Thursday, 14 October 2021

Advanced Software Engineering Group Three

Project Plan

**Introduction**

This document will outline the structure of the group and its capabilities. It will be agreed on by the group and customer but maybe subject to change as the software development process develops. This document will be broken in to three sections:

* Organisation Plan
  + This will detail the team leader along with his/her responsibilities within the group project
  + This will detail the individual personnel in the team with their roles and responsibilities within the group project, along with their prior experience and current skillset
* Conflict Resolution Plan
  + This will describe in detail how the group will react to disruptive events
  + This will provide one example of a potentially disruptive event and how the group would manage this, lead by the product manager
  + This will describe the process that will be followed if a conflict arrises during the peer assessment
* Peer Assessment Plan
  + This will describe how the group will assess individual performance as part of the group project

**Organisation Plan**

Group three consists of five members detailed below, along with their preposed roles and prior experience and skillset:

* **William Chaundy**
  + Role: Team Leader / Product Manager
  + Responsibilities:
    - Liaise directly with the customer to understand and represent customer needs
    - Define a vision for the product
    - Prioritise product function and capabilities
  + Previous experience / Skillset
    - Technical experience
      * Python / Numpy / Pandas for processing large datasets
      * Machine Learning using TensorFlow / Keras
    - Non-technical experience
      * Leading large and small teams in a healthcare setting
* **Harry Difolko**
  + Role: Lead Engineer
    - Architect product development to meet customer needs
    - To breakdown and delegate programming tasks in to manageable and workable segments
    - To provided guidance and support to members of the group with little or no prior coding experience
  + Previous experience / Skillset
    - Web application development
    - Javascript / React / React Native
* **Piyush Agrawal**
  + Role: Lead Engineer
    - Architect product development to meet customer needs
    - To breakdown and delegate programming tasks in to manageable and workable segments
    - To provided guidance and support to members of the group with little or no prior coding experience
  + Previous experience / Skillset
    - Computer engineering
    - Machine Learning
    - .NET / PHP / Python
* **Oliver Holmes**
  + Role: UX Designer / Front End Developer
    - To develop a user friendly product with workable interface and frictionless workflows
  + Previous experience / Skillset
    - Natural sciences
    - Graphics and animation
* **Valentin Röttgen**
  + Role: Software Engineer / Data Scientist
    - Database management and data orientated tasks
  + Previous experience / Skillset
    - Computer and data science
    - Python / Java

**Conflict Resolution Plan**

Below outlines the plan for conflict resolution. Broadly speaking the detailed steps will be followed however conflict management is a dynamic process and deviation from the framework maybe necessary to achieve the best results. Also documented is an example strategy of how our plan may be implemented, and a specific conflict resolution plan for disagreements occurring during the peer assessment.

* In the event of a conflict within the team:
  + Ascertain information:
    - The product manager (or delegated team member if product manager is the subject of the conflict) will acquire as much information as possible about the potential issue prior to taking action. This will involve talking openly with the individual or individuals where possible and understanding the exact nature of the problem (e.g. lack of time to carry out tasks, disagreements amongst engineers etc).
    - This will require effective communication, active listening and an analytical approach.
  + Support where possible:
    - The primary aim will always be to engage the individual or individuals as much as possible, and to support them in their work so that they may achieve everything set out in the original plan, and maintain a good working relationship with the rest of the group.
    - Any issue raised will require a plan on how best to proceed. This must evaluate whether the issue has been solved or whether further assessment is required:
      * This may require re-delegation of tasks, extension of internal deadlines and technical support from other team members.
  + Group decision about further action:
    - If the individual or individuals can not be supported or current engagement is looking to be detrimental to the group and project outcome a group decision will be taken on how to proceed. Because of the small group size (currently five members) this decision will be made by the entire team and not a subset of the team.
  + Re-delegation of tasks:
    - Any outstanding tasks will be re-assessed in detail, taking in to account ease-of-action, estimated time to completion and overall priority.
    - Re-delegation of tasks will be carried out ensuring, where possible, that the skillset fo the team member matches the skills required. When this is not possible adequate training and support will be provided.
  + On-going dynamic assessment of situation:
    - The situation will be continually reassessed for two reasons:
      * To ensure all team members are coping with change in workload and the project is continuing inline with its current deadlines.
      * To reassess nature of initial issue and where possible, re-integrate the individual or individuals to the overall project.

**Example conflict:** During a meeting in week six it is noticed that one of the lead engineers has not submitted anything to Github for two weeks and is not present at the meeting, either in person or via zoom. This means that the project is now behind schedule.

* We would proceed as follows
  + Ascertain information:
    - Contact the individual and attempt to understand why he/she has not completed their signed project tasks. This should be done in a relaxed, non accusatory manner.
    - Attempt to understand their intentions from here going forward. They may have decided they no longer wish to participate at all, or perhaps they simply need an extra week to get up to speed.
  + Support where possible:
    - If their perceived intentions are inline with that of the team and the project, support will be given to the individual to ensure he or she meets their deadlines. For example the task of setting up and integrating a functioning SQL database maybe given to the UX designer, who has a little experience in database management, with the support of one of the senior backend engineers.
    - A plan going forward would be created. This would be an assessment of the individual after a further short period of time. For example it maybe that he or she has one remaining task which we would like completed by the following week. Success or failure of this would determine the next step in proceedings.
  + Group decision about further action:
    - This would depend on the success of the previous steps but if with adequate support the individual was still underperforming a group decision would be made about how to proceed. If a further two weeks passed and the remain task had still not been completed, and the individual was not attending meetings or communicating with the group the decision maybe made to remove that individual from the project.
  + Re-delegation of tasks:
    - As explained above tasks would be re-delegated to appropriate individuals with appropriate experience or appropriate support.
    - For example if one of the remaining tasks was to construct two relatively simple forms for logging user data, times and dates, this maybe delegated to the project manager under the supervision of a lead engineer as it requires relatively little programming experience and would not take significant time away from customer facing tasks.
  + On-going dynamic assessment of situation:
    - This would take place formally, initially on a week-by-week basis and may progress to a monthly, informal assessment if the project is proceeding as required.
    - If the lead engineer was able to return to the project later down the line, subject to a group decision, he or she would be reintegrated in a controlled, monitored manner.

**Conflict during peer assessment:** In this instance a similar pattern would be followed.

We would proceed as follows:

* + Ascertain information:
    - Actively listen to individual or individuals involved in peer assessment. Aim to understand the exact nature of disagreement and why it has occurred.
  + Aim to resolve in first instance:
    - Aim to come to an agreement on the awarded marks, which will require agreement from all team members.
  + Group decision about further action:
    - If the issue persists a group discussion will take place as to where to proceed next.
    - The next step would be to Involve a third party who can impartially review work carried out by the individual or individuals, compare it to the contributions of the entire group, and re-assess the score given by the peer assessment metric laid out below.

**Peer Assessment Plan**

The peer review plan will use a number of different metrics to determine the overall peer reviewed score for each team member. It will account for prior technical and non-technical experience so that, for example, those without prior web-application development experience are not disadvantaged. As long as each team member has contributed in their assigned role and completed designated tasks within an appropriate time frame, whilst maintaining good working relationships and communication with the rest of the team, they should receive an optimum score.

* Each team member will be awarded a certain number of points determined by the metric laid out below. This will be scaled by the appropriate amount, with rounding to one decimal place, to allow for the allocated 100 points to be distributed appropriately. This will also allow for loss, or change, in number of team members during the project.
* The final peer assessment marks will be agreed on by all members of the team prior to submission.

Below is the metric for assessment of each individual. A maximum of 5 points will be allocated for each assessment criteria:

* Initiative
* Commitment and timely completion of allocated work
* Attendance
  + This will be monitored throughout the project and will be based on Tuesday lab sessions and additional scheduled meetings
  + Lack of attendance will only be relevant if unexpected or excessive
  + Face-to-face or virtual attendance will be considered equal
* Performance relative to existing skillset
  + For those without prior technical experience this will be based on relative contribution and application of newly acquired skill
  + For those with prior technical experience this will be based on ability to lead the technical elements of the project, whilst supporting and guiding those with less experience
* Quality of work carried out
* Ability to work as part of a team