

## **Task 1**

Compile all sample programs and get familiar with pointers

### **Sample 1**

#### **Code:**

```
#include<iostream>

using namespace std;

int main()
{
    int *p1,*p2;
    int a=10,b=20;

    p1=&a;
    p2=&b;

    cout<<" value of a= "<<a;
    cout<<" \nvlaue of b= "<<b;
    cout<<" \nvalue of p1= "<<p1;
    cout<<" \nvalue of p2= "<<p2;
    cout<<" \nvalue of &a= "<<&a;
    cout<<" \nvalue of &b ="<<&b;
    cout<<" \nvalue of *p1 = " <<*p1;
    cout<<" \nvalue of *p2 ="<<*p2;

    return 0;
}
```

### Output:

```
value of a= 10
vlaue of b= 20
value of p1= 0x22fe2c
value of p2= 0x22fe28
value of &a= 0x22fe2c
value of &b =0x22fe28
value of *p1 = 10
value of *p2 =20
-----
Process exited after 3.21 seconds with return value 0
Press any key to continue . . .
```

### Sample 2

#### Code:

```
#include<iostream>

using namespace std;

int main()
{
int a=5,b=10,c,*p1,*p2,*s;

p1=&a;
p2=&b;
s=&c;

*s=*p1+*p2;

cout<<"addition of values at adress =" <<*s;

return 0;

}
```

### Output:

```
addition of values at adress =15
-----
Process exited after 2.295 seconds with return value 0
Press any key to continue . . . _
```

### **Sample 3**

#### **Code:**

```
#include<iostream>

using namespace std;

int main()
{
    int i=3,*j,**k;

    j=&i;
    k=&j;

    cout<<"\n Adress of i = "<<&i;
    cout<<"\n Adress of i = "<<j;
    cout<<"\n Adress of i = "<<*k;
    cout<<"\n Adress of j = "<<&j;
    cout<<"\n Adress of j = "<<k;
    cout<<"\n Adress of k = "<<&k;
    cout<<"\n Value of j = "<<j;
    cout<<"\n Value of k = "<<k;
    cout<<"\n Value of i = "<<i;
    cout<<"\n Value of i = "<<*(&i);
    cout<<"\n Value of i = "<<*j;
    cout<<"\n Value of i = "<<**k;

    return 0;
}
```

#### **Output:**

```

Address of i = 0x22fe3c
Address of i = 0x22fe3c
Address of i = 0x22fe3c
Address of j = 0x22fe30
Address of j = 0x22fe30
Address of k = 0x22fe28
Value of j = 0x22fe3c
Value of k = 0x22fe30
Value of i = 3
Value of i = 3
Value of i = 3
Value of i = 3
-----
Process exited after 1.948 seconds with return value 0
Press any key to continue . . .

```

## Task 2

Create a C++ program to find the sum of 5 numbers using pointers

### Code:

```

#include <iostream>

using namespace std;

int main() {

    int num[5];

    int sum = 0;

    cout << "Enter 5 numbers: " << endl;

    for(int i = 0; i < 5; i++) {

        cin >> num[i];

    }

    int *ptr = num;

    for(int i = 0; i < 5; i++) {

        sum += *ptr;

        ptr++;

    }
}

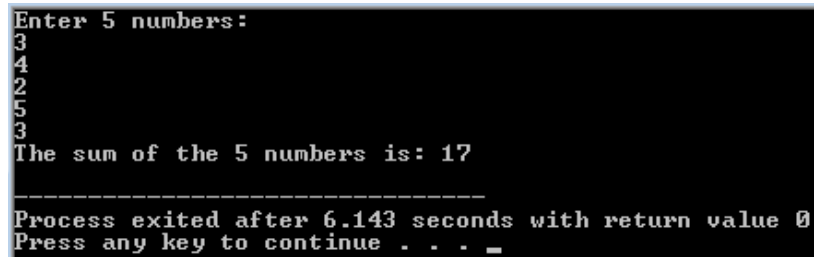
```

```
cout << "The sum of the 5 numbers is: " << sum << endl;

return 0;

}
```

### Output:



```
Enter 5 numbers:
3
4
2
5
3
The sum of the 5 numbers is: 17

-----
Process exited after 6.143 seconds with return value 0
Press any key to continue . . . _
```

### Task 3

Create a C++ program to swap the values of two variables using pointer notation.

### Code:

```
#include<iostream>

using namespace std;

void swap(int *ptr1,int *ptr2){

    int *ptr3;

    *ptr3=*ptr1;

    *ptr1=*ptr2;

    *ptr2=*ptr3;

}

main(){

    int a=10,b=20, *ptr1=&a, *ptr2=&b;

    cout<<"Before Swapping:\n";

    cout<<"a= " <<a<<endl<<"b= " <<b<<endl;

    swap(*ptr1,*ptr2);
```

```

        cout<<"After Swapping:\n";

        cout<<"a= "<<a<<endl<<"b= "<<b<<endl;

    }

```

### Output:

```

Before Swapping:
a= 10
b= 20
After Swapping:
a= 20
b= 10

-----
Process exited after 2.362 seconds with return value 0
Press any key to continue . . .

```

## Task 4

Using the concept of pointer to pointer create a program which add two float values

$*(p1)+*(p2)$

### Code:

```

#include <iostream>

using namespace std;

int main() {

    float a = 2.5;

    float b = 3.5;

    cout<<"a= "<<a<<endl;

    cout<<"b= "<<b<<endl;

    float* p1 = &a;

    float* p2 = &b;

    float** pp1 = &p1;

    float** pp2 = &p2;

    **pp1 += **pp2;

```

```
cout << "The sum is " << **pp1 << endl;  
return 0;  
}
```

### Output:

```
a= 2.5  
b= 3.5  
The sum is 6  
-----  
Process exited after 1.86 seconds with return value 0  
Press any key to continue . . . _
```

## Task 5

Compiler a C++ program to find the largest number from the array of 7 numbers using pointer

### Code:

```
#include<iostream>  
using namespace std;  
main(){  
    int arr[7];  
    cout<<"Enter 7 numbers: \n";  
    for(int i=0;i<7;i++){  
        cin>>arr[i];  
    }  
    int *ptr=arr;  
    int max=*ptr;  
    for (int i = 1; i < 7; i++)  
{  
        ptr++;  
        if (*ptr > max)
```

```

    {
        max = *ptr;
    }
}

cout << "The largest number in the array is: " << max << endl;
}

```

### Output:

```

Enter 7 numbers:
4
3
5
2
3
4
1
The largest number in the array is: 5

-----
Process exited after 28.39 seconds with return value 0
Press any key to continue . . .

```

## Task 6

Create a program which print the table of 2 upto 12 using pointers

### Code:

```

#include <iostream>

using namespace std;

int main() {
    int num = 2;

    int *ptr = &num;

    for(int i = 1; i <= 12; i++) {
        cout << *ptr << " x " << i << " = " << (*ptr * i) << endl;
    }

    return 0;
}

```



**Output:**

```
2 x 1 = 2
2 x 2 = 4
2 x 3 = 6
2 x 4 = 8
2 x 5 = 10
2 x 6 = 12
2 x 7 = 14
2 x 8 = 16
2 x 9 = 18
2 x 10 = 20
2 x 11 = 22
2 x 12 = 24

-----
Process exited after 2.262 seconds with return value 0
Press any key to continue . . . _
```