**1. Arithmetical Operations Using Switch Case**

**Code:**

#include <stdio.h>

int main() {

int a, b, choice;

float result;

printf("Enter two numbers: ");

scanf("%d %d", &a, &b);

printf("Choose operation:\n");

printf("1. Addition\n2. Subtraction\n3. Multiplication\n4. Division\n");

printf("Enter your choice (1-4): ");

scanf("%d", &choice);

switch (choice) {

case 1:

result = a + b;

printf("Result = %.2f\n", result);

break;

case 2:

result = a - b;

printf("Result = %.2f\n", result);

break;

case 3:

result = a \* b;

printf("Result = %.2f\n", result);

break;

case 4:

if (b != 0) {

result = (float)a / b;

printf("Result = %.2f\n", result);

} else {

printf("Error: Division by zero\n");

}

break;

default:

printf("Invalid choice\n");

}

return 0;

}

**Sample Input/Output:**

Enter two numbers: 10 5

Choose operation:

1. Addition

2. Subtraction

3. Multiplication

4. Division

Enter your choice (1-4): 3

Result = 50.00

**2. Addition of Arrays**

**Code:**

#include <stdio.h>

int main() {

int n, i;

printf("Enter number of elements in arrays: ");

scanf("%d", &n);

int a[n], b[n], sum[n];

printf("Enter elements of first array:\n");

for (i = 0; i < n; i++) {

scanf("%d", &a[i]);

}

printf("Enter elements of second array:\n");

for (i = 0; i < n; i++) {

scanf("%d", &b[i]);

}

for (i = 0; i < n; i++) {

sum[i] = a[i] + b[i];

}

printf("Sum of arrays:\n");

for (i = 0; i < n; i++) {

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

}

return 0;

}

**Sample Input/Output:**

Enter number of elements in arrays: 4

Enter elements of first array:

1 2 3 4

Enter elements of second array:

5 6 7 8

Sum of arrays:

6 8 10 12

**3. Pointer Program Using Dynamic Memory Allocation**

**Code:**

#include <stdio.h>

#include <stdlib.h>

int main() {

int n, i;

int \*ptr;

int sum = 0;

printf("Enter number of elements: ");

scanf("%d", &n);

ptr = (int \*)malloc(n \* sizeof(int));

if (ptr == NULL) {

printf("Memory not allocated.\n");

return 1;

}

printf("Enter elements:\n");

for (i = 0; i < n; i++) {

scanf("%d", ptr + i);

sum += \*(ptr + i);

}

printf("Sum = %d\n", sum);

free(ptr);

return 0;

}

**Sample Input/Output:**

Enter number of elements: 5

Enter elements:

10 20 30 40 50

Sum = 150