

Lab Manual 5 (Lab Tasks)

Task 1:

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

Task 2:

```
#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;
```

```
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>
2 using namespace std;
3
4 int main() {
5     char choice;
6     float a, b, result;
7
8     do {
9         cout << "Enter the first number ";
10        cin >> a;
11        cout << "Enter the second number ";
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;
```

/tmp/Ce3aH539cW.o
Enter the first number 21
Enter the second number 18
Enter the operator that you want to use, eg: (+, -, *, /): -
Result: 3
Enter 'R' to perform another calculation, or 'N' to quit: R
Enter the first number 2005
Enter the second number 2002
Enter the operator that you want to use, eg: (+, -, *, /): -
Result: 3
Enter 'R' to perform another calculation, or 'N' to quit: |

Task 3a:

```
#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;
```

```
}
```

main.cpp	Output
<pre>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 " 14 << sum << endl; 15 16 return 0; 17 }</pre>	<pre>/tmp/Ce3aH539tW.o The sum of every even number between 2 and 100 is 2550</pre>

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
<pre>1 #include <iostream> 2 using namespace std; 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 }</pre>		<pre>/tmp/Ce3aH539tW.o Sum of all squares between 1 and 100 is 338350</pre>

Task 4a:

```
#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;
```

```
}
```

main.cpp	Output
<pre>1 #include <iostream> 2 using namespace std; 3 4 int main() { 5 int h = 0; 6 int power = 1; 7 8 while (h <= 20) { 9 cout << "2^" << h << " is " << power << endl; 10 power *= 2; 11 h++; 12 } 13 14 return 0; 15 }</pre>	<pre>/tmp/Ce3aH539tw.o 2^0 is 1 2^1 is 2 2^2 is 4 2^3 is 8 2^4 is 16 2^5 is 32 2^6 is 64 2^7 is 128 2^8 is 256 2^9 is 512 2^10 is 1024 2^11 is 2048 2^12 is 4096 2^13 is 8192 2^14 is 16384 2^15 is 32768 2^16 is 65536 2^17 is 131072 2^18 is 262144</pre>

Task 4b:

```
#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 {
```

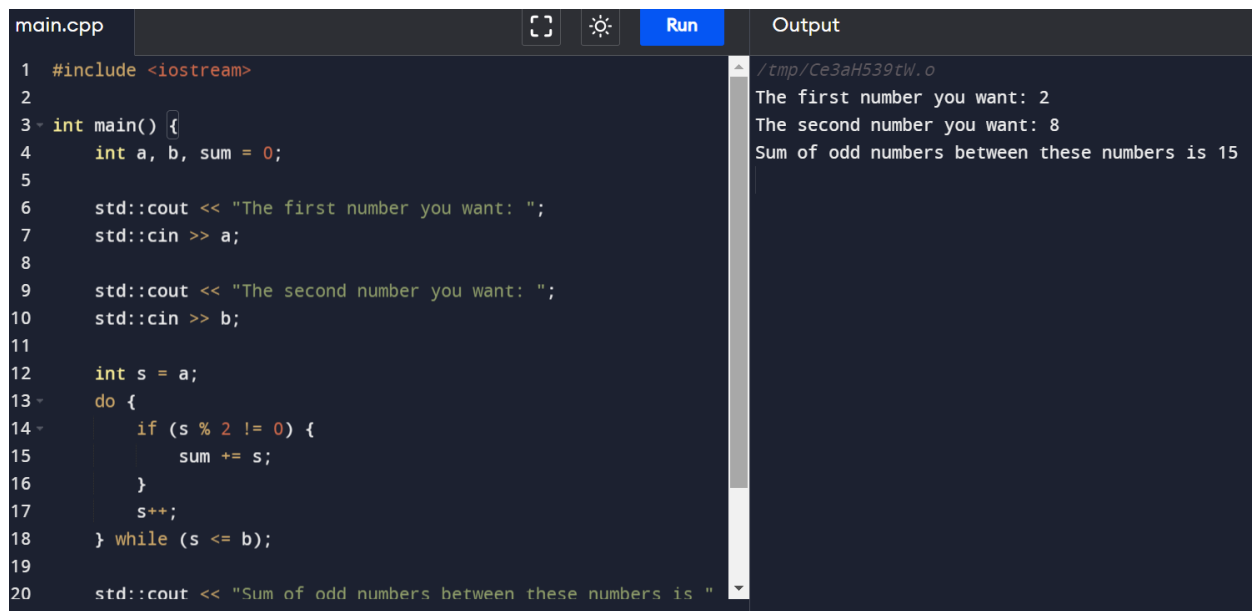
```
        if (s % 2 != 0) {
```

```
        sum += s;
    }

    s++;
} while (s <= b);

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

return 0;
}
```



The screenshot shows a C++ IDE with a dark theme. The left pane displays the source code for 'main.cpp', and the right pane shows the program's output. The code calculates the sum of odd numbers between two user-inputted values. The output shows the user entering 2 and 8, and the program outputting the sum of odd numbers between them, which is 15.

```
main.cpp  [Icon] [Icon] Run Output
1  #include <iostream>
2
3  int main() {
4      int a, b, sum = 0;
5
6      std::cout << "The first number you want: ";
7      std::cin >> a;
8
9      std::cout << "The second number you want: ";
10     std::cin >> b;
11
12     int s = a;
13     do {
14         if (s % 2 != 0) {
15             sum += s;
16         }
17         s++;
18     } while (s <= b);
19
20     std::cout << "Sum of odd numbers between these numbers is "
```

/tmp/Ce3aH539tW.o
The first number you want: 2
The second number you want: 8
Sum of odd numbers between these numbers is 15