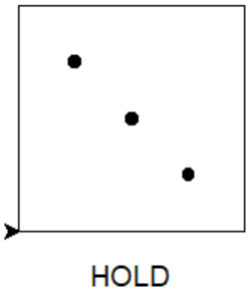
Computational Problem Solving CSCI-603
Pig Dice Turtle Game Lab 2

6/1/2021

1 Problem

In your programming assignment you will be developing a graphical application to play the simple dice game "Pig".

1.1 Problem Solving Session



For this lab, you will deal only with drawing a 2-dimensional face of a die using the Python turtle package.

You will work in a group of three or four students as determined by the instructor. Each team will work together to complete the following activities.

Assume the following:

- All drawing functions begin and end with the turtle facing east at the lower left hand corner of the die, pen up.
- There is a constant `SIDE` that is the dimension of one side of the die.

Assume you have already written the following functions:

- `draw_outline` draws the square outline of the die.
- `draw_center_dot` draws a single pip at the center of the die.

1. Write code (not a whole function) that draws a die representing the number 1.
2. Write a function `draw_two_dots` that draws the pips for the die face representing 2.
3. Using code that only calls `draw_outline`, `draw_center_dot`, and `draw_two_dots`, and code that moves the turtle with the pen up only, write code that draws the entire die face representing the number 4. Again, no function definition is needed.
4. Write a function `draw_die` that takes a single argument `pips`, the number of pips to show on the die face. It should be capable of drawing the entire die face for the numbers 1, 2, 3, 4, or 5.
   Any other parameter value should result in an error. Do this by putting the following statement in the proper place:

   ```
   assert boolean-expression, "Illegal #pips: " + str( pips )
   ```

   If the boolean-expression evaluates to False, the assert statement will raise an exception. Define that boolean-expression.

   The same restrictions to the code in the previous question still apply here.

If you finish earlier, define the content of the `draw_outline` and `draw_center_dot` functions.

At the end of problem-solving, put all group members' names on the sheet, number each item and hand in your work, one copy per team.