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| Group number | 4 | Date: 01/06/21 |  |
| Project manager | John Anwana | Sponsor: Dr Emmanuel Ogunshile | *24 Hour Solar Power Generating System* |
| Purpose of the group |  | | |
| Mission | Design and implement an application for modelling, monitoring and controlling a 24-hour solar power generation and  distribution system that will help a homeowner to reduce their TCO. | *Mission 2* | *Mission 3* |
|  | *Mission 4* | *Mission 5* | *Mission 6*  *Use the number of boxes as appropriate.* |
| Objective | Generation of a requirements / specifications tree. | Demonstration of how calculations are performed and can be reviewed | Develop a Web application to monitor and control solar panel system |
|  | *Objective 4* | *Objective 5* | *Objective 6*  *Use the number of boxes as appropriate.* |
| Scope of the project |  | | |
| Name and UWE e-mail of the team members: | John Anwana- [John2.Anwana@live.uwe.ac.uk](mailto:John2.Anwana@live.uwe.ac.uk)  Dilshani Herath Mudiyanselage- [dilshani2.Herathmudiyanselage@live.uwe.ac.uk](mailto:dilshani2.Herathmudiyanselage@live.uwe.ac.uk)  Irene Ofori Asare- [Irene2.Oforiasare@live.uwe.ac.uk](mailto:Irene2.Oforiasare@live.uwe.ac.uk)  Pratiksha Patel- [Pratiksha2.Patel@live.uwe.ac.uk](mailto:Pratiksha2.Patel@live.uwe.ac.uk)  Janith Sooriyathilaka- [Janith2.Sooriyathilaka@live.uwe.ac.uk](mailto:Janith2.Sooriyathilaka@live.uwe.ac.uk) | | |
| Roles and responsibilities | Team roles Project Manager – John Anwana  Secretary – Irene Ofori Asare  Communication Officer – Irene Ofori Asare  Design Lead – Dilshani Herath Mudiyanselage  Programming Lead/Fullstack developer - John Anwana  System Architect – Janith Sooriyathilaka  UI/UX Designer – Irene Ofori Asare  Frontend Developer – Pratiksha Patel Project manager According to Ian Sommerville (2016) the primary goals of the PM are   * to deliver the software to the customer at the agreed time * to keep overall costs within budget * to deliver software that meets the customer’s expectations * to maintain a coherent and well-functioning development team.   With this background and with the context of this project, the responsibilities of the project manager are:   * Planning, estimating, and scheduling project activities and assigning tasks to team members. * Supervise the work and ensure it is executed to the required standards * Monitor progress so that the development is on time and within budget * Identify, assess, monitor, mitigate/avoid risks that may affect the project, producing a risk register document in the process. * Manage and motivate team members, maximising their potential to successfully execute the project. * Keep track of team members contributions to project. * Prepare a range of reports from detailed technical information to management summaries and updates for clients/Senior management on project status. * Produce a business proposal for the project describing the objectives, execution strategy, cost and schedule estimates, and justification for the selected project. * Identify and implement the optimal project management approach for the project.  Design lead Design Leads are central to product delivery. They are directly responsible for the creativity and quality of the project through research driven development of interaction design, user experience design and service design.  Responsibilities include   * Conduct user requirements analysis. * Develop a conceptual model of project. * Design the Information Architecture and wireframes with user flows that define the user interface and experience of the solution. * Produce user requirements specifications, personas, storyboards, scenarios, flowcharts, design prototypes, and design specifications. * Effectively communicate and document research findings, conceptual ideas, detailed design, and design rationale both verbally and visually. * Design simple, elegant, data-driven, user-centric experiences. * Build functional prototypes to validate and test your designs. * Work closely with development teams to ensure that design specifications are implemented. * Collaborate and integrate client’s feedback into designs.  Programming Lead/Fullstack developer The Lead Programmer is responsible for leading, guiding, developing, motivating and managing a team of programmers while collaborating with the design team to ensure successful project delivery.   * Lead and manage a programming team at technical and personnel level. * Set up coding best practices and conduct code reviews to ensure compliance. * Develop a review process at regular intervals during development lifecycle and identify areas for improvement. * Produce technical documents including run book. * Ensure code is properly commented. * Develop backend components based on designs from the system architect. * Develop API for Backend component and integrate with Frontend. * Identify and aid in documentation of risks involved in development. * Translate the client’s requirements into technical requirements for development team.  Systems Architect The role of the Systems Architect is to understand the client’s desired outcomes for the project, break those outcomes down into component parts and decide on the right architecture to use in building the solution taking into account the functional and non-functional requirements, existing and new technologies, available resources and personnel, to produce the most favourable outcome for the client. Responsibilities include:   * Conduct system design activities including overall system architecture, system components, classes, objects, methods, and other software components. * Design data structures and database models that allow for easy querying and organization of data in the most meaningful way. * Aid in the development and review of system design specifications. * Produce sections of design document relevant to role including UML model of systems and components. * Produce documentation justifying architectural and framework technology choices showing other potential options and reasons they were not selected. * Ensure integrity of designed systems through validation processes such a testing.  User Interface/User Experience (UI/UX) Designer The primary role of the UI/UX developer is to create user centric designs based on client’s requirements. Responsibilities include:   * Coordinate with design lead to create user flows, wireframes, prototypes and mock-ups. * Translate the client’s requirements into style guides, design patterns and attractive user interfaces. * Design UI elements such as buttons, inputs, cards, navigational components, and informational components such as graphs, charts and tables. * Creating original graphic designs (e.g. images, charts, graphs and tables). * Create sitemaps. * Identifying and troubleshooting UX problems (e.g. responsiveness).  Front-End Developer The FE developer is responsible for visual appearance and functionality of the web application being developed. It involves converting and coding the design prototypes to a working HTML, CSS and JavaScript website. The responsibilities include:   * Creating the web application using the technologies specified by the system architect. * Coordinating with the design and programming team to develop the solution. * Producing quality and well documented/commented code following the DRY coding principles. * Implement design specification and principles from design team. * Develop tests for web application as part of QA. * Document design strategies and paradigms employed.  Secretary/Communication Officer Responsibilities include:   * Handle all internal communications, ensure the team is in sync regarding schedules, events, tasks, meetings etc. * Take concise and detail minutes of team meetings. * Editing and proof reading of all team documents in order to maintain uniformity and quality. | | |
| Expectations | 1. All team members must attend the lectures, tutorial and team meetings. 2. All e-mails must be responded to within 3 working days. 3. Members must ensure any submitted work is plagiarism free. 4. Every member must contribute ideas to the process. 5. All tasks must be completed within the time schedule. 6. All submissions must be relevant to the task and useful otherwise they do not count as contributions. 7. Teams will hold daily scrum meetings to review progress and prioritize tasks 8. Team shall peer review all task submissions from individual team members. This includes making notes and observations on completed tasks. Notes expected to include constructive criticism meant to improve the work submitted. 9. Team shall keep track of all contributions in logbook developed for this purpose. | | |
| Initial plan (**This will evolve over a period of time**) | Develop Software Specification   1. Feasibility Study 2. Business Proposal 3. Risk Analysis 4. Requirements documentation 5. Mathematical modeling/Simulation of Solar panel generator   Software Design and Development   1. Architectural Design 2. Database Design 3. UI/UX Design 4. Components Design and Development   Software Validation   1. Development of test cases 2. Unit and component testing 3. System testing | | |
| Strengths of the group | Programming experience  Research capabilities  Designing UI/UX  Web technologies.  Systems and Database development  Simulation experience. | | |
| Weaknesses of the group | Communication and meeting Scheduling | | |
| Mitigation strategy | Create proper communication channels – appoint communication officer.  Select most convenient time for group meetings | | |
| e-Signed |  | | |