CPT304 Software Engineering II

Assignment 1

Analyzing "No Silver Bullet" in Relation to Design Patterns

Start date	3rd March 2025
Submission date	11th April 2025
Assignment type	Group assignment (4−5 members)
Percentage in final marks	10%
Deliverables	• Assignment report.
Late submission policy	5% of the awarded marks shall be deducted for each working day after the submission date, up to a maximum of five working days. Late submission for more than five working days will be not accepted.
Important notes	• Plagiarism results in award of ZERO mark; all submissions will be checked by TurnItIn. • The formal procedure for submitting coursework at XJTLU is strictly followed. Submission link on Learning Mall will be provided in due course. The submission timestamp on Learning Mall will be used to check late submission.

Learning Outcome:

- A. Understand and investigate the key problems driving research and development in contemporary software engineering.
- B. Demonstrate a familiarity with approaches to software engineering research and development problems, as well as their advantages, disadvantages, and future research directions.
- C. Discuss the key technological drivers behind contemporary software engineering research.
- D. Present, analyse, and give a reasoned critique of articles in the software engineering research literature.
- F. Communicate effectively on complex engineering matters with technical and non-technical audiences.

Objectives:

The primary objectives of this coursework are to:

1. Deepen understanding of Fred Brooks' article "No Silver Bullet" and its implications for software engineering.
2. Investigate how design patterns can address the challenges outlined in the article.
3. Develop collaborative research skills.

Coursework Overview:

Students will work in groups to read and analyze "No Silver Bullet," identify key challenges in software development, and explore how design patterns can help mitigate these challenges. Each group will produce a report and a presentation based on their findings.

Tasks:

1. **Read and Analyze**:
   - Read Fred Brooks' article "No Silver Bullet."
   - Identify key challenges in software development discussed in the article.
2. **Research Design Patterns**:
   - Select 2 design patterns that relate to the identified challenges.
   - Conduct a literature review on these design patterns, focusing on their purpose, advantages, and real-world applications.
3. **Case Study Analysis**:
   - For each of the two selected design patterns, provide a detailed case study that illustrates its application in a real-world software project.
   - Discuss how the design patterns address one or more of the challenges identified from "No Silver Bullet."
4. **Task Allocation:**
   - Clearly specify the allocation of tasks among group members, detailing each member's responsibilities and contributions to the project.
5. **Version Control History:**
   - Utilize a version control system (e.g., Git) to manage the project. Maintain a history of commits that reflects the contributions of each team member.

Deliverables:

1. **Research Report** (1500 words):
   - Introduction to "No Silver Bullet" and its relevance to software engineering.
   - Explain the identified key challenges.
   - Introduction of the selected design patterns and their applications.
   - Detailed case study analysis.
   - Task allocation.
   - Lesson learned and Conclusion.
   - Individual contribution form.
   - References

Assessment Criteria:

- **Understanding of Concepts** (20%): Clarity in explaining the challenges from "No Silver Bullet."

- **Relevance and Depth of Design Patterns** (20%): Clarity in explaining the selected design patterns and depth of analysis.
- **Case Study Quality** (20%): Relevance and clarity of the case study example.
- **Mitigation for the identified challenges** (20%): Correctness in the understanding.
- **Collaboration and Participation** (20%): Evidence of teamwork and contribution.

Group Collaboration:

- Group members should discuss the task allocation in the beginning of the coursework and track the progress to ensure on time submission.
- Groups should meet regularly and maintain clear communication.
- Each group member must contribute equally; peer evaluations will be conducted at the end of the coursework to assess individual contributions.

Submission Guidelines:

- Submit the research report as single PDF file.
- Ensure all submissions are made by the deadline stated above.

Collaboration and Academic Integrity

This module recognises that interactions with classmates and others can facilitate mastery of the module's materials. However, there remains a line between enlisting the help of another and submitting the work of another. This statement characterises both sides of that line.

The essence of all work submitted to this module for credit must be entirely your group's own work. Collaboration on completing coursework with any non-group member is prohibited except to the extent that you may ask classmates and others for some general hints, as opposed to sharing/receiving specific solutions. All group members are equally and collectively responsible for the entire submission. All group members are held jointly accountable for the integrity of the entire submission. Each group member acts as a guarantor of the group's academic integrity and must actively monitor contributions and violations of academic integrity. All members must confirm their submission and sign the submission cover sheet. If any member violates the university academic integrity policy without the group's immediate reporting, all members share the responsibilities and will face penalties.

Plagiarism, copying, collusion, or dishonest use of data will be penalised. Disciplinary actions and mark penalties ranging from capped scores to an award of zero can be applied. Please refer to the University's Academic Integrity Policy on ebridge for guidance. You may also contact module leaders or examination officers if you have any confusion relating to academic integrity.

Please note: Students who would like to submit the same or similar work from previous years to the current module or other modules must receive written permission from all instructors involved in advance of the assignment due date. A student who fails to receive written permission may be penalised according to the University's Academic Integrity Policy.

CPT304 Assignment 1

Individual Contribution

Group Number/Name:

Name	ID Number	Contribution (%)
1.		
2.		
3.		
4.		
5.		

Signed (physically) by all members:

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