SCHOOL OF OPEN LEARNING

UNIVERSITY OF DELHI

PROGRAM:- PYTHON

COURSE:- B.A. PROGRAMME WITH COMPUTER APPLICATIONS

SEMESTER:- 1

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Experiment 1: Write a program to print Hello World.

Program:

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

int main() {
        cout << "Hello World!" << endl;
    cout << "Nice to meet ya!" << endl;
        return 0;
}
```

Output:

```
Hello World!
Nice to meet ya!
```

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Experiment 2: Write a program to implement a basic calculator.

Program:

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

```
int main() {
    char operation;
    double num1, num2;

    cout << "Enter an operator (+, -, *, /): ";
    cin >> operation;

    cout << "Enter two numbers: ";
    cin >> num1 >> num2;

    switch (operation) {
        case '+':
            cout << "Result: " << num1 + num2 << endl;
            break;
        case '-':
            cout << "Result: " << num1 - num2 << endl;
            break;
        case '*':
            cout << "Result: " << num1 * num2 << endl;
            break;
        case '/':
            if (num2 != 0)
                cout << "Result: " << num1 / num2 << endl;
            else
                cout << "Error: Division by zero!" << endl;
            break;
        default:
            cout << "Error: Invalid operator!" << endl;
            break;
    }
```

```
    return 0;
}
```

Output:

```
Enter an operator (+, -, *, /): *
Enter two numbers: 2
6
Result: 12
```

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Experiment 3: Write a program to display the name, roll number, and grade of 3 students appearing in exams. Display their results, create an array of class objects, and display the array's contents.

Program:

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

struct Student {
        string name;
        int roll_no;
        double grade;
```

```
};

int main() {
    Student students[3] = {
        {"Marco", 1, 90.5},
        {"Jake", 2, 85.0},
        {"Steve", 3, 75.0}
    };

    for (int i = 0; i < 3; i++) {
        cout << "Name: " << students[i].name << endl;
        cout << "Roll Number: " << students[i].roll_no << endl;
        cout << "Grade: " << students[i].grade << endl;
        cout << endl;
    }
    return 0;
}
```

Output:

```
Name: Marco
Roll Number: 1
Grade: 90.5

Name: Jake
Roll Number: 2
Grade: 85
```

Name: Steve
Roll Number: 3
Grade: 75

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Experiment 4: Write a program to check if the number is even or odd using the if-else loop or decision statement.

Program:

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

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

        if (num % 2 == 0) {
                cout << "Even";
        } else {
                cout << "Odd";
        }
    return 0;
}
```

Output:

Enter a number: 6
Even

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Experiment 5: Write a program to check the days of the week using if else loop or decision statement

Program:

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

int main() {
	int day;
	cout << "Enter a number between 1 and 7 to get the corresponding day of the week: ";
	cin >> day;

	if (day == 1) {
		cout << "Sunday";
	} else if (day == 2) {
		cout << "Monday";
	} else if (day == 3) {
		cout << "Tuesday";
	} else if (day == 4) {
		cout << "Wednesday";
```

```
        } else if (day == 5) {
                cout << "Thursday";
        } else if (day == 6) {
                cout << "Friday";
        } else if (day == 7) {
            cout << "Saturday";

        } else {
                cout << "Invalid input. Please enter a number between
1 and 7.";
        }
    return 0;
}
```

Output:

Enter a number between 1 and 7 to get the corresponding day of the week: 5
Thursday

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Experiment 6: Write a program to find a sum of positive numbers using a while loop in C++.

Program:

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

```
int main() {
    int num = 0;
    int sum = 0;

    cout << "Enter positive numbers to calculate the sum (enter a
negative number to stop): " << endl;

   while (true) {
        cin >> num;
        if (num < 0) {
            break;
        }
        sum += num;
    }

    cout << "The sum of positive numbers is: " << sum << endl;

    return 0;
}
```

Output:

Enter positive numbers to calculate the sum (enter a negative number to stop):
2
6
7
5
6

1
5
-1
The sum of positive numbers is: 32

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Experiment 7: Write a program to find the sum of numbers until the user enters 0. Use the do-while loop.

Program:

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

int main() {
	int num = 1, sum = 0;
	do {
		cout << "Enter number: ";
		cin >> num;
		if (num > 0) {
			sum += num;
		} else if (num == 0) {
			break;
		} else {
			cout << "Invalid input. Enter a positive number or 0 to exit.";
		}
```

```
        } while (true);
        cout << "The sum is: " << sum;
    return 0;
}
```

Output:

```
Enter number: 5
Enter number: 6
Enter number: 76
Enter number:
45
Enter number: 12
Enter number: 0
The sum is: 75
```