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Computer Science 001

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Prof Jamal Ashraf

Class time 7:30-10:00 am

Final Project: Shape Drawing Calculator

The Shape drawing calculator is a program created to visualize a shapes in two dimensions. This is done through the use of turtle graphics and functions. The program begins by asking the user what shape they would like to calculate, and draw. To input a choice in numbers between 1 and 4. Each number corresponds to a specific shape for example: 1) circle 2) Triangle 3) Square 4) Rectangle. The input goes into the validation function called get\_input\_number(): where the program makes sure there is a valid input otherwise it will return back to the initial input. If the input is correct the main function provides the available choice shapes for calculation. The user will again need to input a number that represents the calculator’s available calculations. Once the desired calculation is given the program will ask for a known value in order to perform the calculation, otherwise it would not be possible to perform certain calculations. From there the program will take the known value and use the supported math python library that is imported at the very beginning. The math library provides functions necessary to carry out specific calculations such as the square root function. The calculation is carried out in the specific function and the result is printed. This result is then taken and drawn out. This is done through turtle graphics and its built in functions. However it is important to note that the angles of each shape change depending on the chosen shape that is to be drawn. This is done so that turtle graphics can draw one continuous line into a two dimensional shape. It is then filled in and colored for a creative result that highlights the shape. This shape is draw in a new window where the user can then close and end the program.