Initial Plan - Venues Assistant Staff Management System (VASP)

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Project Description

Cardiff University's Student Union; referred to as CUSU throughout this document, employs between two hundred, and three hundred part time casual student staff, who work in the Taf, Y Plas night club, and the Y Plas catering outlets.

These Venues Assistants, and there supervising counter parts Team Leaders, work on a zero hour contract basis, and book their own shifts through an online portal. This portal was created a number of years ago, and was intended only as stop gap measure, it has out grown the needs of the CUSU business and requires serious improvement.

As part of my work as a Venues Team Leader alongside my degree choice, I was approached by a member of the Venues Management Team who asked if this project would be suitable for my final year project.

A meeting with members of the Venues Management Team provided a core set of aims for the project, and there expectations. It is also provided a more in depth list of extra features that they felt would be nice for them to have, but where not essential, and could be developed at a later date. A detailed list of these are provided in the Project Aims and Objectives section of this report.

The core of this project is split into three distinct sections, the ability for Venues Assistants to book shifts, the recording of clocking in and out times, and the generation of pay roll information.

In order to maintain consistency with the current system, and allow familiarity for the end user it has been requested that the shift booking interface remains as a calendar in a monthly format, with the shifts available to book being shown in start time order under each day of the month. Shifts that have already been booked by the member of staff would also show in time order, clearly distinguishable from those which are available to book.

Staff clocking in or out for their shift is not currently recorded on a computer based system, a sheet is printed out at the start of the day, and staff fill in the time they start and finish their shift. This new system will allow for staff to record this information on the system, either by CUSU providing tablet computers at strategic points in the building, or by allowing staff to use their own personal mobile phones. CUSU has asked that I provide information on the benefits and drawbacks on both systems in order for them to make an informed decision. It is important that the system allows staff the ability to make corrections, if they forget to clock in, or to clock out, and to highlight this to the staff member at the earliest opportunity. This may need to include the ability for a manager or a Team Leader to verify the information provided by the member of staff. This will protect the business from potential fraudulent actions by a single member of staff.

Payroll information is generated by taking the paper sheet discussed above, and manually entering this information onto a spreadsheet, this is then passed to the pay roll department who arrange for payment to be made into the staff's bank accounts. This process will be automated in the new system, so that the information from staff clocking in and out will be passed directly to the payroll department in a format which they are able to use with their system.

My workflow for this project will start with examining what would best suit the system in terms of a database backend, as well as a front end, then looking at parts of the system CUSU have asked me to make recommendations on. Then working on a schema for the database, before beginning to construct the system.

Project Aims and Objectives

Pre Implementation Objectives

1. The project will be implemented using a System Lifecycle Model to be decided on after further research, this will allow me to gather feedback from the user at appropriate moments, and then implement this in order to improve the system.
2. Carry out research and if required prototyping in order to determine what the most suitable database software would be to form the back end of the system. Due to the complex nature of the information that needs to be stored it is assumed that some form of database will be required.
3. Prototype, and gather information on the most suitable languages and technologies to develop a web based front end to the system. Noting that it must be cross platform, and cross device compatible. A key requirement of CUSU is that the system is web based, not requiring any software to be installed other than a web browser on any machine used to access it.
4. Carry out research into solutions for staff recording there clock in and out times on the system. CUSU have suggested two methods of how this could be achieved, but in order to diligent I will need to ensure that other possible solutions are considered where appropriate.
5. Design a schema for the database; compatible with the particular format chosen in part 1 above. Ensuring that the schema captures all of the information required in order for the system to function. Also leaving it open for expansion at a later date if needed. Schemas designed but put aside for whatever reason should be kept in order to be reviewed at a later date.

Implementation Objectives

1. Implement the ability for staff to book shifts from an available pool, based on their rank within the venues department; a staff member must be a Team Leader in order to book a Team Leader shift for example, as well as limiting them to booking a defined number of shifts within a defined time window.
    a. Allow the person booking shifts to reserve the shifts for a defined period of time, and either confirm the booking before the time window expires, or release them back to the general pool for another person to book.
    b. Allow management staff to create new shifts, and set the definition of the time windows given above.
    c. Estimate the persons pay for that pay cycle based on the shifts they have booked.
2. Implement the ability for staff to record the time at which they clock in, and clock out for a shift on the system, the method of entry of this information is to be decided based on the parameters given above.
    a. Allow a staff member to select if it's a clock in, or a clock out they wish to record.
    b. Alert the member of staff if they haven't clocked in or out correctly for a shift and allow them to correct this with management intervention.
3. Generate pay roll reports based on the information obtained from staff recording there clock in, and clock outs. In a format which is compatible with the pay roll departments systems.
4. Calculate on request the optimum positions for staff within the venue for a given shift. Based on a location being given an input of an optimum amount of staff to be on it at any one time, and load balancing this across all the locations in use at that time.

Work Plan

Ongoing

- Minimum Bi-weekly meetings with project supervisor
- Supervisor has agreed an 11am Monday slot that should be mutually convenient most weeks.

Week 1 January 25th

- Develop the initial project plan.
- Meet with project supervisor to discuss the finer points of the project and agree on the content of the initial project plan
- Outline a Work Plan

Deliverables – Initial Plan

Week 2 February 1st

- Research the most suitable database type to use for the back end of the project, carrying out small prototypes in required
- Research the most suitable languages and technologies to use to display the front end of the system
- Research the systems available to record staff clocking in and out for their shifts.
- Confirm acceptance criteria with CUSU

Deliverables – Conclusion on database and language systems

Week 3 February 8th

- Design a database schema for the chosen style of database

Deliverables – Database Schema, conclusion on clocking in and out

Week 4 February 15th

- Meeting with project supervisor to confirm happiness with progress so far
- Decide on architecture design for system
- Begin project implementation
- Implement staff being able to book shifts online

Deliverables - ?

Week 5 February 22nd

- Implement management being able to add shifts to the pool
- Add pay estimation
- Carry out user feedback exercise

Deliverables – Demonstration of system so far to project supervisor, result of user feedback exercise

Week 6 February 29th

- Implement staff being able to clock in and out
- Implement management intervention for clocking in and out
- Carry out user feedback exercise

Deliverables – Result of user feedback exercise

Week 7 March 7th

- Implement Pay roll features
- Carry out user feedback exercise

Deliverables – Results of user feedback exercise

Week 8 March 14th

- Implement Load balancing feature
- Carry out user feedback exercise
- Meeting with project supervisor to discuss progress on system so far

Deliverables – Demonstration of system so far, result of user feedback

Week 9 March 21st

- Closed Testing

Deliverables – Testing Outcome

Week 10 March 28th

- User Testing

Deliverables – Testing Outcome

Week 11 April 4th

- Implementing Testing outcome
- Bug Fixes
- UI Improvements

Deliverables – Demonstration of System, Testing write up

Week 12 April 11th

- Evaluation

Deliverables - N/A (Easter Recess)

Week 13 April 18th

- Final Project Write Up

Deliverables – N/A (Easter Recess)

Week 14 April 25th

- Final Project Write Up

Deliverables – N/A (Easter Recess)

Week 15 May 2nd

- Proof read final draft
- Final project supervisor meeting to discuss final draft
- Submit final report

Deliverables – Submission of Final Report

Ethics

Although this project does not fall under the guidance provided by the School of Computer Sciences ethics policy, nor that of Cardiff University's, it is important to note that CUSU have granted me access to the current shift booking system in order for me to better understand how it works, and exactly what it is that they require.

This allows me to view the personal details of staff who work at CUSU, and also to view shifts they are working, and to edit them. It is important that I'm mindful of this access, and ensure any information I see remains strictly confidential. The use of this information for my project will not require me to keep any notes, written or otherwise on the personal data, this should ensure I do not breach any parts of the Data Protection Act.