**CSCE 5640: Operating System Design**

**Project Proposal**

**Contiguous Memory Allocation**

**Name:** Kishan Kumar Zalavadia

**EUID:** 11685261

1. **Overview and objective(s) of the project.**

Contiguous Memory Allocation:

* This project focuses on developing a Contiguous Memory Allocation System. This will simulate the memory allocation system used in the operating systems.
* The program will handle four types of requests: requests for a contiguous block of memory, releases of a contiguous block of memory, compacts unused holes of memory into one single block, and reports the regions of free and allocated memory.
* Based on the input, the project will manage memory using first-fit, best-fit, and worst-fit allocation strategies.
* The main goal of the project is to build a robust model that efficiently manages memory techniques and evaluates their performance under various scenarios.

1. **Team size and team members.**

Team size: 1

Team Member: Kishan Kumar Zalavadia (11685261)

1. **Project Plan**
   1. **Task divisions for the team members.**

I am handling everything by myself.

* Understanding the memory allocation strategies
* Design the memory block structure
* Implement memory allocation function (RQ)
* Implement memory release (RL)
* Implement compaction (C)
* Implement memory status reporting (STAT)
* Integration and testing
* Final documentation
  1. **Due date for subtasks.**
* Nov 21, 2024: Understanding the memory allocation strategies
* Nov 22, 2024: Design the memory block structure
* Nov 23, 2024: Implement RQ, RL, C
* Nov 24, 2024: Implement STAT
* Nov 25, 2024: Integration and testing
* Nov 26, 2024: Final documentation

1. **Experimental environment**
   1. **Programming language for implementation.**

This project may be implemented in Java.

* 1. **Operating system to test the project.**

This project will be developed on a Mac OS.   
It will be tested on a Linux CSE Machine, but it can be tested on any OS.

* 1. **Test cases.**

This project will be tested using different system memories such as 1MB, 2MB, 4MB, 8MB, 16MB, etc.

For each system memory, I will test the program with different sequences of different memory requests + allocation memory (F, B, and W), releasing processes, and compaction.

I will create a script that will create random test case files automatically.