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**School of Computing**

**and**

**Digital Technologies**

**Software Projects**

**(55-407815-AF-20245)**

**Group Project**

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# 3. Group Project

## 3.1 Client Background

Our client is Mrs. Nurul Izrin Md Saleh, from Malaysia. She has commisioned us to construct a smart energy management dashboard that may be used by local government.

## 3.2 Software Project Artefacts

### 3.2.1 Users

The users are as follows; an administrator, who has access to every feature and can manage the system, such as by adding and removing other users; network managers, who can access ordinary features and create reports for all geographical areas; and city councillors, who can access ordinary features only for the geographic area within which they operate.

### 3.2.2 User Stories and Acceptance Tests

|  |  |  |
| --- | --- | --- |
| **ID** | **Story** | **Acceptance tests** |
| ADM-01 | As an administrator, I want a special controls dashboard so I can manage the system. | * Verify administrator account can access controls dashboard * Verify non-administrator cannot access controls dashboard * Verify administrator can add a user * Verify administrator can remove a user |
| ADM-02 | As an administrator, I want to be able to view all data within the system. | * Verify administrator can view energy usage for the entire system * Verify administrator can access analytics for the entire system * Verify administrator can generate reports for the entire system |
| NET-01 | As a network manager, I want to be able to view all data within my network. | * Verify network manager can view energy usage for own network * Verify network manager can access analytics for own network * Verify network manager can generate reports for own network * Verify network manager cannot view or process data outside of own network |
| NET-02 | As a network manager, I want to be able to compare and contrast energy consumption over different time periods. | * Verify network manager can layer multiple energy consumption graphs * Verify reports can include layered graphs * Verify network manager can specify time period for these overlays |
| NET-03 | As a network manager, I want all of the analysis tools available to city councillors to be available to me also. (Note: still only for own network) | * Verify network manager can use interactive dashboard as city councillor can (CIT-02) |
| CIT-01 | As a city councillor, I want to be able to view all data within my network. | * Verify councillor can view energy usage for own network * Verify concillor can access analytics for own network * Verify councillor can generate reports for own network * Verify councillor cannot view or process data outside of own network |
| CIT-02 | As a city councillor, I want an interactive dashboard to make it easy to interact with the system. | * Verify user is presented with interactive dashboard * Verify dashboard links to analytics * Verify dashboard links to reports |
| CIT-03 | As a city councillor, I want all of the analysis tools available to network managers to be available to me also. (Note: still only for own citty) | * Verify network manager can compare and contrast energy consumption as city councillor can (NET-02) |

## 3.3 Software and Its Presentation

### 3.3.1 The Software Prototype

You are expected to submit the project, including all of its components (e.g., codebase), compressed in a zip file (or 7z). The file should be named “GroupProject\_(Your name)” (i.e., *GroupProject\_Group21*) and must be uploaded to Blackboard as directed in the relevant submission point.

### 3.3.2 Video Presentation

The project must be showcased in a video recording of up to 15 minutes. We will stop watching after the 15th minute.

<https://shu.cloud.panopto.eu/Panopto/Pages/Viewer.aspx?id=b35aedd7-0a14-401c-b664-b26b00ba566b>

## 3.4 Evidence of Collaborative Work

This may include screen shots (in **png** format) of using a tool that supports collaborative work, such as GitHub, and your own unique contributions, e.g.

<https://github.com/zairulmazwan/myPuzzle.git>

Make sure that all your tutors will be able to access your account by adding them as a collaborator on the project via the GitHub website (<https://docs.github.com/en/github/setting-up-and-managing-your-github-user-account/inviting-collaborators-to-a-personal-repository> ). Their GitHub usernames can be found in Blackboard (refer to /Staff Details).

## 3.5 Incorporation of Formative Feedback

Provide evidence of how you evaluated and acted on the formative feedback you received from your client, e.g., minutes of meeting, copies of emails, together with action plan.

## 3.6 Peer Assessment Form

This form must be filled in as a group. Each member’s contribution to the project must be clearly stated. Finally, each member must be rated out of 10 (10 being the highest contribution and 0 being no contribution at all). This form can be added to Appendix.

# 4. Evaluative Report on Legal, Social, Ethical and Professional Issues

## 4.1. Relevant Issues

Identify two or three issues that specifically relate to your project (this could be GDPR, copyright, accessibility, testing, etc.), and briefly explain their relevance to your project.

## 4.2. Discussion

Discuss what impact these will have on the project. Specifically, you may discuss how these issues will impact on the way you will transition your prototype / design you developed in Requirements and Design stage to a production-quality (where possible). As well as supporting your discussion with references, throughout your work you are also expected to identify recent public examples that have been reported in the news (or other reputable sources), for example if you are creating an application that will store personal data, a useful example would be to mention the fine British Airways received for being in breach of GDPR, all of which should be cited using the APA format.

# 5. References

Your reference list should contain citations to external sources that have been relied on throughout your project’s development and writing this portfolio. The citations should conform to the APA referencing system[[1]](#footnote-2), e.g.

Fitzgerald, J., & Hayward, P. (2009). Inflamed: Synthetic folk music and paganism in the island world of The Wicker Man. In P. Hayward (Ed.), Terror tracks: Music, sound and horror cinema (pp. 101-111). London: Equinox.

Melchers, G., Shaw, G., & Shaw, P. (2013). World Englishes (2nd ed.). Retrieved from http://lib.myilibrary.com

Miller, D. (2016). Social media in an English village. https:// doi.org/10.14324/111.9781910634431

TED. (2007, January 6). Sir Ken Robinson: Do schools kill creativity? [Video file]. Retrieved from https:// www.youtube.com/watch?v=iG9CE55wbtY

British Film Institute. (2016). BFI Film Fund. Retrieved from http://www.bfi.org.uk/supporting-uk-film/film-fund

Young, H. (2016, June 2). What do ‘skills’ mean for school governing bodies? [Blog post]. Retrieved from https:// ioelondonblog.wordpress.com/2016/06/02/what-do-skills- mean-for-school-governing-bodies/

# Appendix

## Software Projects- Peer Marking Form

This form must be filled in as a group by honestly evaluating your contribution to the work. Each member’s contribution to the project must be clearly stated. Finally, each member must be rated out of 10 (10 being the highest contribution and 0 being no contribution at all). The highest mark must always be 10, e.g.

|  |  |  |
| --- | --- | --- |
|  | Team member + work done | Mark out of 10 |
| 1 | C H – Scenario Scripts, User Stories + acceptance tests, 50% of prototype | 10/ 10 |
| 2 | O H – Assumptions, Questions, 50% of prototype, further documentation | 10/ 10 |
| 3 | E S – joined discord and contributed a part of the scenario scripts and questions | 2/ 10 |
| 4 | S T – nothing. Did not even join Discord or reach out in any way. | 0/ 10 |
| 5 |  | / 10 |



|  |
| --- |
| Add any comments you feel would be useful for the tutor to know about when assessing marks |
| With regards to the prototype development, work was split 50-50 between C H and O H, with C H responsible for the backend and O H for UI. This was not as intended, as the spec states that all should contribute to programming tasks – unfortunately despite repeated efforts we could not get E S to contribute in any way to the prototype, and we were never able to even contact S T. As such, O H and C H took on significantly more work than originally planned due to the other two members not fulfilling any of their responsibilities, with both O H and C H frequently working into the night to complete the coding that should’ve been done by the other two members.    E H made a contribution on the day of hand-in by completing one of the scenario scripts he was supposed to complete: S T never turned up. As such, this project was almost entirely completed solely by C H and O H, with E S’s contribution minimal and S T’s non-existent. This had a significant impact on the time taken to complete with O H and C H having to make up everyone else’s work as well as their own and has impacted on the project significantly. |

|  |  |  |
| --- | --- | --- |
|  | Team member + work done | Mark out of 10 |
| 1 | **L C**  **Week 1:**  Understanding assignment doc research, schedule for group meetings, allocating work to everyone,  **Week 2:**  Class diagram for meeting scheduler with S C and A J to better understand the assignment requirements in terms of the prototype, discussing relationships between classes.  **Week 3 :**  Started looking at user stories, wrote a list of questions to ask about the system requirements, started of the general assumptions to be made about the system  **Week 4:**  Worked on UI design, started work on creating a list of participants  Attending user story workshop  **Week 5:**  Implemented UI design on project in visual studio.  Wrote user stories for the non-important participants.  **Week 6:**  Finished displaying user name in ComboBox.  Displayed user type in text box depending on the user selected. Added 2 more forms. 1 for the participants page. 1 for initiator and 1 to display all the meetings.  Startined created instances for meeting objects to be used for the system.  **Week 7:** Added back buttons to initiator and participant form, Helped populate tables for meeting objects for initiator and participant, Finished adding lists to initiator form and started adding labels to participant form.  Passed in user object to participant form, changed how the invited list is initiated, now created in participant constructor, populated meetings pending table, fixed listboxes.  Helped to add in checks for null value when in the table layout panel. Implemented button but needs fixing. adds to schedules list and displays it in the scheduled box for a ps however errors when trying to remove from invite list.  Fixed loading instances of participant forms so that tables were correct when edited  Fixed forms not loading properly, added pending list to participant, changed how accept button works, tried to change status of meeting per participant  populated the confirmed participants list, added slot buttons depending on list of slots  fixed error with slots buttons, null checks for initiator rows, created check slots function  Fixed slot buttons not appearing and consideration of location  Helped implement importance function  Finished off User stories  Created PowerPoint with all user stories in , record some audio and screen recordings for video, finished off scenario scripts | 10/ 10 |
| 2 | **S C**  **Week 1**  Worked on understanding of the assignment doc  Did a research about prototyping - its purpose, lifecycle and how it should be done.  **Week 2**  Class diagram for meeting scheduler with L C and A J to better understand the assignment requirements in terms of the prototype, discussing relationships between classes.  **Week 3**  Worked on the User Stories - Written a list of questions to ask about the system requirements and general assumptions about the system.  **Week 4:**  Worked on UI design, started work on creating a list of participants  Attending a User Story workshop.  **Week 5:**  Implemented UI design on project in visual studio.  Wrote user stories for the non-important participants.  **Week 6:**  Finished displaying user name in ComboBox.  Displayed user type in text box depending on the user selected. Added 2 more forms. 1 for the participants page. 1 for initiator and 1 to display all the meetings.  Startined created instances for meeting objects to be used for the system.  **Week 7:**  Helped Amina working on the code - creating tablelayoutpanel checks for both initiator and participant forms.  Worked on user stories and scenario test scripts.  Worked on the PowerPoint presentation  Recorder Videos for Guests, Non-important and part of Important participants | 10/ 10 |
| 3 | **S J**  **Week 1:**  Discussed the plan for the assignment with group.  Read through the spec to gain a better understanding.  **Week 3:**  Worked on user stories within the meeting scheduler system.  **Week 4:**  Worked on UI design  **Week 5:**  Wrote user stories for important participants and disabled participants  **Week 6:**  Attended group meeting | 4/ 10 |
| 4 | **A J**  **Week 1:**  Did research as a group on call to understand the assignment.  Finished notes on assignment spec to understand what was needed to be done.  **Week 2:**  Class diagram for meeting scheduler with S C and L C to better understand the assignment requirements in terms of the prototype, discussing relationships between classes.  **Week 3 :**  Implementing classes into VS.  Discussed user stories within the scheduler system.  Wrote a document about questions to ask whilst discussing with group mates.  Discussed and wrote down assumptions to be made about the system.  **Week 4:**  Worked on UI design and started creating a list of participants to be outputted in a list box.  Attended Workshop for User Stories on Friday the 20th November.  **Week 5:**  Worked on UI (advised S C). Attempted finishing user stories (Initiator and Guest Speaker)  **Week 6:**  Finished displaying user name in ComboBox.  Displayed user type in text box depending on the user selected. Added 2 more forms. 1 for the participants page. 1 for initiator and 1 to display all the meetings.  Started creating instances for meeting objects to be used for the system.  **Week 7:**  Created tablelayoutpanels for initiator and participant forms.  Helped populate the tablelayoutpanels.  Added in checks for tablelayoutpanel in for both initiator and participant with Soraya.  Allowed meetings pending into a list box which when selected is able to be cancelled.  Implemented slot button functions in the initiator form.  Created a Meeting Button in the Initiator form which creates a new meeting and asks for location, title, participants and slots.  Helped with creating checks in the code for meeting slot clashes and location clashes with Lauren.  Fixed null slots list checks.  Helped implement important participator checks with Lauren.  Worked on User Stories with S C and L C.  Recorded part of the video on User Stories for the Initiator. | 10/ 10 |



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| --- |
| Add any comments you feel would be useful for the tutor to know about when assessing marks |
|  |

1. <https://libguides.shu.ac.uk/ld.php?content_id=35688228> [↑](#footnote-ref-2)