**University of Aberdeen**

**School of Natural and Computing Sciences**

**Department of Computing Science**

**2023 – 2024**

**A1. Individual Study – Individually Assessed (No Teamwork)**

| **Title: JC3510 – Intelligent Software Implementation** | This assignment accounts for 20% of the total mark of the course. |
|---|---|

**Learning Outcomes**

On successful completion of this assignment, a student has demonstrated to be able to:

- Apply written and verbal communication skills.
- Explore current software design trends and practices.
- Understand essential aspects of the software development process for a medium-sized software-centric system.

**Information about plagiarism and collusion:** Your submitted report may be submitted for a plagiarism check. Note that GenAI tools such as ChatGPT to generate material for work submitted for assessment, without any form of editing or acknowledgement, will be investigated as a plagiarism offence. Read the following guide developed by the university to understand what academic misconduct means, how you can avoid it, and what the penalties are should you be found to be responsible for committing academic misconduct.

https://www.abdn.ac.uk/students/academic-life/academic-integrity.php

***Note that submitting similar work with another student can be considered as collusion.*** If you get stuck, please contact the Lecturer for assistance; ***do not ask another student, friend, or any other person to do the assignment for you!*** Also, read the following information provided by the university:

https://www.abdn.ac.uk/sls/online-resources/avoiding-plagiarism/

## Overview

This individual study project is designed to deepen your understanding of contemporary trends in software design. You will choose one of the following topics for your research:

- Microservices Architecture
- Containerization
- Serverless Computing
- DevOps
- AI-driven Software Design
- User Experience (UX) Driven Design
- Accessibility and Inclusive Design

Your task is to conduct a thorough literature review on the selected topic. You will search and select a minimum of 10 and a maximum of 20 scholarly papers from the specified databases. Please note that the papers must have been published after 2015 to ensure the relevance and recent development in the field. You can also select 5 additional references from other sources like technical blogs, websites, and related platforms.

## Scholarly Databases

The following scholarly databases are the ones recommended for your research:

IEEE Xplore, ACM Digital Library, ScienceDirect, SpringerLink, Scopus, Web of Science, JSTOR, Google Scholar, ArXiv, CNKI, and ERIC.

Please ensure you have access to these databases through our library services. If you encounter any access issues, you can contact the library helpdesk.

## Report Instructions

Selection of Papers: Carefully choose papers that are highly relevant to your topic. Prioritise high-quality, peer-reviewed journal articles and conference proceedings.

### Organizing Your Research:

- Begin with an Introduction to your chosen topic, explaining its significance in the field of software design and implementation.
- Group the findings from your literature survey into thematic areas or trends to provide a structured overview.
- Discuss each finding in detail, focusing on methodologies, outcomes, and how they contribute to the field.

### Critical Analysis:

- Critically analyse the developments in your chosen area. Highlight the advancements, challenges, and any gaps in the research.
- Compare and contrast different approaches or solutions proposed in your selected papers.

### Future Directions:

- Based on your analysis, suggest potential research directions (these are future research directions).
- Discuss the implications of these findings for the field of software design and implementation.

### Conclusion:

- Summarize the key insights gained from your literature survey.
- Reflect on how this research has expanded your understanding of the topic.

### References:

- Include a complete list of the papers you have reviewed, formatted according to the Harvard or IEEE Referencing Style.

## Word Limit

Although no specific template is provided, please ensure your report closely follows the provided instructions. The report should be a minimum of 2000 words and a maximum of 2500 words, excluding references and figures/diagrams.

## Marking Criteria

The report will be evaluated holistically without a specific mark distribution, guided by the following criteria:

- Relevance and quality of selected papers.
- Clarity and organization of the literature survey.
- Depth of critical analysis and insight.
- Originality of thought and potential future research directions suggested.
- Adherence to word limit, formatting, and citation guidelines.

## Submission Instructions

- You should submit a PDF version of your report code via MyAberdeen by 23:59 Friday April 14, 2024. The name of the PDF file should have the form “JC3510_A1_< your

Surname>_<your first name>_<Your Student ID>". For instance, "JC3506_A1_Smith_John_4568985.pdf", where 4568985 is your student ID.

- Unauthorized late submissions may incur penalties, which will substantially reduce your overall CGS points, according to the university policy. You are advised to check the latest policy in this regard.
- Please try to make your submission file less than 20MB as you may have issues when uploading large files to MyAberdeen.

Any questions pertaining to any aspects of this assessment, please address them to the course coordinator Dr Marco Palomino via Blackboard's Message function available on MyAberdeen's course site or via email marco.palomino@abdn.ac.uk