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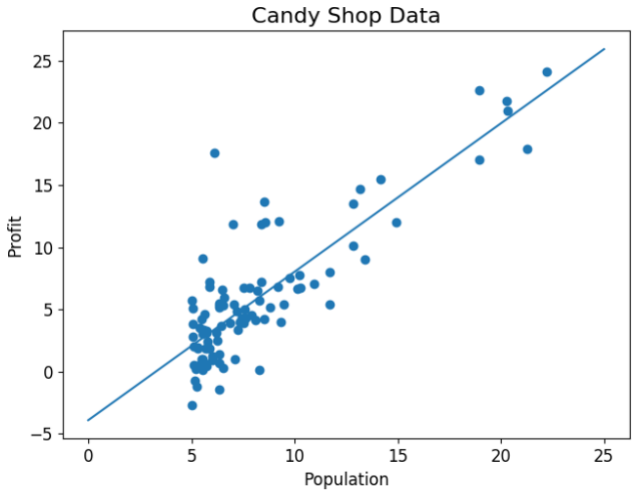
Lab6

1. For Mandatory part 1 Linear Least Squares:
   (1) To run "LLSR_9817961224.py", the following command should be entered:
   **python3 LLSR_9817961224.py**
   (2) Result:

```
(venv) student@studentVM:~$ python3 LLSR_9817961224.py
Parameter w:  [[-3.89578088]
 [ 1.19303364]]
The expected profits in the cities of 20,000 population is $ -15097.135899326668
The expected profits in the cities of 50,000 population is $ 20693.873426361144
(venv) student@studentVM:~$
```




Parameter w in this question is $\begin{pmatrix} -3.89578088 \\ 1.19303364 \end{pmatrix}$
The expected profits in the cities of 20,000 population is $-15097.135899326668
The expected profits in the cities of 50,000 population is $20693.873426361144

2. For Mandatory part 2 Unsupervised Image Clustering:
   (1) I take
   https://blog.csdn.net/simple_the_best/article/details/75267863
   https://blog.csdn.net/panrenlong/article/details/81736754
   https://zhuanlan.zhihu.com/p/30608230
   as a reference.

   (2) To run "kmeans.py", the following command should be entered:
   python3 kmeans.py [N] [Flag_of_Reading], where N can be any number you want and Flag_of_Reading can be chosen from 0 or 1
   e.g. **python3 kmeans.py 1000 1**
   (3) The result.txt stores the cluster label for each sample