

Expression of Interest	
Project Title	Support Engineers Rostering
Organisation or Supervisor	Capital One
Contact person	Madhu Prashanth
Contact email	madhu.prashanth@capitalone.com
Team Members	
Name	Email Address
Kejia Wu	scykw1@nottingham.ac.uk
Liam Orrill	psylo@nottingham.ac.uk
Tajin Tasnuva	psytt1@nottingham.ac.uk
Xuanhao Li	scyx13@nottingham.ac.uk
Nicole Millinship	psynm6@nottingham.ac.uk
Gurjyot Kaur	psygk2@nottingham.ac.uk
Description of Team Skills (You must provide clear evidence of to what extent the team has the Highly Desirable and where possible the Desirable Skills detailed on the Original Project form)	
<p>Project Motivation:</p> <p>Our team's interest towards this project has stemmed from the fact that presently the task being carried out by the manager could be redundant and time consuming. Creating a web application which automatically works out the roster would be much more beneficial, save the manager a lot of time and also provide better results.</p> <p>Capital One Financial Corporation is a diversified international enterprise based on investment financing. We are really interested in human resource managing and hope our project could be applied by a great company like Capital One.</p> <p>Project Understanding:</p> <p>The objective of this project is to develop an auto-rostering website for Capital One's engineers. This system must obey some certain criteria, sudden changes should be handled smoothly and the website should be able to generate a report on engineers' on-support times. An auto-email system could be considered as an extension.</p> <p>Highly desirable skills and desirable skills:</p> <ul style="list-style-type: none"> <i>Experience in website producing:</i> <p>All of our team members have built functional websites independently last semester.</p> <i>Experience in Java programming:</i> <p>Every member of our team has developed several programs in Java and other programming languages.</p> 	

- *Experience in using rostering software:*

Most of our team members have experience in manipulating rostering software such as Time Tree mobile applications.

- *Experience of applying AI methods:*

Each member of our team has studied AI last semester and have a good understanding of applying AI to real-world problems such as optimisation.

- *Experience with version control by applying Git:*

All of our team members have used Git in an academic or business environment.

- *Knowledge of Software Engineering:*

Most of our team members have a good command of software engineering.

Preliminary Analysis and Solutions:

After some research done by our team, we listed out six main points to analyse:

1. According to existing examples online such as Deputy and findmyshift, we planned to develop two main webpages. An administrator webpage for managers and an employee webpage for employees. Although this method increases our workload, the clients could receive a better UX.
2. We noticed that current commercial rostering web applications wouldn't be able to implement the specific criteria of this project. Also, they aren't user friendly, which makes it harder for managers to manipulate and use. Moreover, they don't support report generating, which means that the managers' workload will be increased.
3. To develop the automated email system, besides the approval requests, we would like to enable our email system to email the manager when one of the employees is absent. We have researched email protocols like SMTP. Since we only need to send out emails, we considered SMTP will be sufficient.
4. We want to challenge ourselves by applying AI methods to automatically complete the employee rostering in the end of this project. It could be achieved by several different search methods.
5. We have considered different JavaScript frameworks to design the website, including AngularJS and VUE. Some of our team members have already begun learning about these frameworks, but they appear to be too time-consuming to learn.

6. Our team administrator should ensure the code follows <<clear code>> standard, which maintains project code's developability and readability. We planned to use Microsoft Teams to conduct our sources and minutes. Besides our campus GitLab repository, we planned to use our personal GitLab accounts as well.

Project Management:

We have planned to use a hybrid of agile and incremental development method throughout the project. The main process has been divided into three stages.

In the first stage, Gurjyot will create the UI, whilst Liam and Nicole will create the administrator system and Kejia and Xuanhao will be responsible for the back-end development. Teana will work on the employee webpage. This stage should end at the end of February.

In 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 end at the end of April.

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.

Progress Tracking:

Our team leader will offer his phone number and a link to his GitHub account to project's contact person. By following this link, a weekly updated conference minutes could be accessed. In this way the contact person could track the progress of our project whenever he or she likes. For further information or deep communication, our team leader would be glade to raise an online or offline conference.

(Max 750 words)

Date of Submission of EoI	16 October 2019
Date of Pitch	22 October 2019
Notification of award	

Please make sure to attach a CV for each member of the group.