BTSE 2113 Software Quality  
Tutorial 2

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1. **Why it is important to perform review techniques before the we undergo testing phase? (4 marks)**

* Technical review is important because it is a ‘filter’ for software process before it propagate to next phase.
* It can help to identify issues and defects in the software. It serves to uncover error and defects that can then be removed.
* This allows for the early detection and correction of problems, reducing the cost and effort required to fix them later in the development process.
* It can identify errors or defects in the software product in the early phase itself, which can save time and cost of fixing them later.

1. **How does technical review activity impact the cost impact towards the software project? (4 marks)**

* Technical review can help in identifying defects and errors in the software development process at an early stage.
* If we perform technical review, we can discover errors early so that they do not propagate to next step in software process.
* If we do not perform technical review, it may cause project could not deliver in time, and team member need do double work to solve defect and error. The cost of using it to fix will also rise.
* This can reduce the cost of rework and improve the quality of the software product.

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| Early Stage | Late Stage |
| Not much cost as not much deep development process yet | Huge amount of cost as all the modules, functions, has been partially or fully developed |
| Amendment only dealt with simple work such as correcting the customers’ requirements, or constructing a new design | Software restructuring is needed, huge amount of manpower and cost are needed |

1. **Technical reviews should be applied with a level of formality that is appropriate for the product to be built, the project timeline, and the people who are doing the work. What are the four factors that contribute to the formality with which a review is conducted? (8 marks)**

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|  | **Formal Review** | **Informal Review** |
| **Planning and preparation** | * In a formal review, planning and preparation are organized. Proper documentation, such as review checklists and guidelines is usually created. * The team will determine what specific aspects of the software will be discussed during the review in advance. | * Informal reviews typically lack a structured planning and preparation phase. * There may be no documented guidelines, and participants may discuss issues impromptu without a predefined plan. |
| **Meeting structure** | * Formal reviews follow an organized meeting structure. They have a well-defined schedule with participant roles and duties. * The meeting was well organized and participants knew what needed to be done during the review. | * Informal reviews may lack a structured meeting format. * Participants may engage in discussions in a more casual and unstructured manner, with no predefined plan or roles. |
| **Correction & verification** | * After issues or defects are identified, a specific correction phase follows where necessary changes are made. * These corrections are thoroughly verified to ensure they meet the required standards and criteria. | * Informal reviews may not include formal corrective and verification procedures. * Participants may discuss problems but are not necessarily involved in separate corrective or verification steps. * Problems may be identified but not necessarily addressed in a systematic way. |
| **Roles individuals play** | * Formal reviews, such as Fagan inspections, often involve predefined roles. There is typically a moderator who leads the review, a recorder who documents issues, and individuals who play the role of inspectors. * This structured approach ensures that everyone has specific responsibilities. | * In informal reviews, there are often no defined roles, and participants may not have specific titles or responsibilities. * It may be a more casual gathering of individuals to discuss the product, with no designated roles like moderator, recorder, or inspector. |

1. **How to distinguish error and defect? (4 marks)**

* Error is a quality problem that is discovered by software engineers before that is released to end user. Error is a human mistake or fault in the software code or design. Errors are introduced during the development phase by developers or designers.
* Defect is a quality problem that us discovered after the software has been released to end users or to another framework activity in the software process.

1. **Informal reviews include a simple desk check or a casual meeting conducted with your colleagues. Why is the informal review considered less effective compared with the formal technical review? (4 marks)**

* Informal reviews often lack a structured process. Without a clear plan, predetermined roles and systematized processes, there is a higher chance that important issues may be overlooked.
* Lack of systematic procedures for correcting and verifying problems, which may lack accountability for tracking and ensuring corrections.
* No proper preparation before the review meeting
* No correction, validation, verification, and follow-up after the meeting

1. **Based on question 5, how we can overcome this problem? (4 marks)**

* Developing a set of simple review checklists for each major work product can be an effective way to improve the effectiveness of informal reviews.
* These checklists can serve as a tool to guide reviewers as they check the work product and ensure that important aspects are considered during the review process.

1. **One of the review guidelines is to develop a checklist for each product that is likely to be reviewed. Describe how this checklist will help you during the review? (4 marks)**

* As a guideline. Reviewers know what to look at, so nothing gets missed.
* Checklists provide clear documentation for tracking issues, improvements, and for future reference.
* Checklists make sure all important parts of the product are checked
* Ensure the review process is standardized and consistent.