

PROJECT SPECIFICATION - Project (Technical Computing) 2021/22

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Degree Course:	BEng (Hons) Software Engineering
Title of Project:	RendezVous

Elaboration

Currently, the employee-worker relationship is changing at an apparent rate. As more workers are employed under zero-hour contracts, employee loyalty is dwindling; off the back of the COVID-19 pandemic, employee turnover rates have increased; and the anti-work movement is motivating an outright rejection of employment.

As such, employers need to be sure their employees are working as required; i.e., when they start and stop work, where they work, how much work they complete. Some roles can be easily assessed, such as a software developer, whereas some are hard. For example, events management roles can be extremely short-term, covering many different roles, and employees can be sourced from many facets: a permanent contract with the venue through to casual recommendation when desperate.

This project looks at reducing/eliminating the responsibility placed on managing & supervising employees to monitor attendance in these environments with a software application named RendezVous.

This also presents an intrinsic problem, in that conventional authentication techniques do not account for conspiring users. Normally, user authentication is implemented to secure an individual's private information and restrict access to it exclusively to the user. Conversely, a system which handles clocking in and clocking out of jobs may instead motivate employees to widen access to their account, allowing other employees to clock in/out on their behalf and collect additional, false pay. As such, it needs to minimise/eliminate the ability to imitate other users.

Project Aims

- Research existing applications concerned with clocking-in employees
- Investigate ways to identifying people, locations, and assets
- Create a concept and implementation of the identity/location verification process
- Design the system (architecture, UI)
- Develop and test the application
- Evaluate the final system

Project deliverable(s)

The project will be composed of two systems: a RESTful API for the backend; and a website for clocking in/out.

Developing the RESTful API will be achieved using .NET Core, as it was the main technology with which I worked on placement. Alongside its high performance, it has native support for authentication, dependency injection, and ORMs such as Entity Framework; highly-capable development tools like Visual Studio and Rider, both available for students; and almost any design pattern/architecture can

be chosen using either C# or F#.

The site will be developed using Vue 3, as it offers a very wide additional frameworks/libraries to handle all the fundamental aspects of the site, e.g., Vuex for state management or Vuetify for UI development. Vue is also a familiar choice, as I worked with it on multiple projects during my placement.

Since .NET Core is cross-platform, it can be deployed on any OS along with the website.

I will follow an agile approach, managed using a Kanban board structured with epics, user stories, and tasks.

BCS Code of Conduct

I confirm that I have successfully completed the BCS code of conduct on-line test with a mark of 70% or above. This is a condition of completing the Project (Technical Computing) module.

Signature: Joshua Sexton-Jones

Publication of Work

I confirm that I understand the "Guidance on Publication Procedures" as described on the Bb site for the module.

Signature: Joshua Sexton-Jones

GDPR

I confirm that I will use the "Participant Information Sheet" as a basis for any survey, questionnaire, or participant testing materials. The participant information sheet form is available on the Bb site for the module and as an appendix in the handbook.

Signature: Joshua Sexton-Jones