



**a place of mind**  
THE UNIVERSITY OF BRITISH COLUMBIA

**COSC 320 – 001 [3-2-0]**  
***Analysis of Algorithms***  
**2022-2023 Winter Term 2**  
**Project Second Milestone**

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**Project proposal (25% of your project grade):**

For your second algorithm:

- Formulate the problem as an algorithmic problem, include the mathematical notations. For example, given an input array  $A$  of length  $n$ , the algorithm should output  $A$  in sorted order.
- Write pseudo-code.
- Analyze the algorithm you designed. Include the analysis of the algorithm.
- Provide proof of correctness and running time of your algorithm.
- Data Structure. Choice of your data structure and the rationale behind it. How does it affect the run time or memory consumption of your algorithm?
- Describe the unexpected Cases/Difficulties. If you encountered any issues for design and implementation of your work, include it here. Also, mention the solutions you have considered to alleviate the issue.
- Note that for some topics, you should think about the operations that should be done.
- Task Separation and Responsibilities. Who did what for this milestone? Explicitly mention the name of group members and their responsibilities.

**Note:** If one person does most of the job, that person will receive more grade. In other words, if you do not contribute to the group project, your grade for the project will be different than your group members'.

Use the template uploaded in the Term Project module on course home page on Canvas.

**Going beyond the maximum pages mentioned in the template has a 5% penalty.**