01

main.cpp

```cpp
#include<iostream>
using namespace std;
int main() {
    cout<<"printing  the address of x"<<endl;
    int x = 5;
    int *ptr;
    ptr=&x;
    cout<<ptr;
    return 0;
}
```

Run

Output

Clear

```
/tmp/pj4kpijTPC.o
printing  the address of x
0x7fff5ada88f4
```


02

main.cpp

```cpp
#include<iostream>
using namespace std;
int main() {
    cout<<"printing  the value of x"<<endl;
    int x = 5;
    int *ptr;
    ptr=&x;
    cout<<*ptr;
    return 0;
}
```

Run

Output

Clear

```
/tmp/pj4kpijTPC.o
printing  the value of x
5
```

03

main.cpp

```cpp
#include<iostream>
using namespace std;
int main() {
    int arr[] = {1, 2, 3, 4, 5};
    int *ptr = arr;
    cout<<"Value at ptr:"<<*ptr<<endl;
    ptr++;
    cout << "Value at ptr after increment: "<<*ptr<<endl;
    return 0;
}
```

Output

```
/tmp/pj4kpijTPC.o
Value at ptr:1
Value at ptr after increment: 2
```


04

main.cpp

```cpp
#include<iostream>
using namespace std;
int main() {
    int a,b,c;
    cout<<"Enter the 1st num: ";
    cin>>a;
    cout<<"Enter the 2nd num: ";
    cin>>b;
    c=a+b;
    int *ptr1=&a;
    int *ptr2=&b;
    int *ptr3=&c;
    cout<<"Addition of a and b is =  "<<*ptr3;
    return 0;
}
```

Output

```
/tmp/pj4kpijTPC.o
Enter the 1st num: 30
Enter the 2nd num: 20
Addition of a and b is =  50
```

05

main.cpp

```cpp
#include<iostream>
using namespace std;
int main() {
    int a,b,c;
    cout<<"Enter the 1st num: ";
    cin>>a;
    cout<<"Enter the 2nd num: ";
    cin>>b;
    c=a-b;
    int *ptr1=&a;
    int *ptr2=&b;
    int *ptr3=&c;
    cout<<"Subtraction of a from b is =  "<<*ptr3;
    return 0;
}
```

Run

Output

Clear

```
/tmp/pj4kpijTPC.o
Enter the 1st num: 30
Enter the 2nd num: 20
Subtraction of a from b is =  10
```


06

main.cpp

```cpp
#include<iostream>
using namespace std;
int main() {
    int a,b,c;
    cout<<"Enter the 1st num: ";
    cin>>a;
    cout<<"Enter the 2nd num: ";
    cin>>b;
    c=a*b;
    int *ptr1=&a;
    int *ptr2=&b;
    int *ptr3=&c;
    cout<<"multiplication of a and b is =  "<<*ptr3;
    return 0;
}
```

Run

Output

Clear

```
/tmp/pj4kpijTPC.o
Enter the 1st num: 30
Enter the 2nd num: 2
multiplication of a and b is =  60
```

07

main.cpp

```cpp
#include<iostream>
using namespace std;
int main() {
    float a,b,c;
    cout<<"Enter the 1st num: ";
    cin>>a;
    cout<<"Enter the 2nd num: ";
    cin>>b;
    c=a/b;
    float *ptr1=&a;
    float *ptr2=&b;
    float *ptr3=&c;
    cout<<"Division of a and b is =  "<<*ptr3;
    return 0;
}
```

Run

Output

Clear

```
/tmp/pj4kpijTPC.o
Enter the 1st num: 30
Enter the 2nd num: 36
Division of a and b is =  0.833333
```


08

main.cpp

```cpp
#include<iostream>
using namespace std;
class Circle {
private:
    double radius;
public:
    Circle(double r) : radius(r) {}
    double getArea() {
        return 3.14159 * radius * radius;
    }
};
int main() {
    Circle* circlePtr;
    Circle circle(5.0);
    circlePtr = &circle;
    cout << "Area of the circle is : " << circlePtr->getArea() << endl;
    return 0;
}
```

Run

Output

Clear

```
/tmp/pj4kpijTPC.o
Area of the circle is : 78.5397
```

09

main.cpp

```cpp
#include<iostream>
using namespace std;
struct Student {
    int id;
    string name;
}stu;

int main() {
    Student *ptr = &stu;
    ptr->id = 47;
    ptr->name = "Janisar";
    std::cout << "Student ID: " << ptr->id << ", Name: " << ptr->name <<endl;
    return 0;
}
```

Output

```
/tmp/pj4kpijTPC.o
Student ID: 47, Name: Janisar
```


10

main.cpp

```cpp
#include<iostream>
using namespace std;
int main() {
    char str[] = "Hey there! I am janisar";
    char *ptr = str;
    while (*ptr != '\0') {
        cout << *ptr;
        ptr++;
    }
    cout<<endl;
    return 0;
}
```

Output

```
/tmp/pj4kpijTPC.o
Hey there! I am janisar
```


Processing request...

11

main.cpp

```cpp
#include <iostream>
using namespace std;
class My {
public:
    string name;
    int age;
};
int main() {
    My *ptr = new My;
    ptr->name = "Janisar";
    ptr->age = 20;
    cout << "Name: " << ptr->name << ", Age: " << ptr->age << endl;
    delete ptr;
    return 0;
}
```

Run

Output

Clear

```
/tmp/pj4kpijTPC.o
Name: Janisar, Age: 20
```


12

main.cpp

```cpp
#include <iostream>
using namespace std;
class Animal {
public:
    void speak() {
        cout << "Animal speaks" << endl;
    }
};
class Dog : public Animal {
public:
    void speak() {
        cout<<"Dog bark"<<endl;
    }
};
int main() {
    Animal *Ptr = new Dog;
    Ptr->speak();
    Dog *Ptr1 = new Dog;
    Ptr1->speak();
    return 0;
}
```

Run

Output

Clear

```
/tmp/pj4kpijTPC.o
Animal speaks
Dog bark
```

13

main.cpp

```cpp
#include <iostream>
using namespace std;
class CS {
public:
    string name;
    int age;
};
int main() {
    CS *Ptr = new CS[3];

    Ptr[0].name = "Janisar";
    Ptr[0].age = 20;

    Ptr[1].name = "Zamar";
    Ptr[1].age = 20;

    Ptr[2].name = "Rafay";
    Ptr[2].age = 21;

    for(int i=0; i<3; i++) {
        cout<< "Name: " << Ptr[i].name << ", Age: " << Ptr[i].age << endl;
    }

    delete[] Ptr;
    return 0;
}
```

Run

Output

Clear

```
/tmp/pj4kpijTPC.o
Name: Janisar, Age: 20
Name: Zamar, Age: 20
Name: Rafay, Age: 21
```


14

main.cpp

```cpp
#include<iostream>
using namespace std;
class Rectangle {
private:
    int length;
    int width;
public:
    Rectangle(int l, int w){
        length=l;
        width=w;
    }
    double getArea() {
        return length*width;
    }
};
int main() {
    Rectangle* Ptr;
    Rectangle rectangle(5,6);
    Ptr = &rectangle;
    cout << "Area of the Rectangle is : " << Ptr->getArea() << endl;
    return 0;
}
```

Run

Output

Clear

```
/tmp/pj4kpijTPC.o
Area of the Rectangle is : 30
```