Software Project Management Plan

RentO

May 5th, 2023

The Underbots

Computer Science Dept / CSUN

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Revisions

Version	Primary Author	Description of Version	Date completed
1.0	The Underbots	Original Document	9/30/2022
1.1	The Underbots	- The removal of React, starting on page 8 and until the end of file, due to not using React. - Updated 3.1 Tasks on page 9 with new entries for Spring deliverables. - Updated 3.2 Assignments with new entries. - Updated 3.3 Timetables with Spring Semester. - Updated link to RentO's github at the end of the page.	5/5/2023

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1. Introduction

1.1 Project Overview

Purpose

The purpose of our project is to create an ecommerce website, called RentO, that allows users to rent electrical equipment and devices, from guitars and amplifiers to cameras and speakers, from other users. This project will include friendly user interfaces, database management, content management capabilities, a friendly SEO code and layout, and a proper messaging system.

Scope

The website will be intended to be used by people who either want to lend their unused equipment for profit or by someone who needs to acquire something for a short use. This can include artists, musicians, indie developers, and anyone that needs to rent something that they can't afford, have the space to store, or wants to try out the product before buying it.

The website will be accessible by all devices, including PC, smartphones, including Android and IOS, and various browsers. It will contain various features that will help the user get their objectives done, either putting up their electrical tools up for rent or renting one out if they are interested. This will include a categorization and sorting system, a feedback and review model, and the ability to communicate between users.

Assumptions and constraints

One assumption, we have in mind, is the possibility that our users might abuse the items they rented and case/complaint will occur. While we won't be liable for the damages or the way the user treated the items, we will create a system where the complaints are reviewed and an appropriate action can be taken.

Another assumption is that users that want to rent will want pictures of the item they are interested in, so we will have a requirement for lenders to upload photos of their items in question and talk about the conditions it is currently in.

One of the constraints in mind is risk management for our website. There is a possibility that a major issue might occur, such as the website not being able to connect to the database, or the messaging system not properly working, thus users are not able to reach each other. To prevent this, we will need to make sure to follow the waterfall method and make sure each section is working right and is able to connect to each other with zero issues.

Another constraint is the quality of the webpages of RentO. It's a possibility that we can develop a website that has poor qualities to the consumers. To prevent this, we will have various members act as Quality Control, as well as have a few people outside our team, beta test the design of our website.

1.2 Literature Review

These are the resources we have used for our project:

- Reverb: This website was the inspiration for our project, suggested by one of our team members. This page is about selling musical instruments and accessories as well as posting articles related to music. People are able to buy used and new items and choose to be shipped out or pick it up locally, if the option is given. We want to make ours based on renting rather than selling, for those who can't afford to purchase one or keep it because of space issues, needs for a project, or want to try something new without buying it. [1]

- Odin Project: This website has been very useful in regards to helping new people learn how to develop websites from a full stack point of view. It covers HTML, CSS, Javascript in the Front-end while using NodeJS for the Back-end. This is a very informative website that really helps newcomers and also veterans if they need a refresher, as they always have the courses updated with new information. Not to mention it teaches people how to use GitHub properly, a vital tool for this project.[2]

- AWS: Amazon Web Services would be our choice to host the websites as it is a reliable place and offers free trial to test our project and in the event we try to go public, would be the main choice to go with. They offer various services and types of websites that fit different types of ideas and projects.[3]

- MongoDB: MongoDB is a database program that allows us to use and store data, which would be useful for our project. MongoDB has a feature where we are able to use it straight from a NodeJS application with little complications, which would make it easy for the team.[4]

- Figma: This website helps the team develop the user interface of the websites with ease and makes it simple to create designs. The interesting part is that it also allows multiple people to work on the same project, so each member can contribute in real time and see what changes were made. This will be the main tool for our UI design.[5]

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[1] "Musical Instruments for Sale - New & Used Music Gear." *Reverb.com*, 2013, https://reverb.com/.

[2] "Your Career in Web Development Starts Here." *Your Career in Web Development Starts Here | The Odin Project*, 2013, https://www.theodinproject.com/.

[3] *Cloud Computing Services - Amazon Web Services (AWS)*. https://aws.amazon.com/.

[4] "The Developer Data Platform." *MongoDB*, https://www.mongodb.com/.

[5] "The Collaborative Interface Design Tool." *Figma*, https://www.figma.com/.

2. Project Organization

2.1 Roles and Responsibilities

Team Member	Roles	Email
Cristian Ramirez	Team Lead, Front-end Developer, Graphic Designer	cristian.ramirez.635@my.csun.edu
Vince Fearing	Back-end Developer, Tester	vincent.fearing.413@my.csun.edu
Mohammed Al Moosawi	Front-end Developer, Graphic Designer	Mohammed.almoosawi.361@my.csun.edu
Ravindu Gunasinghe	Front-end Developer, Graphic Designer	
Talha Harooni	Back-end Developer, Tester	
Aaron Christian Navarro	Back-end Developer, Tester	

Role	Responsibility
Team Leader	Team leader's role is about managing the members, making sure each one is doing their part and being able to divert resources to certain areas if it is deemed falling behind schedule. Team lead is also responsible in communication with the professor and to properly inform any information between the team and the professor. The team lead is responsible to submit any report or paperwork and makes sure it is up to standards, having minimal errors in spelling and grammars.
Front End Developer	Front-end developers are responsible to deal with the client side of the website, or the websites that the users will see and deal with. This involves the way it looks, via HTML and CSS and how it functions, using Javascript. Front-end developers will work closely with Back-end to make sure everything is connected properly and every requirement is fulfilled.
Back End Developer	Back-end developers focus on the server side, the behind the scene part of the websites, they make sure what is displayed in the website and which data is viewed from the database. They work closely with Front-end to make sure it is running with minimal issues.
Graphic Designer	Graphic Designers create the visual style for the websites and make sure it is appealing and up to current standards, also creates a visual layout for the front-end developer, so that they have an idea of how the website should be displayed.

Quality Tester	Quality Tester tests every functionality that has been created for the function in various ways, from just a simple but common process to a complex and rare method. If any issues occur, they will make note of it and report it to the team for further investigation and finding a solution.

2.2 Tools and Techniques

- Waterfall Methodology: The waterfall methodology is a project management process that focuses on a linear progression of a project. It is a sequential process where a project goes through several phases, in a waterfall style. The phases that a team goes through are requirements, analysis, design, code, test, and maintenance. All are documented so that when the team needs to look at a reference or what has been done, it will be easy to find the information. This is a decent technique for beginners, as it helps measure the progress, help people join the project and know what is going on, and be able to minimize coding errors by identifying them during the analysis and design phases.

- Two Week Sprints: A two week sprint is a period of time which the team must complete specific tasks based on the prioritization. This will be related to the progress report the team lead submits every two weeks, to ensure that the team is not falling behind.

- Discord: Discord is a VoIP, or Voice over Internet Protocol, and instant messaging program. People are able to communicate among other users, either in groups, one-on-one, or in communities, using voice calls, text messaging, and media and file sharing. This would be our main tool of keeping in communication among the team outside of class.

- Github: Github is an internet hosting service for software development, where users are able to write their code and have a team collaborate on the same code, updating it with new additions. It is the best tool for version control and collaboration on the internet and it will be our main site to code our project and have various versions, in the event we encounter a bug and need to go back.

- Glitch: Glitch is an internet hosting service, similar to Github, but focuses more on web development. Users are able to create their own websites, using HTML, CSS, and various other languages. People are able to collaborate on a project and are also able to push any coding to Github for version control. This would be our go to site to create our front end of the website.

- Figma: Figma is a collaborative web application for user interface design, where teams are able to work on creating the design and layouts of a webpage. Similar to Github and Glitch, users are able to share their work and have everyone see it. This will be used for our team to create the designs and looks of the webpages.

- HTML: HTML, or HyperText Markup Language, is a standard markup language, mainly used for websites. Most text you see online are from an HTML file, it's the foundation of a website and without it, you don't have a web page. Web browsers receive an HTML file from a web server, where it contains the structure of the web layout and includes video, images or links to other webpages. This will be our core for the project, because without it, the website would not exist.

- CSS: CSS or Cascading Style Sheets, is a style sheet language used to to assist with HTML files, in regards to improving the layout and design of the web pages. While HTML is very basic and can't offer many features or style, CSS comes in and is able to give the user more options to design their web pages. It's one of the main three essential tools for web development. This will be used to help improve the design and look of the websites for our project.

- JavaScript: JavaScript is a front-end scripting language that is used as a core tool for web development, along with CSS and HTML. It is used to create dynamically updated content, control media in a webpage, animate certain parts of the web pages, and gives more life to the websites. This will be used as the main scripting language to create our user interface for our project.

- NodeJS: NodeJS is an open-source, back-end JavaScript runtime environment, that is used to write command line tools and server-side scripting, using the JavaScript language. On the server-side, it will produce a dynamic web page content before it's sent to the client side, where HTML, CSS, and JS handle the rest. This language will be used on the back-end side of our servers.

- MongoDB: MongoDB is a document-oriented database, used primarily to build highly available and scalable internet applications and data. This would be used to store our data, which involves users' account, rental agreement, including item, price, how long the item is being rented and many more, and items being listed by lenders, including reviews, price, images, and related information. There is a version of MongoDB that makes it compatible with NodeJS and Javascript, making it easier to integrate everything into one language.

- AWS: Amazon Web Services, or AWS, is a service provided by Amazon that includes on-demand cloud computing platforms and APIs, or Application Programming Interface, to anyone, on a pay-as-you-go basis. This will be the place to host our websites, as it is a secured site and offers a free trial for the team to use. With AWS, we will be able to build, deploy and manage our websites using a very reliable network.

3. Project Management Plan

3.1 Tasks

Task#/Phase	Task Description	Date
Progress Report #1	Submit a report based on the activities we have done, and will do for the next progress report.	9/25/22
Project Presentation	Propose an idea for our senior project in the form of a presentation slide and discuss in details about the project, and how we are going to work on it.	9/25/22
Progress Report #2	Submit a report based on the activities we have done, and will do for the next progress report.	9/25/22
Software Project Mgmt Plan (SPMP)	An overall report of how the project is going to be managed, including resources, techniques and methods, people who are involved, etc.	10/2/22
Progress Report #3	Submit a report based on the activities we have done, and will do for the next progress report.	10/9/22
Software Requirement Spec (SRS)	Submit a report that will discuss the requirements of our project in detail, including what is required and necessary for each requirement to be legitimized for our project.	10/16/22
Progress Report #4	Submit a report based on the activities we have done, and will do for the next progress report.	10/23/22
Progress Report #5	Submit a report based on the activities we have done, and will do for the next progress report.	11/3/22
Software Design Document (SDD)	Submit a report that will talk about how our project will be designed, including how the requirements are implemented and how the codes and design of the project will be laid out.	11/10/22
Progress Report #6	Submit a report based on the activities we have done, and will do for the next progress report.	11/20/22
Progress Report #7	Submit a report based on the activities we have done, and will do for the next progress report.	12/4/22
Progress Report #8	Submit a report based on the activities we have done, and will do for the next progress report.	12/11/22
Software Test Plan (STP)	This will be the testing phase of our project, so make sure that the requirements are being met and the program or application is going in the right direction. NOTE: Not final version of product.	12/11/22
Project Presentation (Full Presentation and Demo of Code with Documentation	Present the project for final review of Fall semester and show how far the progress for the project has been made. NOTE: Not the final version of class but does need to be either ⅓ or ½ completed, coding-wise.	12/15/22

Status Report #1	Submit a report based on the activities we have done and will do for the next progress report.	2/5/2023
Status Report #2	Submit a report based on the activities we have done and will do for the next progress report.	2/19/2023
Status Report #3	Submit a report based on the activities we have done and will do for the next progress report.	3/5/2023
Status Report #4	Submit a report based on the activities we have done and will do for the next progress report.	3/19/2023
Peer Review Artifact	Checking parts of the project and make a review, which will be discussed among the group and decide which team member will work on the project.	3/19/2023
Status Report #5	Submit a report based on the activities we have done and will do for the next progress report.	4/2/2023
Status Report #6	Submit a report based on the activities we have done and will do for the next progress report.	4/30/2023
Project Presentation	Present our project in the form of a PowerPoint presentation and discuss what we learn as well as do a demo of our project.	5/11/2023
Status Report #7	Submit a report based on the activities we have done and will do for the next progress report.	5/14/2023

Software Test Report	Final Test Report to make locate of any issues present in the project and make sure the status of the project is known.	5/14/2023
Reflection Paper (Individual)	Write a reflection paper based on what we experience and learned during the school year, in an honest and complete thorough way.	5/19/2023

3.2 Assignments

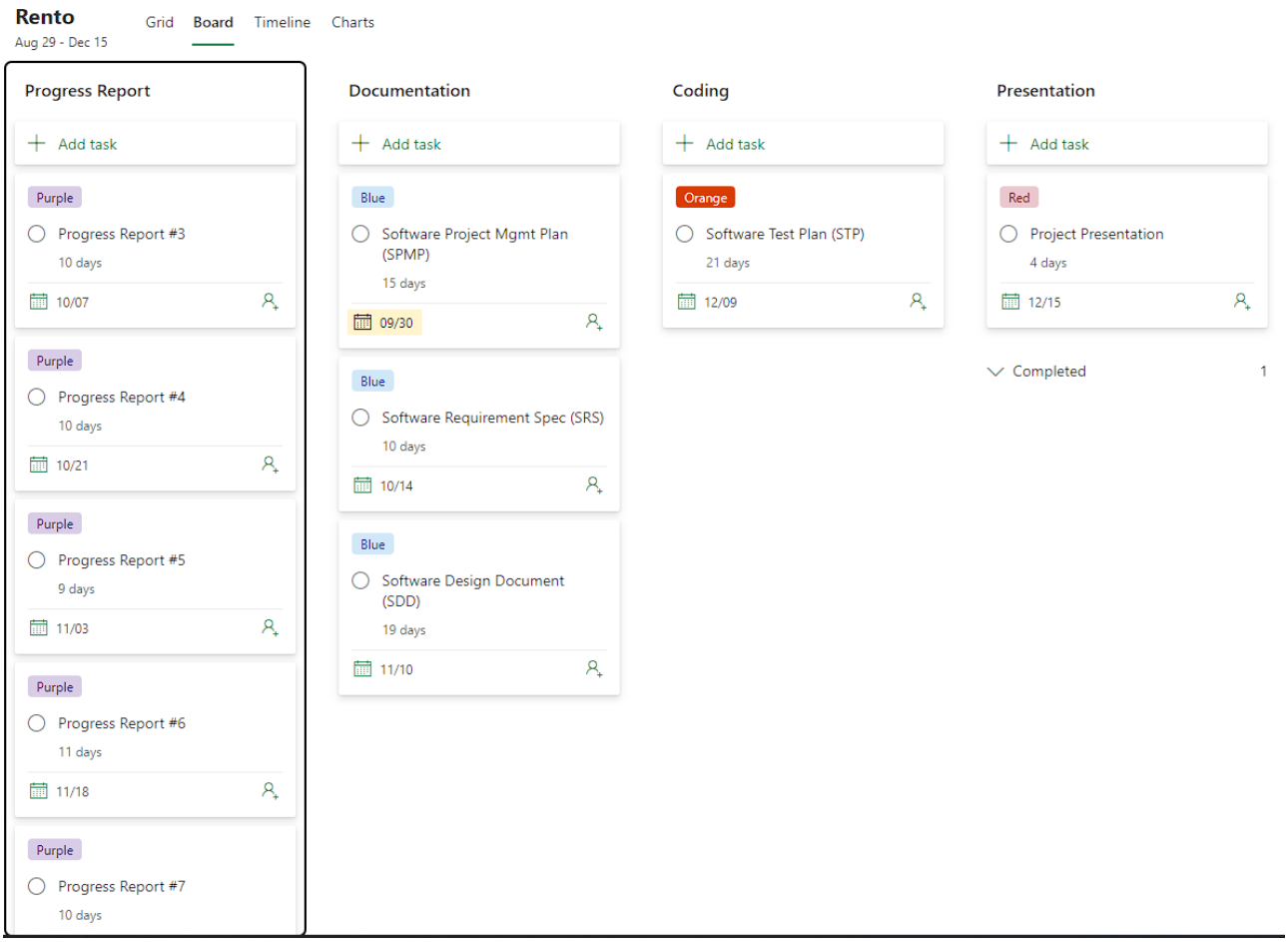
Week#	Deliverables/Progress
Fall 2022	
1	-Began creating ideas of what our project should be, as well as what the name of our project and group should be. -Research some tools and coding language we can use for our project.
2	-Presented our idea in the form of slides -Research more tools and resources that can help us improve our skills for this project. -Work on the first progress report, detailing what we have done for the first two weeks.
3	-Began our course in the Odin Project, learning the basic concepts for the first few sections, including HTML, Github and common definitions and computer basics. -Began choosing roles for members and deciding a general idea of what the requirements should be.
4	-Continued working on the Odin Project, learning the fundamentals of HTML, and started working on the course about CSS. -Began working on our SPMP report to be submitted the following week. Worked on the first two sections (Introduction and Project Organization). -Began working on the second progress report for the third and fourth week, detailing what we have done.
5	-Finishing up the SPMP report to be submitted by the end of the week. Worked on Project Management Plan and Additional Material. -Began working on a very early concept of what our website should look like, focusing on the layout. We were able to get an idea for the homepage. -Began working on the basic ideas of what our requirements should be for our website. These are basic ideas and won't fully develop until week 6, when we get the template of how a requirement should be done.
6 and 7	-Continue working on the requirements, as well as learning more information of what we need to know via Project Odin. -Also continue working on the front-end part of the website, including design, color choice, etc. -Worked on Progress Report #3 for week 7.

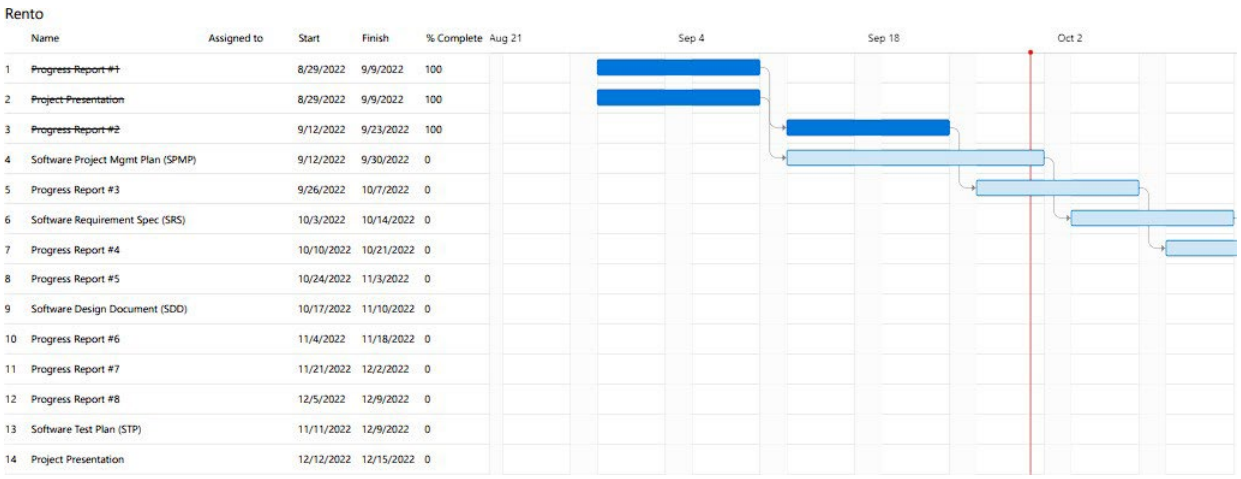
8 and 9	-Finishing up the requirements for our project. -Began working on the Code and Unit Test part of our project, making user parts of our code work or see what needs to be fixed. -Worked on Progress Report #4 -Began learning about the Software Design Document.
10 and 11	-Continue working on the project as well as writing the Software Design Document. -Focusing much of our time with the front part of our project.
12 and 13	- Finishing up the SDD and submitted for grading, as well as worked on Progress Report #5. - Began working on the first peer review artifact, checking what needed to be looked at or fixed. - Also worked on the Progress Report #6 towards the end of week 13.
14 and 15	- Worked on the project, code wise. - Wrote and submitted Progress Report #7 - Began working on the Final Project Presentation for Fall 2022. - Also worked on the 2nd Peer Review Artifact.
16	- Submitted and presented Final Project Presentation.
Spring 2023	
1 and 2	- Return from winter break and began working on the project. - Began learning about EJS and several key elements to run a dynamic website. - Submitted Status Report #1
3 and 4	- Began working on the backend of the project, dealing with NodeJs and several other frameworks. - Submitted Status Report #2
5 and 6	- Continued working on the project and figuring out how to connect the parts of the codes with each other.
7 and 8	- Was in hiatus mode during these two weeks, not making any major progress on our project, but was able to worked on it and able to submit Status Report #3 and 4, as well as the peer review artifact.

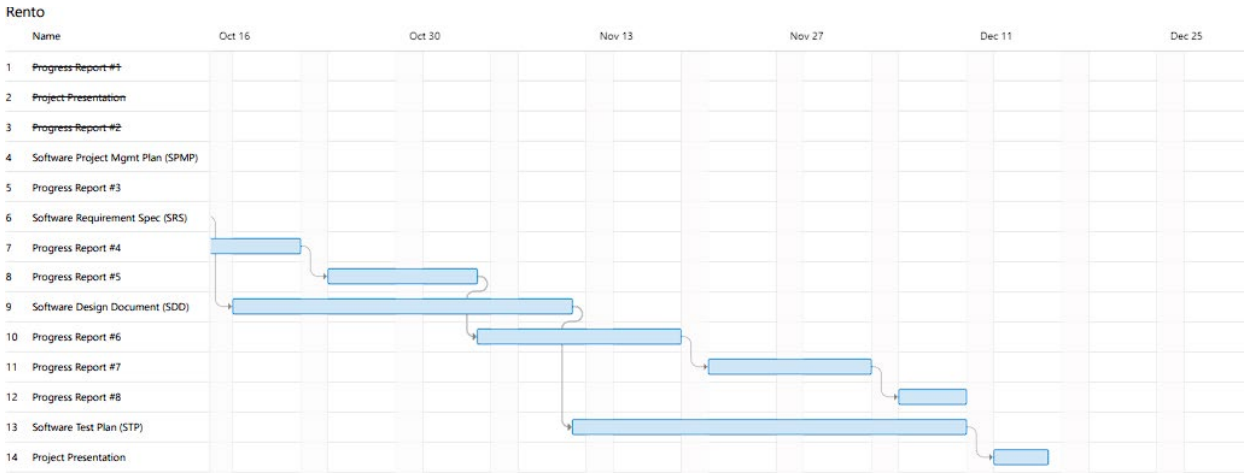
9 and 10	- Spring break on week 9 so no progress has been made, as well as week 10 as many of our team members were dealing with personal affairs. - Submitted Status Report #5.
11 and 12	- Continue working on the back end of the project, trying to fine tune the front end of the project as well.
13 and 14	- Worked on Status Report #6 - Continued working on the project, making sure the code can run on AWS without any issues.
15 and 16	- Began working on the final presentation for the semester as well as the Software Test Report. - Making sure the repository for the project is up to date and organized. - Worked on the Reflection Paper, individually. - Submitted final Status Report #7.

3.3 Timetable

Fall Semester







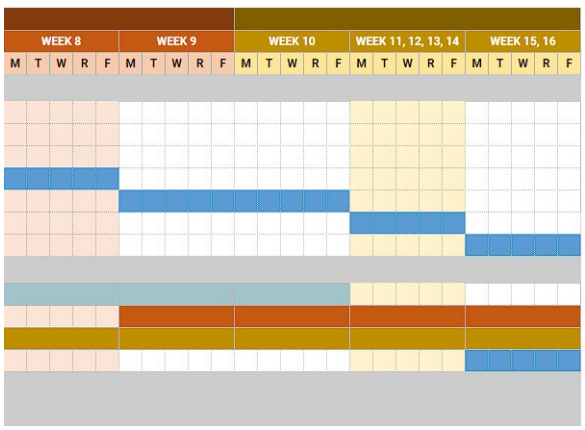
Spring Semester:

GANTT CHART TEMPLATE

Smartsheet Tip → A Gantt chart's visual timeline allows you to see details about each task as well as project dependencies.

PROJECT TITLE	RentO
PROJECT MANAGER	The Underbots
COMPANY NAME	CSUN
DATE	1/24/23

WBS NUMBER	TASK TITLE	TASK OWNER	START DATE	DUE DATE	DURATION	PCT OF TASK COMPLETE
1	**Status Reports**					
1.1	Status Report #1	The Underbots	1/24/23	2/5/23	11	100%
1.2	Status Report #2	The Underbots	2/6/23	2/19/23	13	100%
1.3	Status Report #3	The Underbots	2/20/23	3/5/23	15	100%
1.4	Status Report #4	The Underbots	3/6/23	3/19/23	13	100%
1.5	Status Report #5	The Underbots	3/20/23	4/2/23	12	100%
1.6	Status Report #6	The Underbots	4/3/23	4/30/23	27	100%
1.7	Status Report #7	The Underbots	5/1/23	5/18/23	17	100%
2	**Deliverables**					
2.1	Peer Review Artifact	The Underbots	1/24/23	3/19/23	54	100%
2.2	Project Presentation	The Underbots	3/19/23	5/12/23	61	100%
2.3	Software Test Report	The Underbots	2/23/23	5/14/23	80	100%
2.4	Reflection Paper	Individually	5/5/23	5/14/23	9	100%



4. Additional Material

4.1 Definitions, Acronyms and Abbreviations

- SEO: Search Engine Optimization
- HTML: The HyperText Markup Language
- CSS: Cascading Style Sheets
- Javascript: Scripting Language
- API: Application Programming Interface

4.2 Appendices

None at the moment.

4.3 References

1. Odin Project: [https://www.theodinproject.com/]
2. Project's Github: [https://github.com/CrisNR/RentO]
3. Amazon Web Services: [https://aws.amazon.com/]