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#include <stdbool.h>
#include <stdio.h>

#define TOTAL_MEMORY 100
#define MFT_BLOCKS 50

void printMemory(int mft[], int mvt[], int mft_size, int mvt_size) {
    printf("MFT Memory: ");
    for (int i = 0; i < mft_size; i++) {
        printf("%d ", mft[i]);
    }
    printf("\n");

    printf("MVT Memory: ");
    for (int i = 0; i < mvt_size; i++) {
        if (mvt[i] == -1) {
            printf(". ");
        } else {
            printf("%d ", mvt[i]);
        }
    }
    printf("\n");
}

int allocateMFT(int mft[], int task_size, int mft_size) {
    for (int i = 0; i <= mft_size - task_size; i++) {
        bool fit = true;
        for (int j = i; j < i + task_size; j++) {
            if (mft[j] != 0) {
                fit = false;
                break;
            }
        }
        if (fit) {
            for (int j = i; j < i + task_size; j++) {
                mft[j] = 1;
            }
            return i;
        }
    }
    return -1;
}

void deallocateMFT(int mft[], int start, int task_size) {
    for (int i = start; i < start + task_size; i++) {
        mft[i] = 0;
    }
}

int allocateMVT(int mvt[], int task_size, int mvt_size) {
    for (int i = 0; i <= mvt_size - task_size; i++) {
        bool fit = true;
        for (int j = i; j < i + task_size; j++) {
            if (mvt[j] != -1) {
                fit = false;
                break;
            }
        }
        if (fit) {
            for (int j = i; j < i + task_size; j++) {
                mvt[j] = 1;
            }
            return i;
        }
    }
    return -1;
}

void deallocateMVT(int mvt[], int start, int task_size) {
    for (int i = start; i < start + task_size; i++) {
        mvt[i] = -1;
    }
}

int main() {
    int mft[MFT_BLOCKS] = {0};

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int mvt[TOTAL_MEMORY] = {-1};

printf("Initial State:\n");
printMemory(mft, mvt, MFT_BLOCKS, TOTAL_MEMORY);

printf("\nAllocating tasks:\n");
int task_size = 10;
printf("Allocating task of size %d in MFT\n", task_size);
int start = allocateMFT(mft, task_size, MFT_BLOCKS);
if (start != -1) {
    printf("Task allocated at index %d\n", start);
} else {
    printf("Failed to allocate task in MFT\n");
}

printf("Allocating task of size %d in MVT\n", task_size);
start = allocateMVT(mvt, task_size, TOTAL_MEMORY);
if (start != -1) {
    printf("Task allocated at index %d\n", start);
} else {
    printf("Failed to allocate task in MVT\n");
}

printf("\nCurrent State:\n");
printMemory(mft, mvt, MFT_BLOCKS, TOTAL_MEMORY);

printf("\nDeallocating tasks:\n");
printf("Deallocating task of size %d from MFT starting at index %d\n",
    task_size, 0);
deallocateMFT(mft, 0, task_size);

printf("Deallocating task of size %d from MVT starting at index %d\n",
    task_size, 0);
deallocateMVT(mvt, 0, task_size);

printf("\nFinal State:\n");
printMemory(mft, mvt, MFT_BLOCKS, TOTAL_MEMORY);

return 0;
}

```