Designing and Implementing CREW LOGISTIC SYSTEM – WEB APLICATION

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# Introduction & Rationale

This project requires the development of a web-application system for the event company Pinnacle Crew. Pinnacle have been specializing in providing crew for corporate events. They have systems and tools in place for maintaining their business but are missing valuable features meaning they don’t currently have a system that can efficiently maintain organisation of the employed crew within their company. The system currently in use is a simple SMS system, which is not convenient from the crew's perspective. The current system functions in the following way: The admin (officer) sends an SMS to each crew member detailing: Job Number, Date, Time, Required Amount of Crew, Shift Duration, Client’s Company Name, Contact Number on site, Additional Notes. When the crew receive the message, the user must reply with 'YES' or 'NO' and supply the job number ID. The confirmation, if the crew member is assigned to the job, is called 'CREW LIST'. This is sent usually 24h before starting the job. The crew list consists of all the information about the job, phone numbers and names of all the members which they have been assigned to the specific job.

# Aims and Objectives

## Aims:

Design and implement a full system web application which enable to change the communication between the office (administrator) and the crew. There is going to be fixed couple things which they are inconvenient in the current system. The most important thing which is going to be fixed is that the crew have a problem with tracking their jobs and hours. The system will count the hours and store all jobs which has been done by each worker (crew). The system will change the work how administration office works. The office will not send messages anymore to the crew with jobs, all these will happen in the web application. They will create a job and upload to the system to be seen by the crew. The crew will see available jobs and will accept it or decline. The system will have an account system for each individual admin and crew. The system will store their details such as documents, avatars photos etc.

## Objectives:

* Choose back-end and front-end programming languages for the web application.
* Gather the information from the director(client) of the Pinnacle Crew what features he wants in the application.
* Research about the existing open-source similar applications which could help with creating the project.
* Design and create main functions for the Web Application.
* Test the web application to find potential issues and bugs. It can be done regularly after creation of a component.
* Add additional features during the development.
* Do the final testing and create a documentation.

# Expected Outcomes and Deliverables

The Web Application will be created by using relevant technologies. The framework called Spring Boot will be used for the back end and React.js for the front-end functionality. MySQL will used database. Create log in user to the system, also create ability to create admins accounts to manipulate the data about each crew member. Enable admin to create a job, change details about each crew member. Keep track of all hours, jobs which have done each crew member. The crew needs to have an effective way of communicating with the office with regards to offered work/jobs. The crew can confirm, reconfirm, or decline work/job. The crew can request leave from the company. The crew will have the ability to see open jobs i.e., jobs in the future or last-minute jobs that the office is deeming open. The app will need to know how many positions are available and count down as they are filled. If the admin(office) decides to do this, then certain positions(jobs) will only be visible to certain crew levels i.e., levels 1 (Novice) – 5 (Crew Chief). The crew must be able to see their upcoming jobs represented on a diary so that they can plan their time effectively. There need to be a timesheet/wallet section in the app where the office can update the crew timesheets, the crew can make queries and or confirm timesheets ready for payment. All past payments to crew should be recorded and represented (not past timesheets as this would be a GDPR violation). CJA (Confirm Job Attendance) process should be instigated from the app. Crew & Crew Chief reporting Crew can update their profile and upload required documents but, in all cases, this would be a request that the admin (office) would have to validate before the information was made live in their profile. Communication between admin (office) and individual crew and vice versa. Add additional functionality if there will be time for it.

# Methodology

The methodology which I am going to use for this project is called Agile methodology. Agile is a method for creating a software. It’s a chain between rapid development and deployment. The stages in developing a software in this style is Planning, Design, Develop, Test, Deploy, Review. I will be able to go through all the steps and if necessary, go back and fix potential issues and bugs. At the end of each stage, I will analyse and see what still need to be done and adjust my time accordingly.

Resource requirements

The projects are going to be created on my personal computer. The computer’s specifications are as follows: Processor AMD Ryzen 7, 16GB RAM, Graphics: NVIDIA GeForce GTX 1080 Ti. Provisionally planning the software is going to be deployed and hosted on my virtual private server. To be able to achieve the objectives I will use:

* Java/Spring Boot Framework – back-end development.
* React.js – front-end development
* MySQL – databases
* Figma, Visual Paradigm, Adobe Photoshop – design
* Postman – testing.

# Bibliography & References

Artemij Fedosejev. (2015). *React.js Essentials*. Packt Publishing.

Somnath Musib. (2022). *Spring Boot in Practice*. Manning Publications.

Pinyodulyajet, S., 2002. E-Logistic application.

# Project Plan

## Project Milestones:

## Project’s WBS activities

## Gantt chart: