# Bansilal Ramnath Agarwal Charitable Trust’s

Vishwakarma Institute of Technology, Pune-37

*(Anautonomous Institute of Savitribai Phule Pune University)*



**Department of Computer Engineering**

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| **Division** | **CS** |
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* **Paging, Segmentation, Address translation**

#include <stdio.h>

#include <stdlib.h>

#define PAGE\_SIZE 4096

#define SEGMENT\_SIZE 8192

#define NUM\_PAGES 8

#define NUM\_SEGMENTS 4

// Function to perform address translation for paging

void translatePaging(int virtual\_address) {

int page\_number = virtual\_address / PAGE\_SIZE;

int offset = virtual\_address % PAGE\_SIZE;

printf("Virtual Address: %d\n", virtual\_address);

printf("Page Number: %d\n", page\_number);

printf("Offset: %d\n", offset);

printf("Physical Address: %d\n", page\_number \* PAGE\_SIZE + offset);

}

// Function to perform address translation for segmentation

void translateSegmentation(int virtual\_address) {

int segment\_number = virtual\_address / SEGMENT\_SIZE;

int offset = virtual\_address % SEGMENT\_SIZE;

printf("Virtual Address: %d\n", virtual\_address);

printf("Segment Number: %d\n", segment\_number);

printf("Offset: %d\n", offset);

printf("Physical Address: %d\n", segment\_number \* SEGMENT\_SIZE + offset);

}

int main() {

int choice, virtual\_address;

printf("Memory Management Techniques\n");

printf("1. Paging\n");

printf("2. Segmentation\n");

printf("Enter your choice: ");

scanf("%d", &choice);

switch (choice) {

case 1:

printf("Enter virtual address for paging: ");

scanf("%d", &virtual\_address);

translatePaging(virtual\_address);

break;

case 2:

printf("Enter virtual address for segmentation: ");

scanf("%d", &virtual\_address);

translateSegmentation(virtual\_address);

break;

default:

printf("Invalid choice\n");

return 1;

}

return 0;

}  
