Use of Generative AI in Assignment 1

As we explore the evolving landscape of computer science (and education in general), it's essential to integrate cutting-edge technologies into our learning processes. In this assignment the **students are encouraged** to use Generative AI (GenAI) tools **ethically** in preparing the solution. These powerful tools can enhance your understanding, provide coding assistance, and inspire innovative approaches to problem-solving.

A Fallible Assistant: The limitations of GenAI tools are well-known. These tools are error-prone and cannot be trusted to provide correct solutions for complex problems like the one we explore in this course. However, if used correctly, GenAI tools can assist one in preparing correct solutions, or give ideas for solving the problem. For example, a problem can be subdivided into multiple simpler sub-problems and then GenAI tool can assist in solving one or more of those sub-problems; GenAI tools can also assist in checking if a solution (to a sub-problem) is correct. Those tools can also help students with relevant information for solving a particular problem, explain complex concepts, or present step-by-step guidance in solving a problem. Therefore, such tools should be used at best as a fallible assistant, and it would be a student's responsibility to check and ensure that the solutions provided by such tools are correct or valid, for which a solid understanding of the concepts, algorithms, and methods presented in this course is essential.

Your Work Your Responsibility: You will be responsible for the solution you submit whether you prepare it by taking assistance from GenAI tool or not. If the submitted solution is correct you will receive the credit for that and if it is not correct no one else or no tool can be blamed for that.

Acknowledgement is Must: You need to submit a statement/report on the use of GenAI in preparing the solution.
- If you did not use any GenAI tool, then submit the following statement in a file (name as **GenAIStatment.pdf**)

    Use of GenAI: No GenAI tool was used in preparing the solution of this assignment.

- If you have used the GenAI tool(s), then write a short report (2 A4 pages) on your experience in using such tool(s) in completing this assignment. Name the file as **GenAIReport.pdf**.
    - **Use of GenAI:** In your reflective note, you should provide a detailed account of your experience and should include, but not limited to, the following elements – (i) overview of the tool(s) used (ii) how the tool(s) was/were integrated in your workflow (iii) what was the quality/correctness of the response generated by the tool(s) and/or how the GenAI tool(s) improved the quality of your solution (iv) how the tool(s) improved your learning experience and problem solving skills (v) what challenges you faced in using those tools and how you solved those challenges (vi) how useful was the tool for your productivity e.g. how much time was saved by using GenAI tool(s) (vii) any ethical consideration or concerns in using GenAI tools in this assessment etc.

- **GenAI must not be used in preparing these reports.**

How to use GenAI tools: Some suggestions on the use of GenAI tools for this assignment.

1. AI-Assisted Code Generation and Refinement: Use of AI-powered code assistants (like GitHub Copilot or OpenAI's Codex, or another AI code assistant) to help generate initial Java code. Those codes will probably need subsequent editing/updating for integrating in your solution for the assignment.
2. Testing and Bug-fixing: GenAI tools can be used for comprehensive test case generation, identifying the bugs and fixing those.
3. Documentation and Explanation: GenAI tools can be used to generate detailed documentation, enhance the quality of the documentation and make it more professional.
4. Or any other innovative/effective way you came up for using GenAI to assist you in this assignment.