COMP1005/5005 - Practical Test 3

Download the case code from the Assignment area on Blackboard, then complete the four tasks below - one mark/program for each task:
Note, there are larger images of the plots on the assessment page.

1. **Copy demo1.py to task1.py then modify to create/plot Trees:**
   a. Use a loop to add ten Trees to the **item** list
   b. Use another loop to plot them from the list – taking the position and plotting red circles using plt,scatter()
   c. Update the plot title to describe the plot.
   d. Use fig.savefig("task1.png") to save the plot

2. **Copy task1.py to task2.py then modify to create/plot Trees:**
   a. Duplicate the plot from Task 1 and plot them together as side by side subplots
   b. Modify grid to have a green frame. Use a colorbar to find the right value
   c. Modify the second subplot to have green circles, twice as big as the original (red) subplot, and a hot colormap. Increase the number of trees to 20.
   d. Update the plot title to describe the plot.
   e. Create a higher level title (suptitle) to go over both subplots
   f. Use fig.savefig("task2.png") to save the plot

3. **Make and test a Block class – using a test harness:**
   a. Based on demo2.py, create task3.py to test the Block class in isolation
   b. Change the size of the block to be 25x25 and add four trees
   c. Create a House class – duplicate the Tree code in canopy.py and modify to have height and width. Add one house and make it yellow.
   d. Update the plot title as shown in the example plot.

4. **Create a code model that has six blocks in a 2x3 grid:**
   a. Copy demo2.py to task4,py. Update the map_shape to be a 2x3 grid
   b. Create six blocks: the top row will have a house and three trees each, the lower row will have only trees in a range of shades of green (random.choice)
   c. Use plt.plot() to add red line around the blocks
   d. Update the plot title as shown in the example plot

README - Update README file to include info on your code and images

Ask your tutor to assess your work when complete, then upload to BB

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zip PracTest3_ID *
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