Assignment 1: Impact of code reviews on Software Code Quality – Individual assignment

The goal of this assignment is to understand and reflect on the concept of software code reviews (code smells/ technical debt) and software quality, the activities involved in code review and benefits of code review. In addition, the objective is to understand the implications of bad code quality on the different quality attributes such as maintenance, security, readability.

As part of this assignment you need to select and identify 5 research articles that are related to software code review and code quality. The research articles must be peer reviewed conference, workshop or journal papers. Do not select systematic literature review and tertiary study articles.

Criteria for paper selection – Select papers that are explorative and provide results on related but not limited to the following topics:

- Definitions and conceptual knowledge on code quality
- Activities involved or procedure followed in code review process
- State-of-practice on how code reviews are conducted
- Types of defects discovered in code reviews
- Impact of code review on software quality
- Tools support for maintenance aspects

Tip: Using keywords such as "technical debt" and "code smells" will results in better search results as they are specific concepts related to code review. Go through references and citations of a key paper to identify more relevant papers.

The assignment must be done individually. It is a preparatory and self-learning assignment which will help you in preparing for the succeeding assignments in this course.

Provide descriptions for each of the below mentioned items in a separate section/heading in your report. The weightage/importance of the following aspects in the assessment is mentioned in round brackets.

1. Summary of each paper in no more than 200 words per paper. The summary should include brief description of the problem domain and scope, objectives, main finding and limitations of the study (10%).
2. Description of how code quality is defined/described/used by the authors. Compare and contrast the authors' perception of code quality for all selected articles (25%).
3. Detailed description of the main findings of each paper. Compare and contrast similar findings from all the selected articles (25%).
4. Synthesis of all 5 articles by providing your own reflections on your learning (40%).