Lab 06 TASKS (LOOPS)

Q.1) Write a program that find the sum of all the digits from 1 to given number using for loop?

Source Code:

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

int main() {
    int number, sum = 0;

    // Input the number
    cout << "Enter a positive number: ";
    cin >> number;

    // Outer loop iterates through numbers from 1 to the given number
    for (int i = 1; i <= number; i++) {
        // Inner loop extracts digits from the current number
        for (int temp = i; temp > 0; temp /= 10) {
            sum += temp % 10; // Add the last digit
        }
    }

    // Display the result
    cout << "The sum of all digits from 1 to " << number << " is: " << sum << endl;

    return 0;
}
```

Output:

```
Enter a positive number: 8
The sum of all digits from 1 to 8 is: 36

------------------------------------
Process exited after 3.197 seconds with return value 0
Press any key to continue . . .
```

Q.2) Write a program that find the even upto a given number and add all the those even numbers using while loop?

Source Code:

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

int main() {
    int number, sum = 0, current = 2; // Start with the first even number

    // Input the number
    cout << "Enter a positive number: ";
    cin >> number;

    // Use a while loop to find and sum even numbers
    while (current <= number) {
        sum += current; // Add the even number to the sum
        current += 2;    // Move to the next even number
    }

    // Display the result
    cout << "The sum of all even numbers up to " << number << " is: " << sum << endl;

    return 0;
}
```

Output:

```
Enter a positive number: 6
The sum of all even numbers up to 6 is: 12

------------------------------------
Process exited after 2.344 seconds with return value 0
Press any key to continue . . .
```

Q.3) Write a program that find the even upto a given number and add all the those even numbers using do-while loop?

Source Code:

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

int main() {
    int number, sum = 0, current = 2; // Start with the first even number

    // Input the number
    cout << "Enter a positive number: ";
    cin >> number;

    // Use a do-while loop to find and sum even numbers
    do {
        if (current > number) break; // Ensure we don't exceed the given number
        sum += current;   // Add the even number to the sum
        current += 2;     // Move to the next even number
    } while (current <= number);

    // Display the result
    cout << "The sum of all even numbers up to " << number << " is: " << sum << endl;

    return 0;
}
```

Output:

```
Enter a positive number: 10
The sum of all even numbers up to 10 is: 30

------------------------------------
Process exited after 4.866 seconds with return value 0
Press any key to continue . . .
```