

Quiz 6

Subject: Recursion, Comprehension and Plotting

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Due Date: 28.11.2017 23:59

Accept your *6th Quiz*.

Problem1: Diamond-Printing Program using Recursion

Write a program that prints the following diamond shape corresponding to the input value using recursion.

Enter a number: 5

```
  *
 ***
*****
*****
*****
*****
***
 *
 *
```

Problem2: Diamond-Printing Program using Comprehension.

Write a program that prints the following diamond shape corresponding to the input value using comprehension. There is no restrictions on using comprehension methods.(list,set or dictionary comprehension).

Enter a number: 5

```
  *
 ***
*****
*****
*****
*****
***
 *
 *
```

Problem3: Plotting on Occupancy Detection Data Set

In this phase, you will work on Occupancy Detection Data Set. This dataset is available at https://drive.google.com/file/d/1T_fUMMFp2LssPrKDtQioYSYAKg3L0h1O/view?usp=sharing

Attribute Information:

date time, year-month-day hour:minute:second

Temperature, in Celsius

Relative Humidity, %

Light, in Lux

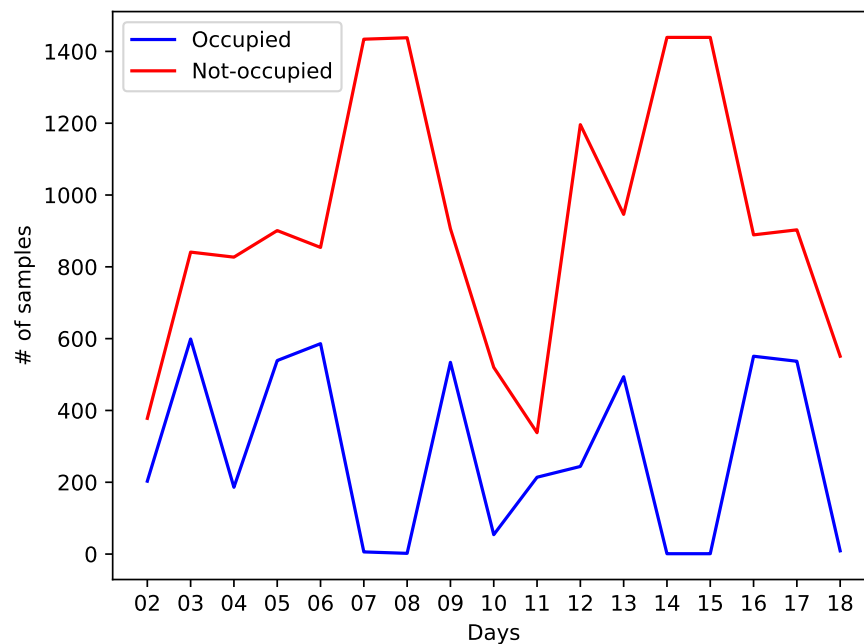
CO2, in ppm

Humidity Ratio, Derived quantity from temperature and relative humidity, in kgwater-vapor/kg-air

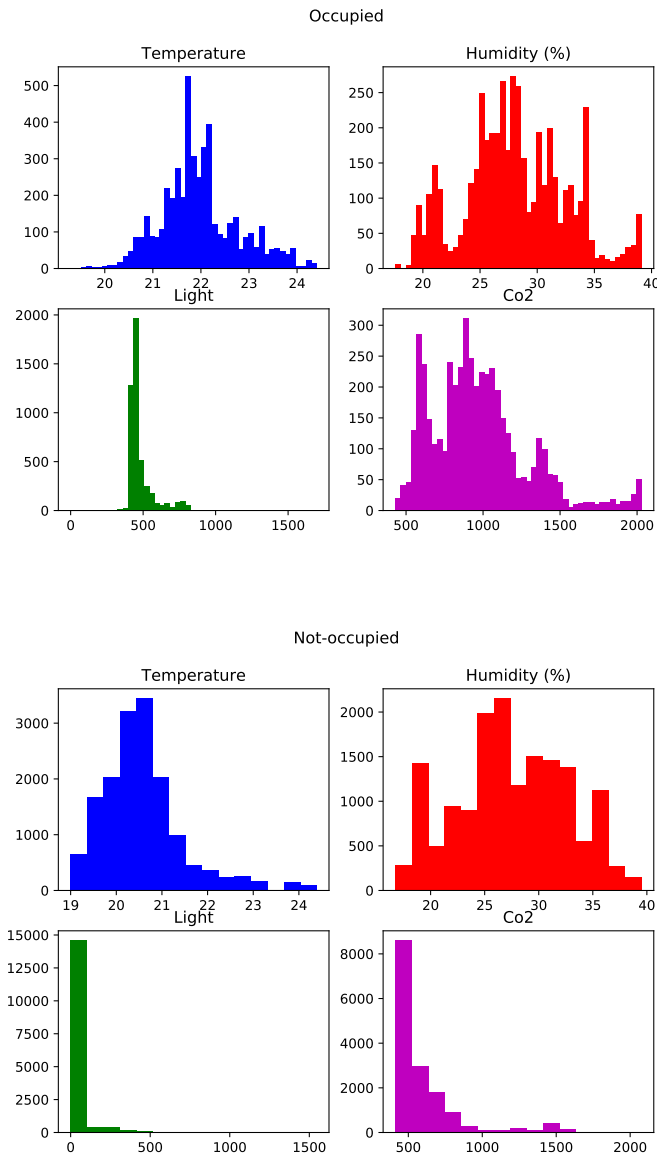
Occupancy, 0 or 1, 0 for not occupied, 1 for occupied status

Considering the dataset, you are to:

1. Create bar plot that displays the number of occup and not occup classes on the given dates. Save as -Fig1.pdf-



2. Create two separate histogram plots within a single figure window. These plots should visualize the distribution of Temperature, Relative Humidity, Light, CO₂ of both occup and not occup classes. Save as -Fig2.pdf and Fig3.pdf -



Notes for plot :

- Your figures should exactly match to the figure below including legend box and x,y-labels.
- Do not show the figure window but save.

Notes

- Do not miss the submission deadline.
- Save all your work until the quiz is graded.
- You can ask your questions via Piazza and you are supposed to be aware of everything discussed on Piazza.
- You must submit your work with the file hierarchy as stated below:
 - <quiz6-1.py>
 - <quiz6-2.py>
 - <quiz6-3.py>