**CSE 210L: Data Structures and Algorithms Lab**

**LAB ASSESSMENT RUBRICS**

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| **Marking Criteria** | **Exceeds expectation**  **(5-4)** | **Meets expectation**  **(3-2)** | **Does not meet expectation (1)** | **Score** |
| 1. **Realization of Experiment** | Understand and apply basic algorithmic notations for analyzing computational complexity of algorithm and data structures. | Understand and apply basic algorithms notations (functions) for analyzing computational complexity of algorithm and data structures, with minor supervision. | Unable to understand and apply basic algorithms notations (functions) for analyzing computational complexity of algorithm and data structures. | 30% |
| 1. **Ability to apply required code utility or data structure** | Select computationally efficient data structure and algorithm for a particular problem. In case of software implementation able to understand the basics of programming language (i.e. C++, Java) as well as the relevant programming environment. | Need guidance to select computationally efficient data structure and algorithm for a particular problem. In case of software implementation need minor supervision to understand the basics of programming language (i.e. C++, Java) as well as the relevant programming environment. | Unable to select computationally efficient data structure and algorithm for a particular problem. In case of software implementation unable to understand the basics of programming language (i.e. C++, Java) as well as the relevant programming environment. | 20% |
| 1. **Documentation** | Clearly and effectively documented including descriptions of all variables/functions.  Specific purpose is noted for each function, control structure, input requirements and output results. | Basic documentation including descriptions of all variables/functions.  Specific purpose is noted for each function and control structure. | No documentation included. | 10% |
| 1. **Ability to run/debug** | Able to use software tools like CodeBlocks/Dev C++ and programming languages (e.g. C++, Java) for efficient implementation of algorithms and data structures. Able to analyze runtime of data structure and algorithm operations on a real hardware and in terms of algorithmic notations. | Use software tools like CodeBlocks/Dev C++ and programming languages (e.g. C++, Java) for efficient implementation of algorithms and data structures with minor supervision. Able to analyze runtime of data structure and algorithm operation on a real hardware and in terms of algorithmic notations with minor. | Unable to understand (and use) software tools like CodeBlocks/Dev C++ and programming languages (e.g. C++, Java) for efficient implementation of algorithms and data structures. Able to analyze runtime of data structure and algorithm operation on a real hardware and in terms of algorithmic notations. | 20% |
| 1. **Results compilation** | Show processed results effectively by conducting simple computations and plotting using collected data | Show processed results effectively by conducting simple computations and plotting using collected data with minor error | Unable to show processed results effectively by conducting simple computations and plotting using collected data with minor error | 10% |
| 1. **Efficiency** | Excellent use of CPU and Memory. | Good but not smart use of CPU and Memory. | Inefficient use of CPU and Memory. | 10% |
| 1. **Lab Performance**   **(Team work and Lab etiquettes)** | Actively engages and cooperates with other group members in an effective manner. Respectfully and carefully observes safety rules and procedures | Cooperates with other group members in a reasonable manner. Observes safety rules and procedures with minor deviation. | Distracts or discourages other group members from conducting the experiment. Disregards safety rules and procedures. | 10% |

**Instructor:**

Name: Dr. Khurram S. Khattak

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