

OOPS

Assignment 1

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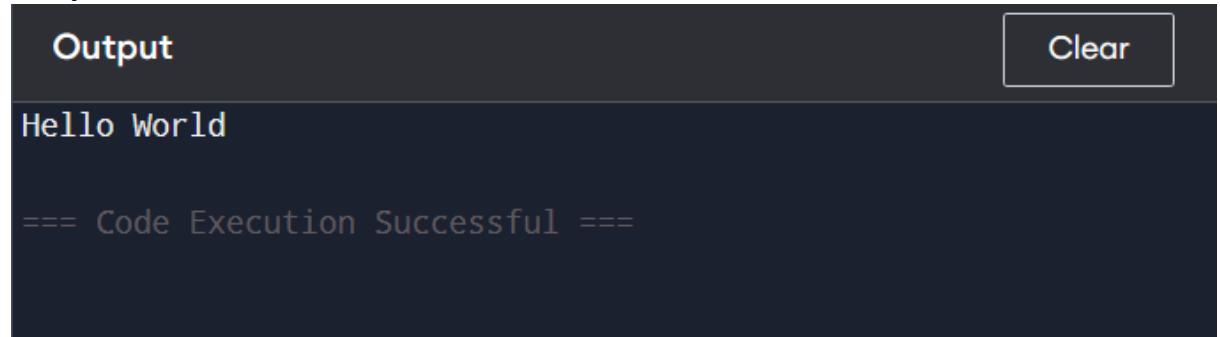
Batch-2013

Question 1-Write a program (WAP) to display "Hello World" on console display.

Code-

```
#include <iostream>
using namespace std;
int main() {
    cout << "Hello World";
    return 0;}
```

Output-



The screenshot shows a terminal window with a dark background. On the left, there is a tab labeled 'Output'. On the right, there is a small rectangular button with the word 'Clear' in white. The terminal window displays the text 'Hello World' followed by '==== Code Execution Successful ===='.

Question 2- WAP to input an integer, decimal and character and display it.

Code-

```
#include <iostream>
using namespace std;
int main() {
    int i;
    float d;
    char c;
```

```
cout << "Enter an integer: ";
cin >> i;
cout << "Enter a decimal number: ";
cin >> d;
cout << "Enter a character: ";
cin >> c;
cout << "\nYou entered:\n";
cout << "Integer = " << i << endl;
cout << "Decimal = " << d << endl;
cout << "Character = " << c << endl;
return 0;
}
```

Output-

Output Clear

```
Enter an integer: 5
Enter a decimal number: 5.6
Enter a character: char

You entered:
Integer = 5
Decimal = 5.6
Character = c

==== Code Execution Successful ===
```

Question 3- WAP to add, subtract, multiply, divide numbers.

Code-

```
#include <iostream>
```

```
using namespace std;

int main() {
    float a, b;
    cout << "Enter two numbers: ";
    cin >> a >> b;
    cout << "Addition = " << a + b << endl;
    cout << "Subtraction = " << a - b << endl;
    cout << "Multiplication = " << a * b << endl;
    if (b != 0)
        cout << "Division = " << a / b << endl;
    else
        cout << "Division not possible (division by zero)" << endl;
    return 0;
}
```

Output-

Output

Clear

```
Enter two numbers: 5
6
Addition = 11
Subtraction = -1
Multiplication = 30
Division = 0.833333

==== Code Execution Successful ====
```

Question 4- Write a C++ program that will ask for a temperature in Celsius and display it in degree Fahrenheit.[F=9C/5+32]

Code-

```
#include <iostream>
using namespace std;
int main() {
    float celsius, fahrenheit;
    cout << "Enter temperature in Celsius: ";
    cin >> celsius;
    fahrenheit = (9 * celsius) / 5 + 32;
    cout << "Temperature in Fahrenheit = " << fahrenheit << endl;
    return 0;
}
```

Output-

Output

Clear

```
Enter temperature in Celsius: 37
Temperature in Fahrenheit = 98.6

==== Code Execution Successful ===
```

Question 5- WAP to format console output using '\n', '\t', '\b' , endl, setw within cout statement

Code-

```
#include <iostream>
#include <iomanip>
using namespace std;
int main() {
    cout << "Using newline (\\\n):\\\n";
```

```
cout << "Hello\nWorld\n\n";  
  
cout << "Using tab (\t):\n";  
cout << "Name\tAge\tMarks\n";  
cout << "Aaditya\t20\t95\n\n";  
cout << "Using backspace (\b):\n";  
cout << "HelloX\b World\n\n";  
cout << "Using endl:\n";  
cout << "Line one" << endl;  
cout << "Line two" << endl << endl;  
cout << "Using setw:\n";  
cout << setw(10) << "Name"  
    << setw(10) << "Age"  
    << setw(10) << "Marks" << endl;  
cout << setw(10) << "Aaditya"  
    << setw(10) << 20  
    << setw(10) << 95 << endl;  
  
return 0;  
}
```

Output-

```
Output Clear
Using newline (\n):
Hello
World

Using tab (\t):
Name    Age Marks
Aaditya 20   95

Using backspace (\b):
HelloX World

Using endl:
Line one
Line two

Using setw:
      Name      Age      Marks
      Aaditya    20       95

==== Code Execution Successful ====
```

Question 6- WAP to utilize assignment += and -= type operators.

Code-

```
#include <iostream>
using namespace std;

int main() {
    int a;
    cout << "Enter a number: ";
    cin >> a;
    a += 5; // a = a + 5
    cout << "After a += 5, value = " << a << endl;
```

```
a -= 3; // a = a - 3  
cout << "After a -= 3, value = " << a << endl;  
return 0;  
}
```

Output-

Output Clear

```
Using newline (\n):  
Hello  
World  
  
Using tab (\t):  
Name      Age Marks  
Aaditya  20   95  
  
Using backspace (\b):  
HelloX\b World  
  
Using endl:  
Line one  
Line two  
  
Using setw:  
      Name      Age      Marks  
      Aaditya    20       95  
  
==== Code Execution Successful ===
```

Question 7- WAP to swap two numbers using bitwise operator.

Code-

```
#include <iostream>
```

```
using namespace std;
```

```
int main() {
    int a, b;
    cout << "Enter two numbers: ";
    cin >> a >> b;
    // Swapping using XOR
    a = a ^ b;
    b = a ^ b;
    a = a ^ b;
    cout << "After swapping:" << endl;
    cout << "a = " << a << endl;
    cout << "b = " << b << endl;
    return 0;
}
```

Output-

Output Clear

```
Enter two numbers: 5
6
After swapping:
a = 6
b = 5

==== Code Execution Successful ====

```

Question 8- Write a program to solve the following problem

A library charges a fine for every book return late. For first 5 days the fine is 50 paise, for 6-10 days fine is one rupee and above 10 days fine is 5 rupees. If you return the book after 30

days your membership will be cancelled .WAP to accept no. of days the member is late to return the book and display the fine or appropriate message.

Code-

```
#include <iostream>

using namespace std;

int main() {

    int days;

    float fine = 0;

    cout << "Enter number of days late: ";

    cin >> days;

    if (days <= 5 && days > 0) {

        fine = days * 0.50; // 50 paise per day

        cout << "Fine = Rs. " << fine << endl;

    }

    else if (days <= 10) {

        fine = days * 1.0; // 1 rupee per day

        cout << "Fine = Rs. " << fine << endl;

    }

    else if (days <= 30) {

        fine = days * 5.0; // 5 rupees per day

        cout << "Fine = Rs. " << fine << endl;

    }

    else {

        cout << "Membership cancelled!" << endl;

    }

    return 0;
}
```

Output-

```
Output  
Clear  
Enter number of days late: 21  
Fine = Rs. 105  
  
==== Code Execution Successful ===
```

Question 9- WAP to display arithmetic operations using switch-case statement.

Code-

```
#include <iostream>  
using namespace std;  
  
int main() {  
  
    int a, b;  
  
    char op;  
  
    cout << "Enter two numbers: ";  
  
    cin >> a >> b;  
  
    cout << "Enter operator (+, -, *, /): ";  
  
    cin >> op;  
  
    switch (op) {  
  
        case '+':  
  
            cout << "Addition = " << a + b << endl;  
  
            break;  
  
        case '-':  
  
            cout << "Subtraction = " << a - b << endl;  
  
            break;
```

```

case '*':
    cout << "Multiplication = " << a * b << endl;
    break;

case '/':
    if (b != 0)
        cout << "Division = " << a / b << endl;
    else
        cout << "Division not possible" << endl;
    break;

default:
    cout << "Invalid operator!" << endl;
}

return 0;
}

```

Output-

```

Output
Clear

Enter two numbers: 5
6
Enter operator (+, -, *, /): *
Multiplication = 30

==== Code Execution Successful ====

```

Question 10- WAP to check whether the given number is even or odd (By using if-else and conditional operator).

Code-

```

#include <iostream>
using namespace std;

```

```
int main() {  
    int num;  
  
    cout << "Enter a number: ";  
  
    cin >> num;  
  
    // Using if-else  
  
    if (num % 2 == 0)  
  
        cout << "Using if-else: Number is Even" << endl;  
  
    else  
  
        cout << "Using if-else: Number is Odd" << endl;  
  
    (num % 2 == 0) ?  
  
        cout << "Using conditional operator: Number is Even" << endl :  
  
        cout << "Using conditional operator: Number is Odd" << endl;  
  
    return 0;  
}
```

Output-

Output

Clear

```
Enter a number: 6
Using if-else: Number is Even
Using conditional operator: Number is Even

==== Code Execution Successful ====
```