

DOUBLE FACTORY

You have been given the task of designing a system to display and print shapes from a database. The resolution required to display and print the shapes depends on the computer that the system is currently running on, i.e., the CPU speed and the amount of memory available. Your system must be careful about how much demand it is placing on the computer.

The shapes are: Circle, Square, and Rectangle. Also, write functions for printing the surface area and perimeter of these shapes.

There can be three types of computers, ComputerA, ComputerB, and ComputerC. All of these have their own CPU and MMU. The resolutions of the images produced by the computers are 200x200, 350x250, and 550x430, respectively.

You have to input the Computer name, and the shape that you are trying to display, along with the parameters for the shape (you don't have to take any input from the screen, designing a few test cases should be okay). The code should initialize the proper CPU and MMU (as customary according to the design pattern), and finally print the name of the shape, the resolution, and the surface area and perimeter (obviously, to calculate the surface area and perimeter, you will need the parameters for the shapes). While coding, think of the necessary boundary conditions according to the unique situation of your code.