

## Object Oriented Programming [oop]-SQUAD-BSC:

Our code is developed on inheritance hierarchy based upon a Polygon class that has three abstract methods (CalcArea, CalcPerimeter, Draw). These methods are inherited and implemented by other child classes that extends the base class such as IsoscelesTriangle, EquilateralTriangle, Rectangle, Square, Pentagon, Hexagon as well as Octagon. Moreover, each of these classes has members that are declared private are accessible within the class only. Data members of a class are declared private by adding a double underscore '\_\_' symbol before the attributes of that class. An object of every class is declared that can access this class methods as after choosing which polygon and giving the needed input this object is used to access the methods for area calculation as well as perimeter and draw function that are printed and after that the menu is shown waiting for a new polygon to be chosen.

Our program starts by asking the user to select which polygon to calculate its area or perimeter or to draw it by selecting from 1 to 7 from the shown menu.

If the user chose another option rather than from 1 to 7, a try and except is used as an invalid input message will be printed also the menu will be shown again and asks the user to enter a correct one.

Furthermore, if the user enters any invalid length for the chosen polygon rather than the needed, a try and except is used as an invalid input message is printed and asks the user to enter a valid one.

An object of every class is declared that can access this class methods as after choosing which polygon and giving the needed input this object is used to access the methods for area calculation as well as perimeter and draw function that are printed and after that the menu is shown waiting for a new polygon to be chosen.

The Draw function is done by using turtle library for all polygons.

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Shady ----> Equilateral and isosceles triangle
Raneem ----> Octagon
Khlood ----> Hexagon
Ziad ----> Pentagon and polygon classes
Seif ----> Quadrilateral
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