**Pitch main speech and layout (10 minutes)**

**Introduction and team roles (1 minute)**

*Go through all the general topics that will be discussed during the pitch and outline how the structure will be carried out*

Good afternoon [Mr/Miss/Mrs] etc. Prashanth and thank you for taking time out of your schedule to listen to our pitch on creating a rostering system for Capital Ones support engineers.

During this pitch we will cover several different topics in how we plan on tackling this project and why we should be the team that you should choose.

There are 6 members on our team who are: Keija Wu who is our team leader, Gurjyot Kaur who is our Git Master, Nicole Millinship who is our Team Administrator, Liam Orrill, Tajin Tasnuva, Xuanhao Li

**Proposed approach (3 minutes)**

Key Deadlines

*Now onto how we’re going to manage our time. We plan on splitting the main project down into 3 smaller stages to help with developing the project as efficiently as possible*

*During the first stage of the project, Gurj will create the user interface for the application who has previous experience in art, we plan on making the websites responsive to help with accessing the website on different devices. Liam and Nicole will create the administrator system and Kejia and Xuanhao will be responsible for the back-end development. This stage should be completed by the winter break.*

*During the second stage, Kejia, Liam, Nicole and Teana will create the auto emailing system, and Xuanhao and Gurjyot will do the testing. This stage should be completed at the end of March.*

*In the third stage, Kejia and Liam will create the AI rostering system, Nicole and Teana will make improvements, and Xuanhao and Gurjyot will do the testing.*

**How we plan to layout the system (look at timetables)?**

**Management system:**

**Describe the demo work** *(Slide on screen shows wireframes of both pages)*

As you can see we have created a few rough diagrams of how we are going to implement the system.

In this image (management image) you can see that the page has been split up into a number of different parts. The main part of the page will show the monthly timetable and which employees will work on particular days of any month.

**Describe the menu system**

Although the system will primarily function as an automatic rostering system, we would like to provide the management of the business the flexibility to edit the schedule of the rostering system when and if needed.

The top menu bar has been split up into several different clickable buttons that will be used by the management to change the timetable.

The button in the top left will allow you to click between the different months throughout the year so you can schedule the timetables for the different months.

Now moving over to the little picture in the top right, this will allow the person using the system to login and out of the application. While also allowing them to edit information.......... And update employees personal information if needed.

The AUTO button will provide the management with an automatic way of filling in the timetable without the need of doing it manually based on the conditions required by the business.

This can then be overridden by the manager if necessary, however if they are happy with what the roster has produced they can see an overview by pressing the overview button. This will bring an overview of the entire timetable showing the full timetable for all the 3 roles letting you see further how it looks.

The last three buttons will go hand in hand with the drag and drop abilities that this application will have which we will talk about next. These give the manager an ability to override any changes made to the timetable allowing them to save and update the changes, reset the current changes back to the one saved in the database previously and clean which will clear the timetable entirely allowing you to restart the allocating process.

**Describe the file system**

On the left of the page you can see that there is a file like structure which can be used to drag and drop the employees onto the timetable at different points. This file like structure will be split into 3 parts including the different employees based on their role within the organisation.

**Describe the timetable and key at the bottom**

There are a variety of different colours being displayed on the timetable and there will be a key on the bottom explaining what each one means to the rota.

blue one is job done, Green is approved, Red is denied, Yellow is leave approved, Light grey is unauthrorised absence,Purple absent

Counts the number of each colour in a month

**What happens if a change happens during the month?**

Somebodys personal information has been updated so become unsuitable for the timetable

The week were its red if the employees is sick it means that individual will not be able to work for the rest of the week

**Employees timetable system:**

Blue is for job that’s already done

Purple is absent

Yellow leave approved

Green is approved work to do

Can press on the timetable and request absence on particular day rather than have another page to do it with a description that will be sent directly to the manager

Report show overall days worked and absence

For the generate report it will generate the data on how many times that the engineer has worked in that given year.

Again there is a button in the right hand corner giving the employee the ability to sign in and out of their account

**Technical analysis (3 minutes)**

**We plan on using:**

**HTML, CSS**

Languages and how we will store the information:

**JavaScript, PHP, SQL**

We have all created web applications in these languages before and feel that these languages can create the application you require.

We do all have past experience with using Java, we as a team feel more confident in using PHP and Javascript because we havent created web applications in java before.

Disadvantages of current commercial systems available

*We’ve noticed that most current commercial systems use a drag-and-drop approach to make things as easy to use as possible. However, very few support automated rostering. They don’t allow you to set an employee’s performance rating, for example. We want to implement the strengths of current rostering products, but also meet the specific requirements of this project.*

Technical analysis how are we going to apply the methods to create the project

**Automated Rostering -**

The most important aspect when building this project will be the implementation of an automatic rostering system that will create a timetable based on restrictions in seconds and save the management a lot of valuable time to be used elsewhere within the company.

We will take into consideration the requirements that need to be met when choosing a timetable and develop an algorithm to choose the best employees at the time while saving time.

**Email protocol –**

*One important aspect of the system will be the emailing system that we will implement into the application that would show the manager emails for approval requests, while emailing the manager when one of the employees are sick.*

we propose to use simple mail transfer protocol and Internet Message Access Protocol as our method of sending emails to the managers.

The reason we have chosen to use SMTP is because all we will need to implement is the ability to send emails from one place to another, making it ideal to use. Majority of emails that are being sent over the web use SMTP.

AI heuristic-

Evaluating the employee's goodness by calculating the absence days the leaving days and support days provided. Once this has been calculated the rostering will happen where those with a better goodness will be allocated first and then those who have more time off will have less priority.

It will increase the search efficiency as always favour those with a higher goodness rating will be picked first.

We plan on writing this heuristic in php

We are applying the most good employees so that means there's less chance of someone being absent or ask for leave.

This type of searching works better than depth first search because it uses information and always finds the best options to choose.

**Team skills (2 minutes)**

*We think that our team has the technical skills necessary to complete this project*

* + *Web development – we have all created websites last year in our Databases and Interfaces module*
  + *Java development – Although we don’t plan on using java to develop the web application, if it is a necessity, we have all learned java before and therefore we feel that we would have the capabilities to build the system but it would be a bit harder.*
  + *Requirements gathering – from studying Software Engineering we understand how important requirements are in making a project succeed*
  + *Optimisation knowledge – last year we learnt about different algorithms to do with optimisation and will hopefully apply that knowledge to build a rostering system that can choose*
  + *Rostering - some of our team members have used rostering apps before, such as TimeTree*
  + *Scenario modelling - We will be using AI to develop an algorithm to judge employees based on their previous data whether they worked or were absence and grading them. This will then be used to prioritise those less likely to miss shifts and therefore hopefully save time and money as there is less chance someone will request leave or call in absent.*

*Teamwork- Most have worked in a working environment and therefore understand the importance of communication and working as a team to work towards a set goal*

**Summary (1 minute)**

In summary

**Team roles**

**PRoposed approach**

**Technical analysis**

**TEam skills**

**Question and answers (5 minutes)**

If we need to set up our own server we plan on using Apache as its free and several of our members have used it before so we have an understanding of how it works already.

The reason we have chosen to display the timetable weekly is so that if a change happened randomly where someone called in absence we can change the hour slots they will miss more easily

How the application will work?

*From the research that we’ve done, where we’ve looked at present commercial rostering websites, and from considering the requirements of this system, we’ve decided to develop an administrator webpage and an employee webpage.*

*Although the actual rota being made will be automated based on the requirements and information in the brief, we feel that allowing the management the flexibility to override the rota will help with unforeseen circumstances that an automatic system could not control.*

*The manager will drag the employees name onto the time sheet, and it will either turn green and be successful or turn red and then go back to the position it was in originally as it doesn’t meet the criteria at that time*

*Once completed the manager will then be able to view the timecard and manipulate it as to how they want it and then save this information.*

*To automate the rostering, the system will evaluate if a staff member meets all the criteria required to be part of the support and maintenance team for that week. It will consider:*

* *Each associate’s performance rating, which goes from ‘strong’ to ‘weak’. If an associate has a rating which is below ‘strong’, then they can’t appear on the rota*
* *Whether an associate is in their probation period*
* *Whether an associate is on holiday, or whether they were on holiday the week before*
* *Whether the associate is implementing any overnight deployments that week*
* *The time since the associate was last chosen for the rota, so that they aren’t on the rota too frequently*

*For the employee system, the employees will be shown what weeks they are on support and what role they will have (primary engineer, secondary engineer and escalation manager). The employees will need to enter information, such as when they are on holiday, into the system for a roster to be produced.*

*As you can see on the screen there are several wireframes that have been created to show you the layout of the application. ON the left of the screen you can see the employee application which will be where the majority of traffic will be... TALK ABOUT EACH PART GOING INTO DETAIL ABOUT LAYOUT.*

*On the left side of the application you can see a menu bar which will list all the employees. Where the user will be able to drag the name of an employee onto the time sheet and be able to see whether they can work at that time or not, from rigorous testing based on the requirements given.*

*IF the person can fit at that specific time then the box turns green and is filled, whereas if not the box will turn red and provide reasoning as to why they aren’t able to work at that time will pop down underneath the time slot.*

*After completing the time sheet the manager is then able to save and manipulate it as to how they want to as long as it meets the conditions provided by using the menu bar above to view the timetable, edit it and removing it.*

*Whereas on the right, it is showing the admin application which is going to be used by the managers to deal with requests, override the rota etc. As you can see this structure is...... TALK ABOUT EACH PART GOING INTO DETAIL ABOUT LAYOUT.*

Summary of the key highlighted points

What we ae going to speak about?

Rostering

Find the disadvantages with the other commercial rostering systems

Shown that we have researched them and how we can provide a better system that’s bespoke

To the company.

Make up designs for a demo of a rough idea of how the system is going to look

Work on the speech

Research email protocol, ai method for doing the work

What systems are we planning to use to implement the different features on the project

Use demos for doing it.

Second part - Technical analysis

Leading by research on other commercial applications currently on the market and list out their disadvantages

How will the website be designed, implemented creating wireframes for the overall design

Left side is a menu with a list of employees