Continuous Assessment Cover Sheet
Faculty of Engineering

Module Details			
Module Code	**ME4550**	**Module Title**	**Object Oriented Programming**
Program: SLIIT		**Course: BSc**	
Stream: Mechatronics			

Assessment details			
Title	**Lab 01**	**Group assignment**	**NO**
		If yes, Group No.	
Lecturer/ Instructor	**Mr. Amila Alexander**	**Date of Performance**	**18.07.2023**
Due date	**26.07.2023**	**Date submitted**	**24.07.2023**

Student statement and signature

By this declaration, I/we confirm my/our understanding and acceptance that the work reported in this report is my/our own work. I/we also understand the consequences of engaging in plagiarism or copying others work without proper citation. Any material used in this work (whether from published sources, the internet or elsewhere) have been fully acknowledged and referenced and are without fabrication or falsification of data.

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Details of the student/s submitting the assignment		Signature
ID Number	**Name (As per the institute records)**	
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Receiving Officer (seal, signature, date)	**Specific comments about the work (including overall comments and guidelines for improvement)**
	Tutor: **Signature:** **Date:**
	Marks: **[All marks are subject to external moderation and approval of board of examinations]**

Exercise 1

i.

```cpp
#include <iostream>

using namespace std;

int main(){
    for (int i = 1; i<=5; i++){
        for (int j = 1; j <= i; j++ ){
            cout << "*";
        }
    cout << endl;
    }
}
```

Figure 1:Code exercise 1 part 1

```
*
**
***
****
*****

--------------------------------
Process exited after 0.07479 seconds with return value 0
Press any key to continue . . .
```

Figure 2:Output for exercise 1 part 1

ii.

```cpp
#include <iostream>

using namespace std;

int main(){
    for(int i=1; i<=5; i++){
        for (int space=1; space<i; space++){
            cout << " ";
        }
        for(int j = 0; j<5; j++){
            cout << "*";
        }
    cout << endl;
    }
    return 0;
}
```

Figure 3:Code for exercise 1 part 2

```
*****
 *****
  *****
   *****
    *****

--------------------------------
Process exited after 0.08016 seconds with return value 0
Press any key to continue . . .
```

Figure 4: Output for exercise 1 part 2

iii.

```cpp
#include <iostream>

int main() {
    int rows;

    std::cout << "Enter the number of rows: ";
    std::cin >> rows;

    // Upper half of the pattern
    for (int i = 1; i <= rows; i++) {
        for (int space = 1; space <= rows - i; space++) {
            std::cout << " ";
        }

        for (int j = 1; j <= i; j++) {
            std::cout << "*";
        }

        std::cout << std::endl;
    }

    // Lower half of the pattern
    for (int i = rows - 1; i >= 1; i--) {
        for (int space = 1; space <= rows - i; space++) {
            std::cout << " ";
        }

        for (int j = 1; j <= i; j++) {
            std::cout << "*";
        }

        std::cout << std::endl;
    }

    return 0;
}
```

Figure 5:Code for exercise 1 part 3

```
Enter the number of rows: 5
    *
   **
  ***
 ****
*****
 ****
  ***
   **
    *

--------------------------------
Process exited after 3.379 seconds with return value 0
Press any key to continue . . .
```

Figure 6:Output for exercise 1 part 3

Exercise 2

```cpp
#include <iostream>

using namespace std;

int main(){

    int age;
    string name;

    cout << "Enter your name: ";
    cin >> name;

    cout << "Enter your age: ";
    cin >> age;

    if (age > 60){
        cout << "Hi " << name << "! Your age group is seniors.";
    }else if(age >25){
        cout << "Hi " << name << "! Your age group is adult.";
    }else if(age > 14){
        cout << "Hi " << name << "! Your age group is youth.";
    }else{
        cout << "Hi " << name << "! Your age group is children.";
    }
    return 0;
}
```

Figure 7:Code for exercise 2

```
Enter your name: Thamod
Enter your age: 23
Hi Thamod! Your age group is youth.
--------------------------------
Process exited after 5.065 seconds with return value 0
Press any key to continue . . .
```

Figure 8:Output for exercise 2

Exercise 3

```cpp
#include <iostream>

using namespace std;

int main() {
    int num1, num2, num3;

    cout << "Enter three numbers: ";
    cin >> num1 >> num2 >> num3;

    if (num1 > num2) {
        swap(num1, num2);
    }
    if (num2 > num3) {
        swap(num2, num3);
    }
    if (num1 > num2) {
        swap(num1, num2);
    }

    cout << "Numbers in ascending order: "
         << num1 << " " << num2 << " " << num3 << endl;

    return 0;
}
```

Figure 9:Code for exercise 3

```
Enter three numbers: 23
55
66
Numbers in ascending order: 23 55 66

--------------------------------
Process exited after 5.163 seconds with return value 0
Press any key to continue . . .
```

Figure 10:Output for exercise 3

Exercise 4

i.

```cpp
#include <iostream>

using namespace std;

int main() {
    double celsius, fahrenheit;

    cout << "Enter the temperature in Celsius: ";
    cin >> celsius;

    fahrenheit = (celsius * 9.0 / 5.0) + 32.0;

    cout << "Temperature in Fahrenheit: " << fahrenheit << " °F" << endl;

    return 0;
}

```

Figure 11:Code for exercise 4 part 1

```
Enter the temperature in Celsius: 27
Temperature in Fahrenheit: 80.6  F

--------------------------------
Process exited after 3.061 seconds with return value 0
Press any key to continue . . .
```

Figure 12:Output for exercise 4 part 1

ii.

```cpp
#include <iostream>

using namespace std;

int main() {
    double celsius, fahrenheit;

    cout << "Enter the temperature in Celsius: ";
    cin >> celsius;

    fahrenheit = (celsius * 9.0 / 5.0) + 32.0;

    if (fahrenheit > 300.0) {
        cout << "Alert! Surface is too hot" << endl;
        return 1;
    }

    cout << "Temperature in Fahrenheit: " << fahrenheit << " °F" << endl;

    return 0;
}
```

Figure 13:Code for exercise 4 part 2

```
Enter the temperature in Celsius: 666
Alert! Surface is too hot

--------------------------------
Process exited after 4.734 seconds with return value 1
Press any key to continue . . .
```

Figure 14:Output for exercise 4 part 2

iii.

```cpp
#include <iostream>

using namespace std;

int main() {
    double fahrenheit, celsius;

    cout << "Enter the temperature in Fahrenheit: ";
    cin >> fahrenheit;

    celsius = (fahrenheit - 32.0) * 5.0 / 9.0;

    cout << "Temperature in Celsius: " << celsius << " °C" << endl;

    return 0;
}

```

Figure 15:Code for exercise 4 part 3

```
Enter the temperature in Fahrenheit: 100
Temperature in Celsius: 37.7778  C

--------------------------------
Process exited after 3.475 seconds with return value 0
Press any key to continue . . .
```

Figure 16:Output for exercise 4 part 3