Lab Manual 5 (Lab Tasks)

Task 1:

```
int x = 1

while (x > 0)

{

cout << "enter a number: "

cin >> x;

}
```

Task 2:

```cpp
#include <iostream>

using namespace std;


int main() {

    char choice;

    float a, b, result;


    do {

        cout << "Enter the first number ";

        cin >> a;

        cout << "Enter the second number ";

        cin >> b;


        cout << "Enter the operator that you want to use, eg: (+, -, *, /): ";

        cin >> choice;
```

```cpp
    switch (choice) {
      case '+':
        result = a + b;
        break;
      case '-':
        result = a - b;
        break;
      case '*':
        result = a * b;
        break;
      case '/':
        result = a / b;
        break;
      default:
        cout << "This is an Invalid operator";
        continue;
    }

    cout << "Result: " << result << endl;

    cout << "Enter 'R' to perform another calculation, or 'N' to quit: ";
    cin >> choice;

  } while (choice != 'N');

  return 0;
}
```

```
main.cpp                              [] ☼  Run      Output

1   #include <iostream>                              /tmp/Ce3aH539tW.o
2   using namespace std;                             Enter the first number 21
3                                                    Enter the second number 18
4 ▾ int main() {                                     Enter the operator that you want to use, eg: (+, -, *, /): -
5       char choice;                                 Result: 3
6       float a, b, result;                          Enter 'R' to perform another calculation, or 'N' to quit: R
7                                                    Enter the first number 2005
8 ▾     do {                                         Enter the second number 2002
9           cout << "Enter the first number ";       Enter the operator that you want to use, eg: (+, -, *, /): -
10          cin >> a;                                Result: 3
11          cout << "Enter the second number ";      Enter 'R' to perform another calculation, or 'N' to quit:
12          cin >> b;
13
14          cout << "Enter the operator that you want to use, eg:
                (+, -, *, /): ";
15          cin >> choice;
16
17 ▾        switch (choice) {
18              case '+':
19                  result = a + b;
```

Task 3a:

```cpp
#include <iostream>

using namespace std;

int main() {

    int sum = 0;

    int s = 2;


    while (s <= 100) {

        sum += s;

        s += 2;

    }


    cout << "The sum of every even number between 2 and 100 is " << sum << endl;


    return 0;

}
```

```cpp
1  #include <iostream>
2  using namespace std;
3
4  int main() {
5      int sum = 0;
6      int s = 2;
7
8      while (s <= 100) {
9          sum += s;
10         s += 2;
11     }
12
13     cout << "The sum of every even number between 2 and 100 is "
           << sum << endl;
14
15     return 0;
16 }
```

Output:
```
/tmp/Ce3aH539tW.o
The sum of every even number between 2 and 100 is 2550
```

Task 3b:

#include <iostream>

using namespace std;

int main() {

   int sum = 0;

   int x = 1;

   while (x <= 100) {

     sum += x * x;

     x++;

   }

   cout << "Sum of all squares between 1 and 100 is " << sum << endl;

   return 0;

}

```
main.cpp                                    [ ]  ☼   Run      Output

 1   #include <iostream>                                      /tmp/Ce3aH539tW.o
 2   using namespace std;                                     Sum of all squares between 1 and 100 is 338350
 3
 4 ▾ int main() {
 5       int sum = 0;
 6       int x = 1;
 7
 8 ▾     while (x <= 100) {
 9           sum += x * x;
10           x++;
11       }
12
13       cout << "Sum of all squares between 1 and 100 is " << sum <<
             endl;
14
15       return 0;
16   }
```

Task 4a:

```cpp
#include <iostream>

using namespace std;


int main() {

    int h = 0;

    int power = 1;


    while (h <= 20) {

        cout << "2^" << h << " is " << power << endl;

        power *= 2;

        h++;

    }


    return 0;

}
```

```cpp
main.cpp                                                    Output

1   #include <iostream>                                     /tmp/Ce3aH539tW.o
2   using namespace std;                                    2^0 is 1
3                                                           2^1 is 2
4   int main() {                                            2^2 is 4
5       int h = 0;                                          2^3 is 8
6       int power = 1;                                      2^4 is 16
7                                                           2^5 is 32
8       while (h <= 20) {                                   2^6 is 64
9           cout << "2^" << h << " is " << power << endl;   2^7 is 128
10          power *= 2;                                     2^8 is 256
11          h++;                                            2^9 is 512
12      }                                                   2^10 is 1024
13                                                          2^11 is 2048
14      return 0;                                           2^12 is 4096
15  }                                                       2^13 is 8192
                                                            2^14 is 16384
                                                            2^15 is 32768
                                                            2^16 is 65536
                                                            2^17 is 131072
                                                            2^18 is 262144
```

Task 4b:

```cpp
#include <iostream>

int main() {

    int a, b, sum = 0;


    std::cout << "The first number you want: ";

    std::cin >> a;


    std::cout << "The second number you want: ";

    std::cin >> b;


    int s = a;

    do {

        if (s % 2 != 0) {
```
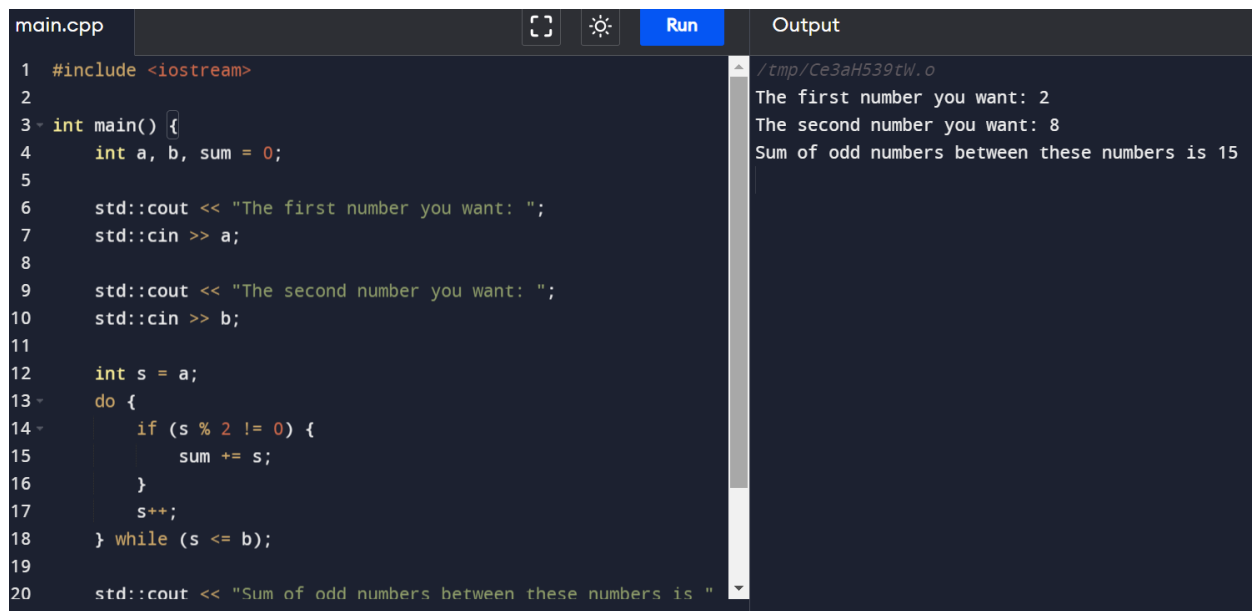
```
        sum += s;

    }

    s++;

} while (s <= b);


std::cout << "Sum of odd numbers between these numbers is "  << sum << std::endl;


return 0;

}
```