**CSCI 2312 - Design Document**

1. Title  
   A short program **title**, the **author's name**, **author's ID**, and **date**.
2. Problem DescriptionA brief description of what this program does.
3. Input RequirementsA detailed **list of all external inputs** (from files or keyboard) including a description of the **data type** and **range of valid values** for each input. For input file format and interactive user input, you need to write what data type is used for every field and valid value and length.
4. Output RequirementsA detailed **list or description of all outputs (**to files or to the screen).
5. Problem Solution Discussion  
   A summary description of the solution steps with algorithms analysis (1 paragraph, approximately 100 words). If any unusual techniques or algorithms are used that need further explanation, and additional paragraph may be used.
6. Classes, Inheritance, and Data Structures A description of choice of classes, inheritance, and data structures including your justification for each. Include a brief explanation for your choice. Draw an UML diagram to show the class design.
7. Overall Software ArchitectureA brief description of major functions and their main roles in the program. You need to explain how the entire program is constructed and how the functions are related each other. You don't have to explain every little function. Mention only the most important functions. Show how your classes interact each other and Show the relationships among the classes.