Lab Task # 5

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TASK 1

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

int main(){
    int x = 1;
    do
    {
        cout << "enter a number: ";
        cin >> x;
    } while (x != 0);

    return 0;
}
```

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

int main(){
    int x = 1;
    do
    {
        cout << "enter a number: ";
        cin >> x;
    } while (x != 0);

    return 0;
}
```

```
enter a number: 9
enter a number: 8
enter a number: 74
enter a number: 2
enter a number: 0

...Program finished with exit code 0
```

Task 2

```cpp
#include <iostream>
using namespace std;
int main(){
    int num1, num2;
    double answer;
    char op, repeat = 'y';
    do{
        cout << "Enter 1st number: ";
        cin >> num1;
        cout << "Enter 2nd number: ";
        cin >> num2;
        cout << "Enter operator: ";
        cin >> op;
        switch(op){
            case '*':
                answer = num1 * num2;
                break;
            case '/':
                answer = num1 / num2;
                break;
            case '+':
                answer = num1 + num2;
                break;
            case '-':
                answer = num1 - num2;
                break;
            default:
                cout  << "Invalid character. Re-enter pls: ";
                break;
        }
        cout << "Answer: " << answer << endl;
        cout << "Enter y if you want to continue or else press any key: ";
        cin >> repeat;
        if (repeat == 'y'){
            continue;
        }
        else {
            cout << endl<< endl;
            break;
        }
    }while (repeat == 'y');
    return 0;
}
```

```cpp
        cout << "Enter operator: ";
        cin >> op;
        switch(op){
            case '*':
                answer = num1 * num2;
                break;
            case '/':
                answer = num1 / num2;
                break;
            case '+':
                answer = num1 + num2;
                break;
            case '-':
                answer = num1 - num2;
```

```
Enter 1st number: 7
Enter 2nd number: 3
Enter operator: *
Answer: 21
Enter y if you want to continue or else press any key: y
Enter 1st number: 5
Enter 2nd number: 9
Enter operator: +
Answer: 14
Enter y if you want to continue or else press any key: n




...Program finished with exit code 0
Press ENTER to exit console.
```
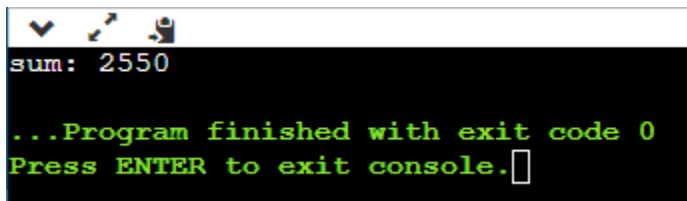
(a) part

```cpp
#include <iostream>
using namespace std;
int main()
{
    int sum = 0, i = 2;

    while (i <= 100) {
        sum = sum + i;
        i = i + 2;
    }
    cout << "sum: " << sum;

    return 0;
}
```

```
sum: 2550

...Program finished with exit code 0
Press ENTER to exit console.
```

(b) part

```cpp
#include <iostream>
using namespace std;
int main()
{
    int sum = 0, i = 1 , j;

    while (j <= 100) {
        j = i * i;
        i = i + 1;
        sum = sum + j;
    }
    cout << "sum: " << sum;

    return 0;
}
```

```cpp
#include <iostream>
using namespace std;
int main()
{
    int sum = 0, i = 1 , j;

    while (j <= 100) {
        j = i * i;
        i = i + 1;
        sum = sum + j;
    }
    cout << "sum: " << sum;

    return 0;
}
```

```
sum: 506

...Program finished with exit code 0
Press ENTER to exit console.
```

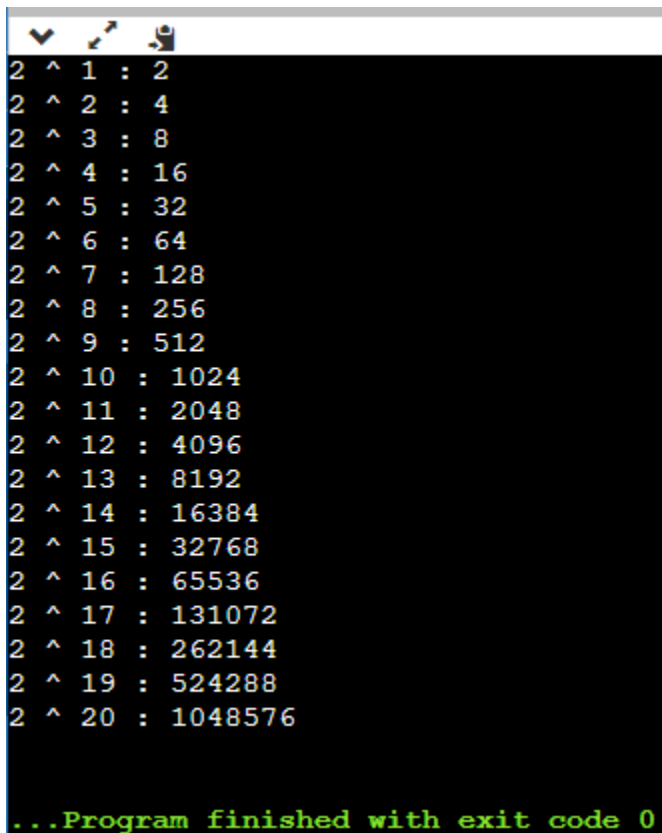# TASK 4

(a)

```cpp
#include <iostream>
#include <cmath>
using namespace std;
int main()
{
    int i, answer;
    const int two = 2;

    while (i <= 20) {
        answer = pow(two , i);
        cout << "2 ^ " << i << " : " << answer << endl;
        i = i + 1;
    }

    return 0;
}
```

```
2 ^ 1 : 2
2 ^ 2 : 4
2 ^ 3 : 8
2 ^ 4 : 16
2 ^ 5 : 32
2 ^ 6 : 64
2 ^ 7 : 128
2 ^ 8 : 256
2 ^ 9 : 512
2 ^ 10 : 1024
2 ^ 11 : 2048
2 ^ 12 : 4096
2 ^ 13 : 8192
2 ^ 14 : 16384
2 ^ 15 : 32768
2 ^ 16 : 65536
2 ^ 17 : 131072
2 ^ 18 : 262144
2 ^ 19 : 524288
2 ^ 20 : 1048576


...Program finished with exit code 0
```

(b)

```cpp
#include <iostream>
#include <cmath>
using namespace std;
int main()
{
    int sum = 0 , num, a , b;
    cout << "Input the starting number: ";
    cin >> a;
    cout << "Input the end number: ";
    cin >> b;
    if (a % 2 == 0){
        a = a + 1;
      }
    do{
      sum = sum + a;
      a = a + 2;
    }while (a <= b);
    cout << "Sum: " << sum;
    return 0;
}
```

```cpp
#include <iostream>
#include <cmath>
using namespace std;
int main()
{
    int sum = 0 , num, a , b;
    cout << "Input the starting number: ";
    cin >> a;
    cout << "Input the end number: ";
    cin >> b;
    if (a % 2 == 0){
            a = a + 1;
        }
    do{
        sum = sum + a;
        a = a + 2;
    }while (a <= b);
    cout << "Sum: " << sum;
    return 0;
}
```

```
Input the starting number: 3
Input the end number: 7
Sum: 15

...Program finished with exit code 0
Press ENTER to exit console.
```