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CECS 326 sect 02

BankersAlgorithm Report

Video link: https://youtu.be/CyZjZvUhfDc
Design Description:
This project implements the **Banker's Algorithm** for deadlock avoidance in C++, managing **5 processes** competing for **3 resource types**. The system tracks **Maximum claims**, **Current Allocation**, and **Available resources**, calculating the **Need matrix** to verify **safe resource allocation**. The **safety algorithm** finds valid process execution sequences, while **requestResources()** validates and processes resource requests by checking need constraints, availability, and system safety. A menu-driven interface offers test cases and custom resource allocation testing. **Deadlock avoidance** is achieved by only granting requests that maintain the system in a safe state where all processes can eventually complete.

Melody:

- Implemented core safety checking algorithm (isSafe())
- Designed resource request processing mechanism
- Created Need matrix calculation functionality
- Used example test cases for validating system safety

Andrea:

- Built user interface with menu-driven testing
- Created matrix and vector display functions
- Implemented input validation for request handling
- Designed state tracking and display system
- Added comprehensive documentation