MINI PROJECT

EEX5563/EEX5564 – COMPUTER ARCHITECTURE AND OPERATING SYSTEMS

Buddy System Algorithm

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Introduction

The Buddy System Algorithm is a dynamic memory allocation strategy that efficiently manages memory blocks of varying sizes. It operates by dividing the available memory into blocks of equal sizes. When a memory request arrives, the algorithm finds the smallest available block that can satisfy the request. If the block is larger than necessary, it is split into two equal-sized called "buddy" blocks.

Requirements

Simulate memory allocation using the Buddy System algorithm.

Handle memory allocation, deallocation, and memory state display.

Minimize internal fragmentation through dynamic splitting and merging.

Assumptions:

Memory Size: The total memory size is assumed to be 1024 KB.

Minimum Block Size: The smallest allocatable memory block is 4 KB.

Memory Requests: Memory requests are provided in KB.

Flowchart

A diagram of a flowchart

Description automatically generated

Test Results

