Philip Pesic

Week 6

September 25 2022

Week 6 Prog 4

Convert problems 3,5,6,7 in to template classes, of week 5.

Test each with Implicit int, float, double, long int.

```
//
//  main.cpp
//  Week 6 Prog 4
//
//  Created by Pippo Pesic on 9/25/22.
//

#include <iostream>
using namespace std;

template <class T>
class circle {
        T radius;
public:

        T getRadius(void) {return radius;}
```

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```
        void setRadius(T inRadius) {radius = inRadius;}


        T calcCircumference() {
        T circumference = radius * 3.14159;
        return circumference;
        }


        T calcArea() {
        T area = 3.14159 * (radius^2);
        return area;
        }


        T calcDiameter() {
        T diameter = radius * 2;
        return diameter;
        }
};


int main() {
        circle<double> c1;
        c1.setRadius(5);
```

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```
        cout << "Radius = " << c1.getRadius() << endl;

        cout << "Circumference = " << c1.calcCircumference() << endl;

        cout << "Area = " << c1.calcArea() << endl;

        cout << "Diameter = " << c1.calcDiameter() << endl;


        circle<int> c2;

        cout << "Radius = " << c2.getRadius() << endl;

        cout << "Circumference = " << c2.calcCircumference() << endl;

        cout << "Area = " << c2.calcArea() << endl;

        cout << "Diameter = " << c2.calcDiameter() << endl;


        cout << "Philip Pesic 9/25/22" << endl;

        return 0;

}
```

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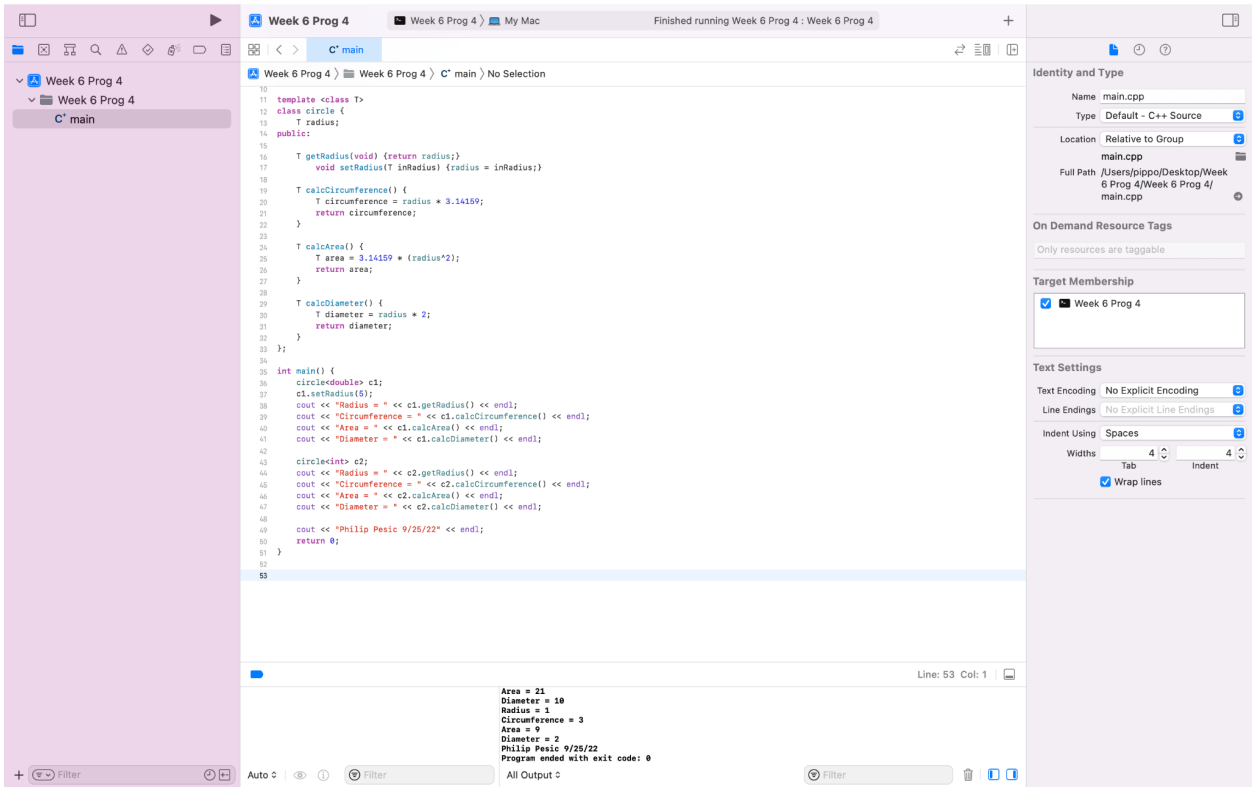

I learned: how to write templates and template classes

circle
-radius: T;
+calcArea (area: T) return pi * radius^2 +calcCircumference (circumference: T) return 2*pi*radius +calcDiameter (diameter: T) return 2*radius