



**Assignment Cover– be sure to keep a copy of all work submitted assessment
To be completed by student – PLEASE PRINT CLEARLY**

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Lecturer: MDM SITI ROBAYA BINTI JANTAN		Lab group / Tutorial group / Tutor (if applicable) SECTION 2
Course and Course Code: PROGRAMMING FOR DATA SCIENCE (SWC2273)		Submission Date: 22/2/2024
Assignment No. / Title: LAB WORK		Extension & Late submission: ALLO WED / <u>DISALLOWED</u>
Assignment type: INDIVIDUAL	% of Assignment Mark	Returning Date:
<p>Penalties:</p> <ol style="list-style-type: none"> 1. 10% of the original mark will be deducted for every one-week period after the submission date 2. No work will be accepted after two weeks of the deadline 3. If you were unable to submit the coursework on time due to extenuating circumstances you may be eligible for an extension 4. Extension will not exceed one week 		
<p>Declaration: I the undersigned confirm that I have read and agreed to abide by these regulations on plagiarism and cheating. I confirm that this piece of work is my own. I consent to appropriate storage of my work for checking to ensure that there is no plagiarism/ academic cheating.</p> <p>Signature(s):</p> <p>Full Name:</p>		
This section may be used for feedback or other information:		

```
#include <iostream>
```

```
#include <cmath>
```

```
using namespace std;
```

```
int main ()
```

```
{
```

```
    int choice;
```

```
    double radius, lenght, width, area;
```

```
    const double PI = 3.412;
```

```
    cout<<" Choose a shape to calculate its area : " <<endl;
```

```
    cout<<" 1. Circle " <<endl;
```

```
    cout<<" 2. Rectangle " <<endl;
```

```
    cout<<" Enter your choice (1 or 2) : ";
```

```
    cin>>choice;
```

```
    if (choice == 1) {
```

```
        cout<<" Enter the radius of the circle : ";
```

```
        cin>>radius;
```

```
        area = PI * pow(radius, 2);
```

```
        cout<<" Area of the circle is : " <<area<<endl;
```

```
    }
```

```
else if (choice == 2) {

    cout<<" Enter the lenght and width of the rectangle : ";

    cout<<" Enter the lenght of the rectangle : ";

    cin>>lenght;

    cout<<" Enter the width of the rectangle : ";

    cin>>width;

    if ((lenght <= 0) || (width <= 0))

        cout<<" Invalid input . Lenght and width cannot be negative. "<<endl;

    area = lenght * width; //Calculate area of rectangle

    cout<<" Area of the rectangle is : " <<area<<endl;

}

else

    cout<<" Invalid choice. Please enter 1 or 2. " <<endl;

//end of it

return 0;

} //end of the main function
```

```
C:\Users\User\OneDrive\Documents\lab work.cpp - [Executing] - Dev-C++ 5.11
C:\Users\User\OneDrive\Documents\lab work.cpp
Choose a shape to calculate its area :
1. Circle
2. Rectangle
Enter your choice (1 or 2) : 1
Enter the radius of the circle : 37
Area of the circle is : 4671.03

-----
Process exited after 68.86 seconds with return value 0
Press any key to continue . . .
```

```
C:\Users\User\OneDrive\Documents\lab work.cpp - [Executing] - Dev-C++ 5.11
C:\Users\User\OneDrive\Documents\lab work.cpp
Choose a shape to calculate its area :
1. Circle
2. Rectangle
Enter your choice (1 or 2) : 2
Enter the length and width of the rectangle : Enter the length of the rectangle : 67
Enter the width of the rectangle : 76
Area of the rectangle is : 5092

-----
Process exited after 12.7 seconds with return value 0
Press any key to continue . . .
```

Syntax Errors:

1. `cout << "Area of the circle is: " << area endl;`

wrong symbol on `area endl`. Change to `area << endl`

Correction :

`cout << "Area of the circle is: " << area << endl;`

2. `cin << length;`

`cout << "Enter the width of the rectangle: ";`

`cin << width;`

wrong symbol on `cin` function causing cannot run correctly

Correction :

`cin >> length;`

`cout << "Enter the width of the rectangle: ";`

`cin >> width;`

3. Line 28 wrong symbol on `if ((length > 0) || (width > 0))`

Correction:

`if ((length < 0) || (width < 0))`

Logic Errors:

1. Pi was not declared causing calculation cannot be make

Correction :

```
int main() {  
  
    int choice;  
  
    double radius, length, width, area ;  
  
    double PI = 3.142;
```

2. Did not declare #include <cmath> causing power on line 18 cannot be used

Correction :

```
#include <iostream>  
  
#include <cmath>
```

3. cout << "Enter the length and width of the rectangle: ";

```
cout << "Enter the length of the rectangle: ";
```

```
cin >> length;
```

```
cout << "Enter the width of the rectangle: ";
```

```
cin >> width;
```

Don't need to print out two time

Correction :

```
cout << "Enter the length of the rectangle: ";
```

```
cin >> length;
```

```
cout << "Enter the width of the rectangle: ";
```

```
cin >> width;
```


