Team 03

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**Software Development Process for our Project**

1. Planning

Planning is one of the most important phases of building any software. For our planning phase, we discussed several possible options for building our app. We considered creating a mobile application at first, but in the end, we decided a web app would be better suited for our purposes and requirements. We debated using several frameworks, such as React, but settled on just some basic html, JS, CSS, php, and sql. This was our first time building a fully-fledged web app, so this basic stack was more than enough for our purposes. After deciding on what we would build, we planned out a basic design for the application. It would involve 3 interfaces: one for drivers, one for clients, and one for executives.

1. Requirement Analysis

To be able to generate the program we have so far, we had to identify some of the requirements for this project with the help of the user stories. To start, we identified the users of the program which are the executives, the drivers, and the clients. And to be able to satisfy each of their requirements, we implemented user interfaces tailored specifically for their needs. In the client’s interface, clients will be able to place orders, and view order status. When placing an order, the client will have the choice of choosing which shipping service they would like for the order they are placing. And for the order status, the client will be informed of the order being either pending, completed, or canceled. For the driver interface, the driver would be able to clock in and out, view the different delivery assigned to them or not and have the option to choose from provided he has no delivery to be made. The driver interface also gives the driver the ability to sign form electronically when starting or ending a delivery. As for the executive interface, the user in charge of the account will have the ability to monitor all ongoing orders, or review completed/canceled orders placed from a database. The executive interface also gives the executive the ability to view and maintain the files of the drivers who work for the company and other employees. The executives can also view the company’s progress through a report generated which provides data for daily, weekly, and monthly progress.

1. Software Design and Prototyping

Once the requirement had been identified, we were able to design the software. We drew a blueprint of each interface. Each interface had specific features that needed to be laid out in a user-friendly way. We designed many of these features to have their own page so that the user can simply select that page to access the feature. The executive interface contained the fully featured delivery manager and the client manager. It also contained the account settings and the report generator. The client interface had 3 pages and included the order status, bill, and request order page. The last interface was the driver interface. This interface included the login page, the clock in and out page, the logs and past delivery page and the work history page. We built a prototype for each interface to make sure core functions worked before adding additional features. For example, on the driver interface, we built a prototype for the login page and tested it before building the Clock In page.

1. Programming

During this phase of the development process, we used various programming languages to achieve our goals. For the front-end part we have used HTML/CSS to code our pages. In the back end, we have used JavaScript (js) to code our pages. We have also used SQL to connect our database and create tables for client and executive interface. We used GitHub to share our files and commit all the changes to repositories to keep updating our files and codes.

1. Deployment

Deployment is one of the crucial phases in the software development process, which usually automates this process using a continuous integration model with the help of a tool called Amazon Web Services (AWS). This phase results in the release of working software to production. Initially we planned to deploy our website using AWS hosting service but because of the time constraints of the project we are not able to achieve this feature at this time.

1. Maintenance

Once the building phase is over, the development team monitors the software to make sure it’s operating properly. If bugs or defects are discovered in production, the developer team addresses them instantly. To make sure the fixes don’t cause other problems, our developers have them flow through an abbreviated software development process. We will oversee any maintenance or updating of the website if needed.

**User Stories**

1. As a delivery driver, I need to be able to digitally sign and fill the delivery sign-in form so that I don't have to use the paper sign-in sheet anymore.
2. As a delivery driver, I need to be able to clock in and out so that I don't need to use paper timesheets anymore.
3. As a company executive, I need to be able to access, search, and filter deliveries, so that I can use that information for business purposes.
4. As a company executive, I need to be able to view employee timesheets and payroll information, so that I can easily and accurately do payroll.
5. As a company executive, I need to be able to generate weekly and monthly reports so that I can keep track of company progress and goals.
6. As a client, I need to be able to accurately track delivery status so that I can keep track of my shipments.
7. As a client, I would like to be able to have different shipping services based on my needs.

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| **User Stories Number** | **Status of user stories** | **Reason if user stories is not achieved** |
| As a delivery driver, I need to be able to digitally sign and fill the delivery sign-in form so that I don't have to use the paper sign-in sheet anymore. | Not Achieved | The reason we were not able to achieve this user stories was because of the time constraint and limited number of people working on the project. |
| As a delivery driver, I need to be able to clock in and out so that I don't need to use paper timesheets anymore. | Achieved |  |
| As a company executive, I need to be able to access, search, and filter deliveries, so that I can use that information for business purposes. | Partially Achieved | This part of our user story is partially, we were able to add the search features, but filter deliveries were not achieved because of time constraints. |
| As a company executive, I need to be able to view employee timesheets and payroll information, so that I can easily and accurately do payroll. | Not Achieved | For this user story we were not able to achieve this because of time constraints and team misunderstandings and communication between teams. |
| As a company executive, I need to be able to generate weekly and monthly reports so that I can keep track of company progress and goals. | Partially Achieved | We were able to implement an interface of what the generated report will look like. Time issue and technical constraints. |
| As a client, I need to be able to accurately track delivery status so that I can keep track of my shipments. | Not Achieved | For this part of the user stories, we were only able to set up the page on our website but not fully functioning because of the time constraints and lack of communication within team members. |
| As a client, I would like to be able to have different shipping services based on my needs. | Partially Achieved | Clients can see the various services based on their needs but because of limited time we were not able to add the function that works to find the services. |

Also please include any difficulties or missing features you have had during the project development, and provide reasons (e.g., technical constraints, time issue, collaboration problem, etc.), and what effort you tried to overcome these problems

Some of the features that we are missing in our project are listed below.

1. Driver Interface is not connected to the database.
2. Driver interface does not have a table to enter the logs of the deliveries .
3. Driver can only see the history of work and the clock in/out system is not connected to the work history page.
4. Client’s interface is not able to request the services based on their needs.
5. Executive interface does not have payroll features and is not connected to the database.
6. Executive interface can only see the hours of drivers but cannot update it or modify it in case of any errors.

Technical Constraints: In this project, we came across many challenges. Technical constraints were one of the biggest challenges amongst all other challenges we faced. During the project, all our team members were assigned different roles, and some of us did not have the adequate knowledge of the language that we were using and some of the technological tools we have used in this project.

Time Issue: During the project, we planned on meeting at least once a week to discuss the progress and growth of the project . In the beginning of the project, we were meeting once a week to keep up with the work that was assigned to every team member. There were sometimes when all the team members would not have enough to meet but we made sure that everyone was keeping up with their performance.

Collaboration Problems: Team communication was the most important factor for every project to be successful. We believe that sometimes we lacked that communication between each other but for most of the time we stayed connected through the chat and email services to communicate between the team. One of the biggest weaknesses for our team was communication with each other. Because of our different work and school schedules we were not actively communicating but we made sure that tasks and deliverables were understood by the team and achieved in timely manners.