

PRACTICAL-1

DATE: _____

AIM: Basics of programming

INPUT:-

i). Hello, world! Program :-

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

Hello, World!

ii). Basic Arithmetic Operation :-

```
#include <iostream>
int main() {
    int a = 10, b = 5;
    std::cout << "Addition :" << (a+b) << std::endl;
    std::cout << "Subtraction :" << (a-b) << std::endl;
    std::cout << "Multiplication :" << (a*b) << std::endl;
    std::cout << "Division :" << (a/b) << std::endl;
}
return 0;
```

Addition : 15
Subtraction : 5
Multiplication : 50
Division : 2

iii). Using If-Else Statements :-

```
#include <iostream>

int main() {
    int number;
    std::cout << "Enter a number : ";
    std::cin >> number;

    if (number > 0) {
        std::cout << "The number is positive." << std::endl;
    } else if (number < 0) {
        std::cout << "The number is Negative." << std::endl;
    } else {
        std::cout << "The number is zero." << std::endl;
    }
    return 0;
}
```

Enter a number : -5
The number is Negative

iv). For Loop :-

```
#include <iostream>

int main() {
    for (int i = 1; i <= 5; i++) {
        std::cout << i << " ";
    }
    return 0;
}
```

1 2 3 4 5

v). Simple Function :-

```

#include <iostream>

int add ( int a, int b) {
    return a + b;
}

int main() {
    int num1 = 7, num2 = 3;
    int sum = add(num1, num2);

    std::cout << "Sum :" << sum << std::endl;
    return 0;
}

```

Sum : 10

vi). Class and Object :-

```

#include <iostream>
#include <string>

class car {
public:
    std::string brand;
    int year;

    void honk() {
        std::cout << "Beep!, Beep!" << std::endl;
    }
};

int main() {
    car mycar;
    mycar.brand = "Toyota";
    mycar.year = 2020;

    std::cout << "Brand :" << mycar.brand << std::endl;
}

```

```
Std :: cout << "Year:" << mycar.year << std :: endl;
mycar.honk();
}
return 0;
```

Brand : Toyota
Year : 2020
Beep! Beep!

vii). Pointers :-

```
#include <iostream>

int main() {
    int var = 10;
    int * ptr = &var;

    Std :: cout << "Value of var:" << var << std :: endl;
    Std :: cout << "Address of var:" << &var << std :: endl;
    Std :: cout << "Pointer ptr holds address:" << ptr << std :: endl;
    Std :: cout << "Value pointed by ptr:" << *ptr << std :: endl;

    return 0;
}
```

Value of var : 10
Address of var : 0x7ffee4a0c7dc
Pointer ptr holds address : 0x7ffee4a0c7dc
Value pointed by ptr : 10

viii). Simple File I/O :-

```

#include <iostream>
#include <fstream>

int main() {
    // Writing to a file
    std::ofstream myfile ("example.txt");
    myfile << "Hello, File!";
    myfile.close();

    // Reading from the file
    std::ifstream myFileRead ("example.txt");
    std::string content;
    myFileRead >> content;
    std::cout << "File Content: " << content << std::endl;

    myFileRead.close();
    return 0;
}

```

File Content : Hello, File !

i) Exception Handling :-

```

#include <iostream>

int main() {
    try {
        int age = 15;
        if (age < 18) {
            throw "Underage!";
        }
        std::cout << "Access granted." << std::endl;
    } catch (const char * msg) {
        std::cout << "Error :" << msg << std::endl;
    }
    return 0;
}

```

Error : Underage !