Week 9

#include <stdio.h>

#include <stdbool.h>

#define MAX\_BLOCKS 100

int main() {

int memory[MAX\_BLOCKS] = {0}; // 0 indicates free, 1 indicates allocated

int n, start, length;

char choice;

printf("Sequential File Allocation\n");

do {

printf("Enter starting block (0 - %d): ", MAX\_BLOCKS - 1);

scanf("%d", &start);

printf("Enter length of file: ");

scanf("%d", &length);

// Check for boundary and availability

if (start < 0 || start + length > MAX\_BLOCKS) {

printf("Error: Out of memory bounds.\n");

} else {

bool canAllocate = true;

for (int i = start; i < start + length; i++) {

if (memory[i] == 1) {

canAllocate = false;

break;

}

}

if (canAllocate) {

for (int i = start; i < start + length; i++) {

memory[i] = 1;

}

printf("File allocated from block %d to %d.\n", start, start + length - 1);

} else {

printf("Error: Blocks already allocated. Allocation failed.\n");

}

}

printf("Do you want to allocate another file? (y/n): ");

scanf(" %c", &choice); // space before %c to consume newline

} while (choice == 'y' || choice == 'Y');

printf("\nFinal Memory Allocation:\n");

for (int i = 0; i < MAX\_BLOCKS; i++) {

printf("%d", memory[i]);

}

printf("\n");

return 0;

}

