

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
THE UNIVERSITY OF TEXAS AT ARLINGTON**

**PROJECT CHARTER
CSE 4316: SENIOR DESIGN I
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**SCHOOL OF SOCIAL WORKS TEAM
EASY PLACEMENT**

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CONTENTS

- 1 Problem Statement** 6
- 2 Methodology** 6
- 3 Value Proposition** 6
- 4 Development Milestones** 6
- 5 Background** 8
- 6 Related Work** 8
- 7 System Overview** 8
- 8 Roles & Responsibilities** 9
- 9 Cost Proposal** 10
 - 9.1 Preliminary Budget 10
 - 9.2 Current & Pending Support 10
- 10 Facilities & Equipment** 10
- 11 Assumptions** 11
- 12 Constraints** 11
- 13 Risks** 12
- 14 Documentation & Reporting** 12
 - 14.1 Major Documentation Deliverables 12
 - 14.1.1 Project Charter 12
 - 14.1.2 System Requirements Specification 12
 - 14.1.3 Architectural Design Specification 13
 - 14.2 Recurring Sprint Items 13
 - 14.2.1 Product Backlog 13
 - 14.2.2 Sprint Planning 13
 - 14.2.3 Sprint Goal 13
 - 14.2.4 Sprint Backlog 13
 - 14.2.5 Task Breakdown 13
 - 14.2.6 Sprint Burn Down Charts 14
 - 14.2.7 Sprint Retrospective 14
 - 14.2.8 Individual Status Reports 14
 - 14.2.9 Engineering Notebooks 15
 - 14.3 Closeout Materials 15
 - 14.3.1 System Prototype 15
 - 14.3.2 Project Poster 15
 - 14.3.3 Web Page 15
 - 14.3.4 Demo Video 15

14.3.5 Source Code	15
14.3.6 Source Code Documentation	15
14.3.7 Hardware Schematics	16
14.3.8 CAD files	16
14.3.9 Installation Scripts	16
14.3.10 User Manual	16

LIST OF FIGURES

1 Easy Placement Sample Burndown Chart 14

1 PROBLEM STATEMENT

The current system used known as smart placement is used to map a student with a different third-party organization. This mapping system was supposed to show the matching organization depending upon the student's need but the system has low accuracy. The current system does not provide the detail of the student requirement completion for the placement. An employee or administrator has to check manually in mymav. The display of the students and organization contains lots of the unwanted info displayed which should also be customized and should be more user-friendly for the data view. The current system requires a lot of work for a single task like switching multiple tabs. In the current system, third-party companies also have so difficulties understanding how to use the system. It is difficult for them to get connected to students.

2 METHODOLOGY

In this project, we are building a Web-App. The students in the School of Social Work require doing fieldwork placements in order to graduate. We are going to make a system that will help in the placement process of those students. The current system used by the School of Social Work "**InPlace smart placement solution**" is technically broken. It is tough to navigate, and it includes too much redundant information that is not relevant to the user.

Therefore, our system will only include the information needed by the user and will require the minimum amount of clicks to get a task done. So, our team will build a Web-App that will mitigate the problem by implementing a user-friendly interface. For this semester, we are working to get a basic demo of this project to show our progress to the customer.

The primary plan is to gather as much information as possible from the customer. We will use Software Requirements Specification(SRS) to collect most of the customer requirements. Then, our team will conduct several meetings with the customer to decide what cloud service to work with. We have two types of cloud platforms to choose from - Amazon AWS and MS Azure. Using these cloud services, customers can easily access required data and navigate smoothly and efficiently. Additionally, the customer wants us to implement MyMav Integration for the Web-App so that they can easily access students's information in one place.

3 VALUE PROPOSITION

Easy Placement is an easy to use website built for the School of Social Work that helps:

- Students choose the best place to work during placement
- Advisors navigate the complex method of placing students in the right work area with ease and least amount of clicks
- Agencies find students that best fit their program
- Administrators to log all the required information and present those information when needed

4 DEVELOPMENT MILESTONES

Here is the list of milestone team has decided for the development of the project.

- Project Charter first draft - February 2022
- System Requirements Specification - March 2022
- Architectural Design Specification - April 2022

- Demonstration of user authentication - April 2022
- Detailed Design Specification - May 2022
- Demonstration of database design - June Year
- Demonstration of <feature To be decided> - June 2022
- CoE Innovation Day poster presentation - June 2022
- Demonstration of <feature To be decided> - July 2022
- Final Project Demonstration - August 2022

5 BACKGROUND

Constraints are limitations imposed on the project, such as the limitation of cost, schedule, or resources, and you have to work within the boundaries restricted by these constraints. All projects have constraints, which are defined and identified at the beginning of the project.

Constraints are outside of your control. They are imposed upon you by your client, organization, government regulations, availability of resources, etc. Occasionally, identified constraints turn out to be false. This is often beneficial to the development team, since it removes items that could potentially affect progress.

This section should contain a list of at least 5 of the most critical constraints related to your project. For example:

The following list contains key constraints related to the implementation and testing of the project.

- Final prototype demonstration must be completed by May 1st, 20XX
- The customer will provide no more than two maintenance personnel to assist in on-site installation
- Customer installation site will only be accessible by development team during normal business hours
- Total development costs must not exceed \$800
- All data obtained from customer site must be reviewed and approved for release by the Information Security Office prior to being copied to any internet connected storage medium

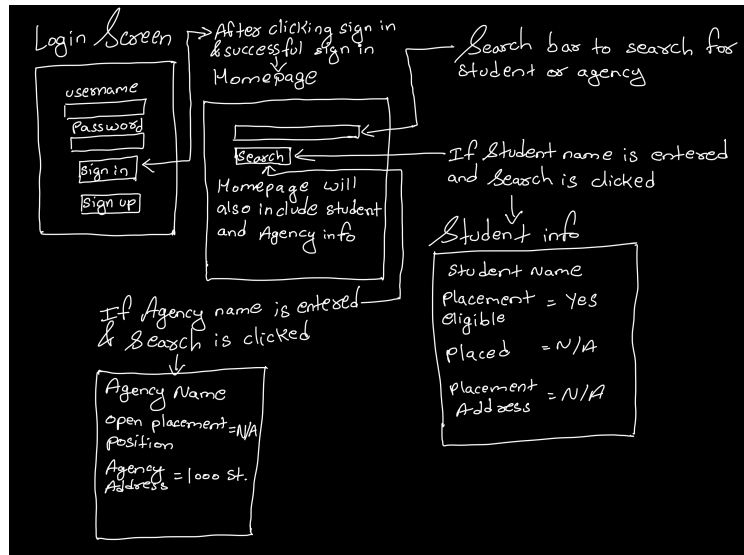
6 RELATED WORK

We are using ReactJS for the frontend development and MYSQL for the database services. Our server and other backend services will be Azure. Inplace is the current website that the School of social work uses but according to the advisers, inplace is not user friendly [1]. So, Our website will be user friendly and easy to use for all the users. We will achieve this by researching more into Bootstrap to make our website look good and pleasant on the eyes with minimal clutter. In place also costs money for the university. Ours will be free for the university to use.

7 SYSTEM OVERVIEW

Since we are just starting to work on the project, we have not been able to get a proper document with all the requirements. So, at the moment we only have a high level view of how the website will look like. In the above diagram, we have a login screen, homepage, student information page and an agency information page. It is not a look into the whole web page because there will be more requirements and the diagram will keep on changing as we add and remove things. Below is a description of how we think the website will work:

- At first, the website will load a login screen. There will be four types of users who can log into the website, students, advisors, agencies and administrators. We will most likely be working on the advisors section.
- After a successful login, the homepage will be loaded dynamically according to the user roles.
- Homepage will have a search bar where we can search for student and agency information with a search button below it.



- If the student name is entered and search is clicked, a new page will load with the student information like student name, placement eligibility, etc.
- If the agency name is entered and search is clicked, a new page will load with the agency information like agency name, open placement positions, etc.
- Administrator should be able to see the list of all agencies, pending agencies and approved agencies in order to manage agencies.

8 ROLES & RESPONSIBILITIES

According to the School of social work, the website will be used by four types of users, students, advisors, agencies and administrators. So, the stakeholders of the project are as follows:

- Students who will be placed using the website
- Advisors advising the students
- Agencies where the students are being placed
- Administrators keeping the log of all the information

For the team to be updated about all the emails sent by the sponsor and reply to those emails in a timely manner, we have selected a point of contact with the sponsor. The point of contact from our side will be Melanie Emily Martinez and from the sponsor's side will be Dawnetta Smith.

Currently we are still in the starting phase of the project, so the roles can be changed in the future. Currently, the team members and their responsibilities are:

- Anmol Shrestha - Research into front-end development
- Emily Martinez - Point of Contact with the sponsor
- Dinesh Bhandari - Research into stacks to be used for both front and back end development
- Michael McKelway Stokes - Research into back-end development

- Bhuwan Shrestha - Research into full-stack development
- Amanda La - Research into front-end development
- Shoaib Rain - Research into back-end development
- Sha Magar - Research into front-end development

The product owner and the scrum master will change periodically throughout the project.

9 COST PROPOSAL

The approximate budget for this project is set to \$800 by the Department of Senior Design. Initially, there will be no cost during the initial phase of this project. Later, when we need to get MS Azure subscriptions (Cloud-App Service selection will depend on the customer’s choice or decision), the cumulative costs will be added accordingly.

9.1 PRELIMINARY BUDGET

Below is a high-level budget table for components, fabrication, software licenses, and additional costs.

Cost Type	Estimated Cost	Actual Cost
Fabrication	\$100	\$0
Software Licenses	\$200	\$0
Additional Costs	\$150	\$0
Total Cost	\$450	\$0

9.2 CURRENT & PENDING SUPPORT

The primary funding source of this project will be provided by the Department of Senior Design. Additional funding will be available from the School of Social Work at the University of Texas at Arlington, depending on their decision to continue with our Web-App implementation. Initially, the total funding available for this project is \$800 provided by the Department of Senior Design. Any additional costs will be reimbursed, depending on reasonable cost-related documentation.

10 FACILITIES & EQUIPMENT

We are currently working to build a Web-App that can work using a cloud-based service, and therefore it doesn’t require us to work in a physical lab space. The environment is entirely virtual, and we will rarely use a lab space for implementing the Web-App. We might use the lab space for some occasional face-to-face meetings with the team members. All of our team members can work virtually from their home, work, or school area. Similarly, the testing ground is virtual. We will implement and develop the App on a cloud-based app platform, and the testing will be conducted using the cloud environment.

We will aim to complete the project within the 2 semesters period, but this project is not expected to complete by then because it requires a ton of work to be done. Specifically, the *inplace.uta.edu* website interface, which requires a lot of fixing. There are a lot of redundant pages and links that donât need at all. Additionally, there are some broken links and ambiguous setups that require fixing. Therefore, this project might require 2-3 teams to work on and complete. So, project completion during our two-semester period is not guaranteed, but it might be possible.

This project doesn’t require any physical equipment to be purchased. However, we do need to subscribe to AWS or Microsoft Azure paid cloud services at some point in our Web-App implementation. The estimated total cost related to this Web-App implementation has been explained in the cost proposal

section in this PDF document. There is no other paid software equipment required, other than the cloud-based platform. The mock software design, implementation, and, testing will be conducted using our existing computer system that each team member has.

Clearly, this project doesn't require a lot of equipment or tools and therefore, we can implement the software without worrying about dealing with any physical hardware components. Thus, every team member can work on this project independently. In case, if there are any facilities or equipment required, the team members will contact the instructor.

11 ASSUMPTIONS

The School of Social Work needs a web application that is able to aid them in placing social work students into field work with third party agencies. The system they are currently using is known as "InPlace smart place solutions", but it is not entirely meeting their needs. InPlace had also promised it would fulfill their needs by the second to third semester of use but that time has long passed and they still have not. The other systems previously used besides InPlace could not pull student information from MyMav, which is key in easy placement of the students. The actions and features of the previous systems and InPlace are also limited, so they need a better solution.

There are 4 different user types that would need access to the application: Field Advisors, Field Instructors, Students and Third Party Agencies. Presently the field advisors that handle most of the placing for students mention that there are multiple features that do not work accurately in InPlace, so they must do the task manually which hinders the placement process. They also mention that a lot of the information being displayed in InPlace is unnecessary and just makes the pages feel more cluttered than it needs to be. Verbiage used in InPlace does not match what they use outside of it so that causes confusion between the users. The field advisors also dislike the amount of clicking and moving through pages it takes to do a simple task that could be done much faster if it was condensed down. Overall from the field advisor's view many things in InPlace could be discarded or altered to be more user friendly.

The third party agencies that the students are being placed at have also complained about the non-user friendly experience of using InPlace. This impedes the placement process since the field advisors must then explain how to use InPlace when the application could just be a bit more intuitive. Students are currently left out of the loop with InPlace when it comes to their applications. If the students could be provided with the status of their application, they would no longer need to ask their field advisor whether or not the application was received and approved and would put benefit the field advisors of not having to answer too many student emails. All of the InPlace users are negatively impacted by its inadequate features and non-intuitive design. So much work and time would be saved if our senior design team were able to provide the School of Social Work with an application that fit their specific needs.

The School of Social Work talked with the director of senior design, Dr. McMurrough and he thought it was possible to get a few senior design teams that could work with them and possibly meet all their needs. All these reasons lead to why the school of social Work is currently looking to us to help them. We could potentially provide them with an application that works seamlessly with MyMav and provides a user friendly experience for all users in the student field work placement process.

12 CONSTRAINTS

The following list contains key constraints related to the implementation and testing of the project.

- Final prototype demonstration must be completed by August 10th, 2022
- Total development costs must not exceed \$800
- Secure usage of student data

- Customers will be only be available to meet during regular school hours
- Integration with MyMav will depend on OIT clearance and giving us the needed information to have access

13 RISKS

The following high-level risk census contains identified project risks with the highest exposure. Mitigation strategies will be discussed in future planning sessions.

Risk description	Probability	Loss (days)	Exposure (days)
Clearance delays from OIT to use certain API's	0.50	10	5
Not being familiar with stacks being used to built the website	0.50	20	10
Database not configured properly	0.25	30	7.5
Hosting the website not working	0.30	20	6
Student data is stored insecurely	0.20	15	3

Table 1: Overview of highest exposure project risks

14 DOCUMENTATION & REPORTING

14.1 MAJOR DOCUMENTATION DELIVERABLES

Sprint 1 Report - July 8th, 2022
 Project Charter - July 12th, 2022
 Sprint 2 Report - July 22nd, 2022
 System Requirements Specification - July 29th, 2022
 Architectural Design Specification - August 10th, 2022
 Sprint 3 Report - August 12th, 2022

14.1.1 PROJECT CHARTER

The team will have a shared version of the Project Charter document linked in our Discord server so that all team members will have access to make updates. Given our limited information about the project, at the moment, the charter sections that are based on limited information or misunderstandings will need to be changed as we meet with the client more.

Initial version of the charter will be delivered on July 12th, 2022.

Final version expected to be delivered on August 12th, 2022.

14.1.2 SYSTEM REQUIREMENTS SPECIFICATION

The team will have a shared version of the Systems Requirements document linked in our Discord server so that all team members will have access to make updates. We don't have any information on the systems required, yet. When we get that information from the customer, we create/update the document. As we get more detailed information from the customer on the features that they need and have team discussions on what is practically deliverable, we will adjust the SRS accordingly.

Initial version of the SRS will be delivered on July 29th, 2022.

Final version expected to be delivered August 12th, 2022.

14.1.3 ARCHITECTURAL DESIGN SPECIFICATION

The team will have a shared version of the Architectural Design Specification document linked in our Discord server so that all team members will have access to make updates. We don't have any information on the systems required, yet. When we get that information from the customer, we create/update the document. Once the SRS is more defined, we can hone in on what language/architecture we will be using to build the application. When that is done, we can use that framework to build a more detailed version of the ADS.

Initial version of the ADS will be delivered on April 12th, 2022.

Final version expected to be delivered August 12th, 2022.

14.2 RECURRING SPRINT ITEMS

Sprint Goal

Sprint Backlog

Individual Time Expenditures

Team Burndown Chart

Individual Retrospective

Peer Review

14.2.1 PRODUCT BACKLOG

The team will create a shared document that is linked in our Discord server, with every member provided access, and will serve as a product backlog. As individual members find things that need to be added to the document, they will add them. Priority and decision making will be handled on a case by case basis. With items that are purely team decisions, that will be handled by a group vote. In the event that it is a decision that involves the customer or CEO, they will likely be given more weight when it comes to priority and decision making. Ideally we'll use Google docs for our shared document, but that decision will have to be cleared by each party involved, as it would be best to use a document that the majority are comfortable with.

14.2.2 SPRINT PLANNING

There will be a meeting (or multiple meetings, if necessary) before the sprint plan is decided where the team will go through any outstanding tasks, requests, issues and make a decision based on a number of factors. There will be 4 sprints in Senior Design 1 and 4 sprints in Senior Design 2.

14.2.3 SPRINT GOAL

Sprints will be agreed upon by the group as a whole. Before our team sprint plan meetings, we will approach the subject in our regularly scheduled meeting with the customer.

14.2.4 SPRINT BACKLOG

There will be a shared doc linked to the team's Discord server that will serve as the sprint backlog. All team members will have access to add/remove tasks from the backlog. Meetings will be held, both synchronous and asynchronous, whenever a team member has a pending change to the backlog.

14.2.5 TASK BREAKDOWN

Team members will be expected to volunteer for backlog tasks. In the event there are tasks which are not claimed and need to be completed, the team will discuss assignment of the task. Assignment will rely on a number of factors, availability, priority, required skill, workload, etc. If the meeting does not result in a member volunteering for the task, the group will have a vote on assignment, with majority rules.

14.2.6 SPRINT BURN DOWN CHARTS

Michael Stokes will be responsible for generating burn down charts for each sprint. Each team member will be expected to keep their own hours of any effort expended on the project in a time card. Before the sprint review is completed, each member will send their time card to Michael. Once he has everyone's documented effort/hours, he will construct the burndown chart.

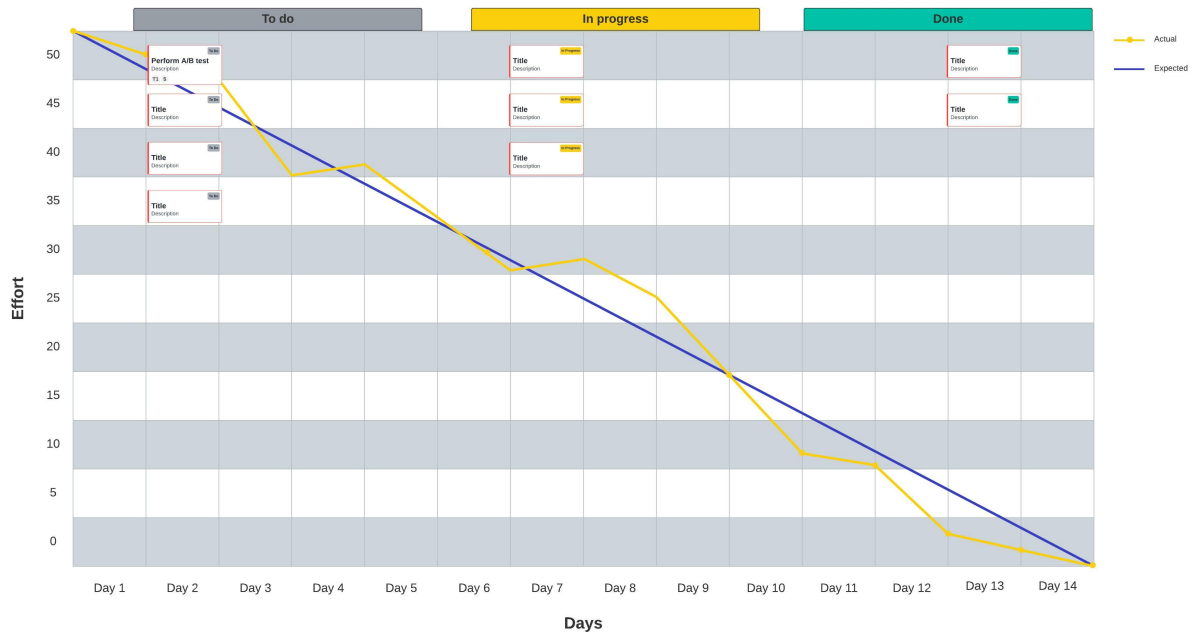


Figure 1: Easy Placement Sample Burndown Chart

14.2.7 SPRINT RETROSPECTIVE

Sprint retrospectives will be handled as a group, with each member responsible for detailing what they worked on during the sprint. The remaining aspects of the retrospective will be divided evenly among the team. Once all the information is in place, the team will format it as a group to bring it up to presentation-quality. The sprint retrospective meetings will occur the weekend following the end of the sprint.

- Sprint 1 Retrospective due July 8th, 2022
- Sprint 2 Retrospective due July 22nd, 2022
- Sprint 3 Retrospective due August 12th, 2022

14.2.8 INDIVIDUAL STATUS REPORTS

Each team member will submit a status report for every sprint. Members will be responsible for reporting on the sprint goal, sprint backlog, time expenditures, a team burndown chart, an individual retrospective, and a peer review at the end of each sprint.

14.2.9 ENGINEERING NOTEBOOKS

Each team member will be responsible for updating their own version of their engineering notebooks. Ideally that will mean any effort expended will be included. There will be no minimum amount of pages to complete, team members will be encouraged to use their best judgement.

14.3 CLOSEOUT MATERIALS

The customer will be provided any account information necessary to access the architectural software/hardware to maintain the application. In addition they will be provided a user manual to assist them in using and maintaining the application. They will also be provided any any extraneous materials, like posters.

14.3.1 SYSTEM PROTOTYPE

The final system prototype will consist purely of the placement application. We will demonstrate this by using the application to accomplish a number of regular activities that the customer would use the application for. We would like for there to be a PAT after we have done a demonstration for the customer, if possible. Nothing will be demonstrated off-site.

14.3.2 PROJECT POSTER

The poster will just be the application logo, name, catchphrase, and testament from the School of Social Work. Ideal dimensions will be 18 inches x 24 inches.

14.3.3 WEB PAGE

The project web page will be accessible to the public and will feature the application name, logo, description, testimonials, and basic technological information. It will be treated as a company website that will feature information on the product we design for the School of Social Work. It will be created once we have gained more information from the customer and updated sporadically to reflect the most current information.

14.3.4 DEMO VIDEO

The demo video will include a description of the School of Social Work's placement needs, why they exist, demonstrations of the application accomplishing a series of tasks that assist in SoSW placements, what technology is being used, why it's being used, and any future changes that will/might be made to the application. Because we won't have a final product by the time the demo video is presented, we will have to include B-roll footage so that future teams can insert video of new functionality into the existing demo footage.

14.3.5 SOURCE CODE

Our source code control and version control will be done with a project Github. There are currently no plans to share the source code with the customer, as they are not technologically savvy, but that could change later in the project. There are also no plans to make the project open-sourced, as it is intended for practical use by the School of Social Work and will be tied into MyMav. That may also be subject to change. The current plan is to include the licensing terms in the readme file.

14.3.6 SOURCE CODE DOCUMENTATION

The team doesn't know what documentation standards we will employ, yet, this early in the project. Whatever it is, it will need to fit into the Agile development structure. In addition, we currently plan to use Javadocs to generate documentation and provide it in HTML. But both of those are subject to a variety of things (documentation standards, languages, desired users, etc).

14.3.7 HARDWARE SCHEMATICS

This project is purely software.

14.3.8 CAD FILES

This project is purely software.

14.3.9 INSTALLATION SCRIPTS

This will be a web-application, so there should be no need for any installation. From a user perspective, this should simply be a website that the social workers to make placements for their students. The less the School of Social Work has to do, technologically-speaking, the better.

14.3.10 USER MANUAL

The customer will be provided both a digital user manual and a setup video. Because of the lack of technical knowledge on the part of the expected user, the team will need to be very clear and very detailed in providing instructions on how to use the application. Both of these can be given to the customer for future reference, if they have questions.

REFERENCES

[1] <https://inplacesoftware.com/>.