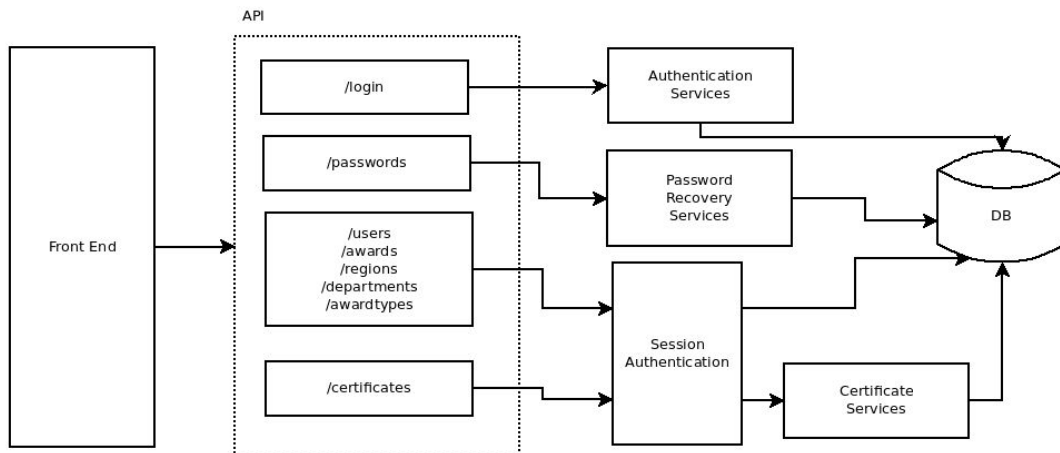
<b>Tasks</b>	<b>Estimated Hours</b>
<b>Week 3:</b> <b>User Side:</b> <ul style="list-style-type: none"> <li>- Create Signature Upload Page</li> </ul>	10

- Allow signature image upload	
<b>Week 4:</b> <b>User Side:</b> <ul style="list-style-type: none"> <li>- Allow free hand draw of signature</li> </ul>	10
<b>Week 5:</b> <b>Admin Side:</b> <ul style="list-style-type: none"> <li>- Begin researching Google Charts</li> <li>- Come up with definite structure for the Business Intelligence reporting operations</li> </ul>	10
<b>Week 6:</b> <ul style="list-style-type: none"> <li>• Assist with mid-point report.</li> <li>• Create prototype for the reporting page</li> </ul>	10
<b>Week 7:</b> <b>Admin Side:</b> <ul style="list-style-type: none"> <li>- Use Google Charts to generate the appropriate graph for Admin queries</li> <li>- Finalize the Admin report page</li> </ul>	15
<b>Week 8:</b> <b>User Side:</b> <ul style="list-style-type: none"> <li>- Create comprehensive help page describing all possible user side interactions</li> <li>- Implement a search by keyword section on the user side help page</li> </ul>	20
<b>Week 9:</b> <b>Admin Side:</b> <ul style="list-style-type: none"> <li>- Create comprehensive “help” page explaining admin side interactions</li> <li>- Implement a search by keyword section on the admin side help page</li> </ul>	15
<b>Week 10:</b> <ul style="list-style-type: none"> <li>• Work on report/poster/presentation content with team as needed.</li> </ul>	10
	<b>Total Hours: 100</b>

## ER Diagram for database



## Basic Site Architecture



Website Flow

Homepage

ACME

Sign In

Username

Password

SIGN IN

Forgot password?

Preview Award

Create Award

History

ACME

Edit Profile

Logout

Preview

BEST  
EMPLOYEE  
OF THE MONTH  
March 2020

Rhythm clap!  
The pace is right!  
Quality - excellent!

Developed by  
Peter Johnson

SHIBAR

Send to Employee

Copyright Acme

Normal User Initial Screen

Create Award

History

ACME

Edit Profile

Logout

Wanting to Recognize an Employee?

Click Here

Copyright Acme

History

Create Award

History

ACME

Edit Profile

Logout

Employee NAME	Department	Award Type	Date	PDF of Award
Name Last name	Company name	Lorem ipsum	Lorem ipsum	
Name Last name	Company name	Lorem ipsum	Lorem ipsum	
Name Last name	Company name	Lorem ipsum	Lorem ipsum	
Name Last name	Company name	Lorem ipsum	Lorem ipsum	
Name Last name	Company name	Lorem ipsum	Lorem ipsum	
Name Last name	Company name	Lorem ipsum	Lorem ipsum	

Copyright Acme

Create Award

Create Award

History

ACME

Edit Profile

Logout

Create Award

Award Type

Employee Name

Employee Email

Department

Create

Copyright Acme

Admin Initial Screen

User Management

Reporting

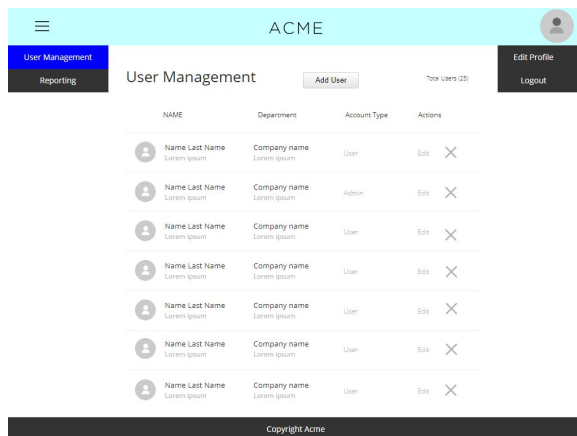
ACME

Edit Profile

Logout

Copyright Acme

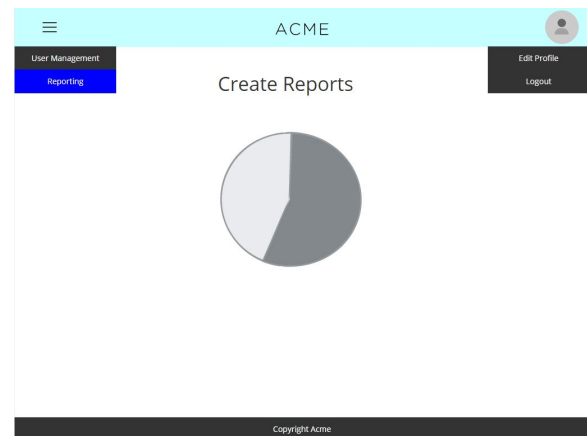
## User Management



The screenshot shows a web application interface for 'ACME'. The top navigation bar is light blue with a hamburger menu icon on the left, the text 'ACME' in the center, and a user profile icon on the right. Below the navigation bar, there are two tabs: 'User Management' (active) and 'Reporting'. The main content area is titled 'User Management' and includes an 'Add User' button and a 'Total Users (21)' indicator. A table lists user details with columns for NAME, Department, Account Type, and Actions. The footer contains the text 'Copyright Acme'.

NAME	Department	Account Type	Actions
Name Last Name Lorem ipsum	Company name Lorem ipsum	User	Edit ✕
Name Last Name Lorem ipsum	Company name Lorem ipsum	Admin	Edit ✕
Name Last Name Lorem ipsum	Company name Lorem ipsum	User	Edit ✕
Name Last Name Lorem ipsum	Company name Lorem ipsum	User	Edit ✕
Name Last Name Lorem ipsum	Company name Lorem ipsum	User	Edit ✕
Name Last Name Lorem ipsum	Company name Lorem ipsum	User	Edit ✕
Name Last Name Lorem ipsum	Company name Lorem ipsum	User	Edit ✕

## Reporting



## Examples of Recognition Award Layout Components

(actual award appearance will be dependent on LaTeX constraints):



Source: dreamstime.com



Source: depositphotos.com

## Conclusion

The ERP2 team hope to create a very easy-to-use and functional employee recognition portal. With 4 group members, the project should be 400 or more hours to complete. There is a lot of

research that needs to occur with LaTeX development of the awards and the use of emails. We will be adjusting time estimates and tasks as needed.