

Practical no-01(a)

Aim: Write a C++ program to create a simple calculator.

Algorithm:(i)Start

(ii)Main function(double,char,if else if,else)

(iii)Print the result

(iv)Stop

Theory/Explanation:

The program takes two numbers and an operation as input from the user.

The operation is stored in a character variable operation.

The program then uses a series of if-else statements to perform the corresponding calculation and outputs the result.

The program also includes error handling for division by zero and invalid operator.

Code:

```
#include <iostream>

int main() {

    std::cout<<"08_Rabin Nadar"<<std::endl;

    double num1,num2;

    char operation;

    std::cout<<"Enter the first number: ";

    std::cin>>num1;

    std::cout<<"Enter the second number: ";

    std::cin>>num2;

    std::cout<<"Enter the operation(+,-,*,/): ";

    std::cin>>operation;

    if(operation=='+'){

        std::cout<<num1+num2<<std::endl;

    }else if(operation=='-'){
```

```
std::cout<<num1-num2<<std::endl;

}else if(operation=='*'){

    std::cout<<num1*num2<<std::endl;

}else if(operation=='/'){

    if(num2==0){

        std::cout<<"Error:division by zero"<<std::endl;

    }else{std::cout<<num1/num2<<std::endl;

    }}else{

        std::cout<<"Error:invalid operator"<<std::endl;

    }

    return 0;

}
```

Output:

Output

Clear

```
/tmp/7zg1pXAfV.o
08_Rabin Nadar
Enter the first number: 25
Enter the second number: 25
Enter the operation(+,-,*,/): +
50
|
```

Conclusion:

Successfully written the code and executed it.

Practical no-01(b)

Aim: Write a C++ program to convert seconds into hours, minutes and seconds.

Algorithm:(i)Start

(ii)Main function(int-datatype)

(iii)Take input from user

(iv)Formula

(v)Print the result

(vi)Stop

Theory/Explanation:

The input number of seconds is first divided by 3600 to get the number of hours.

Then, the remaining seconds (after getting hours) is divided by 60 to get the number of minutes.

Finally, the remaining seconds (after getting minutes) is the number of seconds.

Code:

```
// Online C++ compiler to run C++ program online
```

```
#include <iostream>
```

```
int main() {
```

```
    std::cout<<"08_Rabin Nadar"<<std::endl;
```

```
    int seconds, hours, minutes;
```

```
    std::cout<<"Enter the number of seconds: ";
```

```
    std::cin>>seconds;
```

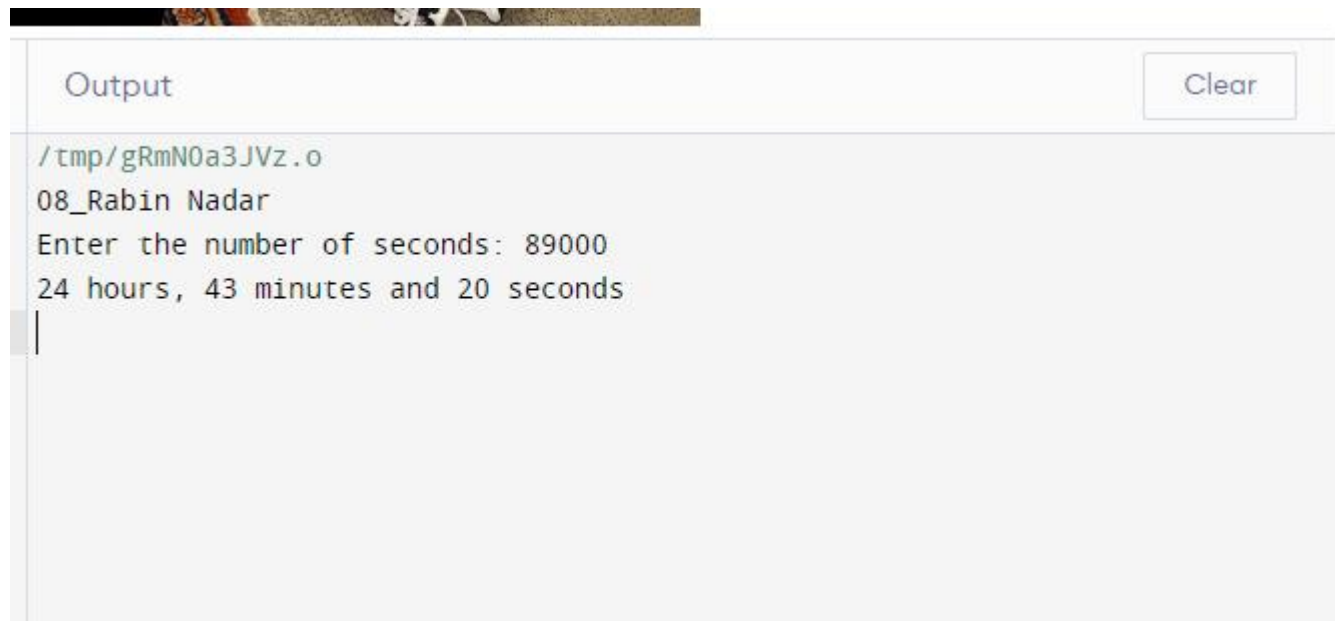
```
    hours=seconds/3600;
```

```
    minutes=(seconds%3600)/60;
```

```
    seconds=(seconds%3600)%60;
```

```
    std::cout << hours << " hours, " << minutes << " minutes and " << seconds << " seconds "
    <<std::endl;
```

```
    return 0;  
}
```

Output:A screenshot of a C++ IDE's output window. The window has a title bar with the word "Output" on the left and a "Clear" button on the right. The output text is as follows:
/tmp/gRmN0a3JVz.o
08_Rabin Nadar
Enter the number of seconds: 89000
24 hours, 43 minutes and 20 seconds
The cursor is positioned at the end of the last line of output.

```
Output  
Clear  
/tmp/gRmN0a3JVz.o  
08_Rabin Nadar  
Enter the number of seconds: 89000  
24 hours, 43 minutes and 20 seconds  
|
```

Conclusion:

Successfully written the code and executed it.

Practical no-01(c)

Aim: Write a C++ program to find the volume of a square, cone and rectangle.

Algorithm:(i)Start

(ii)Declaring the value of pi

(iii)Main function(int, double, if, else if, else)

(iv)Print the result

(v)Stop

Theory/Explanation:

The program starts by displaying a menu to the user, asking them to choose between finding the volume of a square, rectangle or cone.

The user's choice is stored in the variable choice.

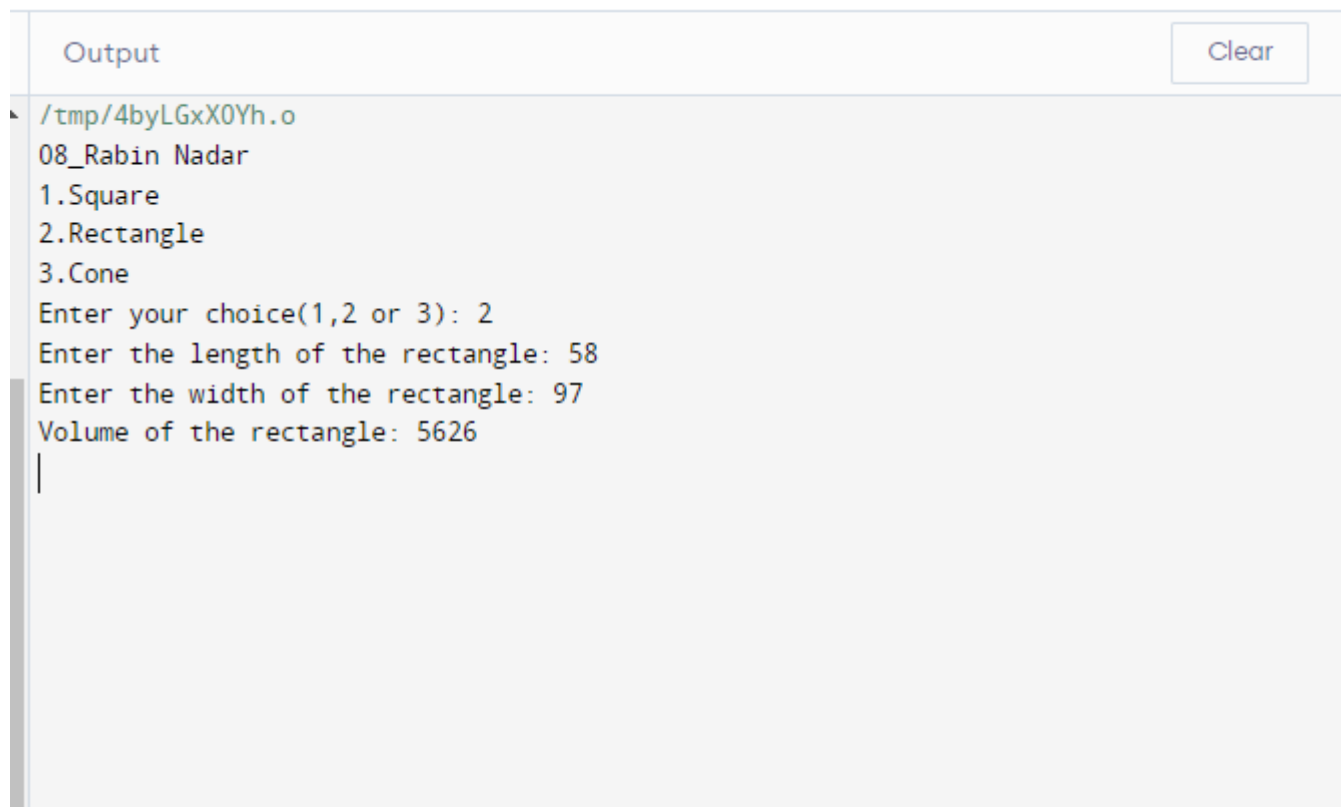
The program then uses a series of if-else statements to perform the corresponding calculation based on the user's choice, and outputs the result.

The program also includes error handling for invalid choice.

Code:

```
#include <iostream>
#include <cmath>
using namespace std;
const double pi=3.14159265358979323846;
int main() {
    std::cout<<"08_Rabin Nadar"<<std::endl;
    int choice;
    double a,b,h,r,l,w,volume;
    std::cout<<"1.Square"<<std::endl;
    std::cout<<"2.Rectangle"<<std::endl;
    std::cout<<"3.Cone"<<std::endl;
    std::cout<<"Enter your choice(1,2 or 3): ";
    std::cin>>choice;
```

```
if(choice==1){  
    std::cout<<"Enter the side of the square: ";  
    std::cin>>a;  
    volume=pow(a,3);  
    std::cout<<"Volume of the square: "<<volume<<std::endl;  
}else if(choice==2){  
    std::cout<<"Enter the length of the rectangle: ";  
    std::cin>>l;  
    std::cout<<"Enter the width of the rectangle: ";  
    std::cin>>w;  
    volume=l*w;  
    std::cout<<"Volume of the rectangle: "<<volume<<std::endl;  
}else if(choice==3){  
    std::cout<<"Enter the radius of the cone: ";  
    std::cin>>r;  
    std::cout<<"Enter the height of the cone: ";  
    std::cin>>h;  
    volume=(pi*pow(r,2)*h)/3;  
    std::cout<<"Volume of the cone: "<<volume<<std::endl;  
}else{std::cout<<"Error:invalid choice"<<std::endl;}  
return 0;  
}
```

Output:

The screenshot shows a C++ IDE's output window. At the top, there is a tab labeled 'Output' and a 'Clear' button. The output text is as follows:

```
/tmp/4byLGxX0Yh.o
08_Rabin Nadar
1.Square
2.Rectangle
3.Cone
Enter your choice(1,2 or 3): 2
Enter the length of the rectangle: 58
Enter the width of the rectangle: 97
Volume of the rectangle: 5626
|
```

Conclusion:

Successfully written the code and executed it.