## Outline

This proposal for a final project involves developing a floppy disk driver and file system for Tiny OS. The aim is to enhance the operating system's versatility through efficient interaction with floppy disks. The floppy disk driver will interface with the WD1772 Floppy Disk Controller, performing functions like pin management, sector reading/writing, and data integrity verification.

## Project Components

### Floppy Disk Driver

This component is an intermediary between Tiny OS and a floppy disk, enabling the computer to read from and write to the disk.

### File System

Consists of policies and mechanisms that govern how data is structured on the floppy disk, specifically to improve the operating system's speed and efficiency in data retrieval.

## Relation to Operating Systems

### Device Drivers

The floppy disk driver enables Tiny OS to communicate with the floppy disk, directly related to the necessity of drivers in operating systems.

### File Management

Developing a file system provides insights into how operating systems manage and structure files on storage media.

### Memory Management

DMA enables direct hardware interaction with computer memory, bypassing the CPU. This enhances system efficiency and aligns with memory utilization best practices in operating systems.

### Processes and Tasks

Multiple tasks, such as data reading and error checking, will be performed by the driver, relevant to task management in operating systems.

### Input/Output Operations

Basic disk read and write operations are integral to the role of I/O in operating systems.

## Planning and Documentation

### Research

Technical challenges will be addressed through ongoing research to improve efficiency. Accompanying documentation and cited references will be created alongside this research.

### Kanban Board

Task progress will be monitored using a Kanban board.

### UML Diagrams

Visual representations, including UML diagrams, will be created at the project's

initial stage.

### Unit Testing

A rudimentary set of unit tests is planned to verify each part of the driver and file system.

### Git Repository

Version control will occur via a private Git repository, which will contain the Kanban board, supporting documents, diagrams, code, and unit tests.

## Future Plans Deadlines and Deliverables

An update memo is scheduled for November 14, summarizing progress, design updates, and implementation details.

Final project submission is set for December 4, followed by a presentation between December 11-15.

Source code and required supplementary files will be provided.

A working demo will be presented, along with a discussion of the project's relation to operating system concepts covered in the course.

## Summary

This project will provide valuable, hands-on experience in Operating Systems.