Department of Computing and Mathematics
6G4Z0021: Team Project
2021/2022

Role Description: Technical Lead

Introduction

Within the team project there are several specialised terms we use to describe aspects of the team organisation and management processes. This is an initial list. If there are more terms you wish adding to the glossary, please email the unit leader.

Terms

Line Manager: Project teams sit within a corporate structure. Above them is a management group who are looking at the strategic delivery of the organisations projects and supporting the project teams in resolving issues. In the case of these projects your line manager, and the person the technical lead will report team performance to, is the lab tutor.

Problem Domain: Projects are ways of addressing a problem. It is common for us to define the problem domain at the start of the project. This is an analysis of a particular issue and the reasons why addressing it could be important. In defining the problem domain, it is important to focus on what the problem is rather than trying to identify a solution. Problem domains tend to be high level and grounded in human needs (requirements). Typically, a problem domain with conclude with a n aim that summarises what will be achieved by addressing the problem. Again, this should be high level and define the human benefits, rather than any solutions or technologies.

Product: The solution the project is delivering. As in all computer science, this is an experiment. The project aim has been considered and a hypothesis built that defines a particular implementation that is needed. The project delivers this product and ensures it is operating as it was designed to. This is then evaluated against the project aim to determine whether is succeeds in addressing that goal. While many products successfully deliver against their project aim, some do not. Provided the project has been managed appropriately and the reasons for the product not addressing the aim are understood. It is often estimated that only 20% of the activity within a project is directly related to the development of the product. The rest is focused on the management of the project and the knowledge/understanding developed to implement the product.

Product Review: Between the sprint retrospective and sprint planning activities, the current state of the product should be reviewed. This activity should be led by the product owner and is intended to ensure the product remains focused on the project aim and that the holistic integrity of the project and its concept remains.

Project: The wider activity that delivers the product. This is concerned with the management of process from the problem definition (Problem Domain) to the delivery of a solution that has been demonstrated to resolve this problem. Typically, 80% of the activity is around planning, communication, documentation, and evaluation.

Product Backlog: The list of tasks that are required to be completed to deliver the project. Most of these will be defined in the early stages. However, all projects are learning processes and the product backlog can change as the understanding of the project develops. This may mean new tasks are added, or removed, to/from the list. It may also mean that some tasks are re-defined or prioritised. The list is normally 'owned' by the product owner and maintained by them to ensure the vision for the project remains true to its original aim.

Risk Register: It is common to maintain a register (list) of anticipated risks within a project to ensure these are recognised and acted on. In the case of the team projects your Technical Leads, Product Owners and Quality Controllers, will each be maintaining a risk register as part of their management activity. These should be reviewed and discussed in the weekly meetings and constantly monitored and updated.

Solution Space: Any project is a journey from problem domain to solution space. The solution space describes the technical 'envelope' a project proposes to use to address the defined problem. Within the solution space it is normal to define, from an IT perspective, language, architecture, specific approach, method of evaluation, etc. Typically, this will evaluate an implementation of some kind against the aim of the project

Sprint: An intensive period of activity towards the delivery of the project. In the case of the team project each sprint is one weeklong and runs between your weekly lab meetings. A sprint starts with the spring planning process and finishes with the sprint retrospective and product review. During the sprint you should hold regular stand-ups (daily) if possible, to ensure the team understands what is being done, and what everyone is doing. Sprints are time limited. While the team seeks to work through the tasks defined for the sprint (sprint backlog) during the sprint, if any are incomplete, or un-started by the end of the sprint they should be returned to the overall project task list (project backlog) for allocation in the next round of sprint planning.

Sprint Backlog: The list of tasks to be undertaken in a single sprint. This list is populated, from the product backlog, during the spring planning and follows the vision, from the product owner, of how they would like the product to develop during this sprint. Any tasks that are incomplete, or un-started, by the end of the sprint should be returned to the project backlog for allocation in the next round of sprint planning.

Sprint Planning: The process undertaken at the start of each sprint. In this the tasks within the product backlog should be reviewed and assessed against the focus for the coming sprint. Those that move the project forwards towards the sprint objective are selected and placed in the sprint backlog. This process should be initially led by the product owner, but as the discussion transitions to how the sprint will be delivered the technical lead should take responsibility for the planning.

Sprint Retrospective: At the end of each sprint, it is typical to review the teams performance during the last sprint to see if there are lessons that can be learnt. These typically have a fixed agenda that starts with a high-level review of the project (to remind the team of what they initially set out to do), followed by discussions over what was learnt in the last sprint, what worked, and what didn't, opportunities for improvement and actions. This should be focused on the team's performance and interaction with a view to enhancing how the team performs.

Stand-up: A short informal meeting, typically following a fixed agenda, to raise and resolve immediate issues. This is commonly used by teams to quickly understand what each member is doing and where any problems or challenges may be. It is common for these to be daily during sprints (typically with a

duration of 15-30min). The name comes from the idea that these meetings are held standing up to ensure they run quickly.

Task: An activity that needs to be done to deliver, typically to deliver a piece of functionality for the project. Tasks are often recorded on cards (usually electronic ones) that outline the nature of the activity, estimation of the time it should take, and additional information about what needs to be delivered. In a Kanban process these cards are maintained in a set of lists with each card being moved through the list as their status develops.

Team Engagement: Teams are only as effective when the members of the team are actively contributing to the development of the project and the product within it. This is not just about attendance, but about the level of contribution you, and the rest of your team make to the project. Your team leader will be reporting, honestly and factually, to their line manager (the lab tutor) and this will be taken into consideration when the assessment mark is determined. Persistent reports of low engagement, by a team or individual, may result in a reduced grade for the unit.