

```
In [2]: #Spashtunyar  
#week 1 and 2 for DSC 540  
#data wrangling homework
```

```
In [6]: list1= []  
for x in range (0,20):  
    list1.append(x)  
list1
```

```
Out[6]: [0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]
```

```
In [7]: for i in list1:  
        print(i)
```

```
0  
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19
```

```
In [8]: 30 in list1
```

```
Out[8]: False
```

```
In [9]: 15 in list1
```

```
Out[9]: True
```

```
In [10]: 2342 in list1
```

```
Out[10]: False
```

```
In [12]: 30/2 in list1
```

```
Out[12]: True
```

```
In [15]: list1.reverse()  
list1
```

```
Out[15]: [19, 18, 17, 16, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0]
```

```
In [17]: list2= []  
        for x in range (0,5):  
            list2.append(x)  
        list2
```

```
Out[17]: [0, 1, 2, 3, 4]
```

```
In [18]: list1.append(list2)  
        list1
```

```
Out[18]: [19,  
          18,  
          17,  
          16,  
          15,  
          14,  
          13,  
          12,  
          11,  
          10,  
          9,  
          8,  
          7,  
          6,  
          5,  
          4,  
          3,  
          2,  
          1,  
          0,  
          [0, 1, 2, 3, 4]]
```

```
In [20]: list3= list2+list2
```

```
In [21]: list3
```

```
Out[21]: [0, 1, 2, 3, 4, 0, 1, 2, 3, 4]
```

```
In [22]: 4 in list3
```

```
Out[22]: True
```

```
In [189... #question 2  
import pandas as pd  
columns = ['Year', 'Population']  
populationData = pd.read_csv(r"C:\Users\spashtunyar\Documents\School\DSC0540\world-pop  
populationData
```

Out[189]:

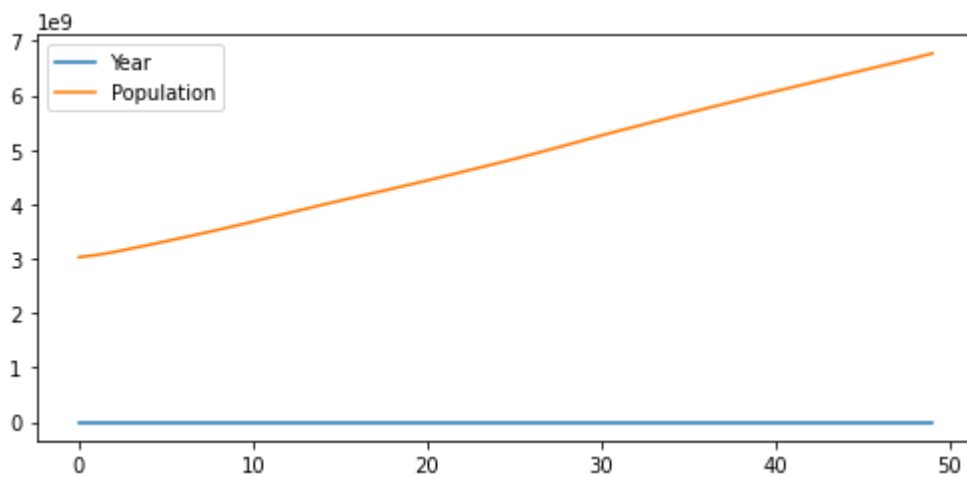
	Year	Population
0	1960	3028654024
1	1961	3068356747
2	1962	3121963107
3	1963	3187471383
4	1964	3253112403
5	1965	3320396924
6	1966	3390712300
7	1967	3460521851
8	1968	3531547287
9	1969	3606994959
10	1970	3682870688
11	1971	3761750672
12	1972	3839147707
13	1973	3915742695
14	1974	3992806090
15	1975	4068032705
16	1976	4141383058
17	1977	4214499013
18	1978	4288485981
19	1979	4363754326
20	1980	4439638086
21	1981	4516734312
22	1982	4595890494
23	1983	4675178812
24	1984	4753877875
25	1985	4834206631
26	1986	4918126890
27	1987	5004006066
28	1988	5090899475
29	1989	5178059174
30	1990	5266783430
31	1991	5351836347
32	1992	5433823608

	Year	Population
33	1993	5516863641
34	1994	5598658151
35	1995	5681689325
36	1996	5762235749
37	1997	5842585301
38	1998	5921799957
39	1999	6001269553
40	2000	6078274622
41	2001	6155652495
42	2002	6232413711
43	2003	6309266583
44	2004	6385778679
45	2005	6462054420
46	2006	6538196688
47	2007	6614396907
48	2008	6692030277
49	2009	6775235741

```
In [198... plt.rcParams["figure.figsize"] = [7, 3.50]
plt.rcParams["figure.autolayout"] = True
```

```
In [201... populationData.plot()
```

Out[201]: <AxesSubplot:>



```
In [181... import matplotlib.pyplot as plt
```

```
In [183... plt.plot(populationData(Year), Population)
```

```
-----  
NameError                                Traceback (most recent call last)  
Input In [183], in <cell line: 1>()  
----> 1 plt.plot(populationData(Year), Population)  
  
NameError: name 'Year' is not defined
```

```
In [72]: #Activity 1  
import random  
  
LIMIT = 100  
random1= [random.randint(0, LIMIT) for x in range(0, LIMIT)]
```

```
In [52]: random1by3 = [a for a in random1 if a % 3 == 0]  
random1by3
```

```
Out[52]: [24,  
93,  
63,  
21,  
18,  
27,  
81,  
54,  
48,  
75,  
9,  
45,  
66,  
93,  
96,  
57,  
12,  
78,  
36,  
0,  
45,  
51,  
18,  
96,  
63,  
63,  
54,  
75,  
75,  
15,  
69,  
0,  
66,  
9,  
33,  
18,  
18,  
57,  
60,  
3]
```

```
In [55]: length1=len(random1)  
length1by3=len(random1by3)
```

```
dif1= length1 - length1by3
dif1
```

Out[55]: 60

```
In [70]: experiments = 3
dif_experiments = []
for i in range(0, experiments):
    randomexp= [random.randint(0, LIMIT) for x in range(0, LIMIT)]
    randomexpby3 = [a for a in randomexp if a % 3 == 0]

    lengthrandom = len(randomexp)
    lengthexpby3 = len(randomexpby3)
    difference = lengthrandom - lengthexpby3

    dif_experiments.append(difference)
dif_experiments
```

Out[70]: [63, 70, 72]

```
In [71]: average = sum (dif_experiments) / float(len(dif_experiments))
average
```

Out[71]: 68.33333333333333

In [73]: #Activity 2

```
In [75]: mutiline_text = """It is a truth universally acknowledged, that a single man in posses
However little known the feelings or views of such a man may be on his first entering
"My dear Mr. Bennet," said his lady to him one day, "have you heard that Netherfield F
Mr. Bennet replied that he had not.
"But it is," returned she; "for Mrs. Long has just been here, and she told me all abou
Mr. Bennet made no answer.
"Do you not want to know who has taken it?" cried his wife impatiently.
"You want to tell me, and I have no objection to hearing it."
This was invitation enough.
"Why, my dear, you must know, Mrs. Long says that Netherfield is taken by a young man
"What is his name?"
"Bingley."
"Is he married or single?"
"Oh! Single, my dear, to be sure! A single man of large fortune; four or five thousand
"How so? How can it affect them?"
"My dear Mr. Bennet," replied his wife, "how can you be so tiresome! You must know tha
```

"Is that his design in settling here?"

"Design! Nonsense, how can you talk so! But it is very likely that he may fall in love

"I see no occasion for that. You and the girls may go, or you may send them by themsel

"My dear, you flatter me. I certainly have had my share of beauty, but I do not preter

"In such cases, a woman has not often much beauty to think of."

"But, my dear, you must indeed go and see Mr. Bingley when he comes into the neighbour

"It is more than I engage for, I assure you."

"But consider your daughters. Only think what an establishment it would be for one of

"You are over-scrupulous, surely. I dare say Mr. Bingley will be very glad to see you;

"I desire you will do no such thing. Lizzy is not a bit better than the others; and I

"They have none of them much to recommend them," replied he; "they are all silly and i

"Mr. Bennet, how can you abuse your own children in such a way? You take delight in ve

"You mistake me, my dear. I have a high respect for your nerves. They are my old frier

"Ah, you do not know what I suffer."

"But I hope you will get over it, and live to see many young men of four thousand a ye

"It will be no use to us, if twenty such should come, since you will not visit them."

"Depend upon it, my dear, that when there are twenty, I will visit them all."

Mr. Bennet was so odd a mixture of quick parts, sarcastic humour, reserve, and caprice

```
In [99]: type(multiline_text)
```

```
Out[99]: str
```

```
In [100]: len(multiline_text)
```

```
Out[100]: 4475
```

```
In [101]: #replacing the newline value with a blank space  
multiline_text= multiline_text.replace('\n', "")  
multiline_text
```

```
Out[101]: 'It is a truth universally acknowledged, that a single man in possession of a good fortune, must be in want of a wife. However little known the feelings or views of such a man may be on his first entering a neighbourhood, this truth is so well fixed in the minds of the surrounding families, that he is considered the rightful property of some one or other of their daughters.'"My dear Mr. Bennet," said his lady to him one day, "have you heard that Netherfield Park is let at last?"Mr. Bennet replied that he had not."But it is," returned she; "for Mrs. Long has just been here, and she told me all about it."Mr. Bennet made no answer."Do you not want to know who has taken it?" cried his wife impatiently."You want to tell me, and I have no objection to hearing it."This was invitation enough."Why, my dear, you must know, Mrs. Long says that Netherfield is taken by a young man of large fortune from the north of England; that he came down on Monday in a chaise and four to see the place, and was so much delighted with it, that he agreed with Mr. Morris immediately; that he is to take possession before Michaelmas, and some of his servants are to be in the house by the end of next week.'"What is his name?" "Bingley." "Is he married or single?" "Oh! Single, my dear, to be sure! A single man of large fortune; four or five thousand a year. What a fine thing for our girls!" "How so? How can it affect them?" "My dear Mr. Bennet," replied his wife, "how can you be so tiresome! You must know that I am thinking of his marrying one of them." "Is that his design in settling here?" "Design! Nonsense, how can you talk so! But it is very likely that he may fall in love with one of them, and therefore you must visit him as soon as he comes." "I see no occasion for that. You and the girls may go, or you may send them by themselves, which perhaps will be still better, for as you are as handsome as any of them, Mr. Bingley may like you the best of the party." "My dear, you flatter me. I certainly have had my share of beauty, but I do not pretend to be anything extraordinary now. When a woman has five grown-up daughters, she ought to give over thinking of her own beauty." "In such cases, a woman has not often much beauty to think of." "But, my dear, you must indeed go and see Mr. Bingley when he comes into the neighbourhood." "It is more than I engage for, I assure you." "But consider your daughters. Only think what an establishment it would be for one of them. Sir William and Lady Lucas are determined to go, merely on that account, for in general, you know, they visit no newcomers. Indeed you must go, for it will be impossible for us to visit him if you do not." "You are over-scrupulous, surely. I dare say Mr. Bingley will be very glad to see you; and I will send a few lines by you to assure him of my hearty consent to his marrying whichever he chooses of the girls; though I must throw in a good word for my little Lizzy." "I desire you will do no such thing. Lizzy is not a bit better than the others; and I am sure she is not half so handsome as Jane, nor half so good-humoured as Lydia. But you are always giving her the preference." "They have none of them much to recommend them," replied he; "they are all silly and ignorant like other girls; but Lizzy has something more of quickness than her sisters." "Mr. Bennet, how can you abuse your own children in such a way? You take delight in vexing me. You have no compassion for my poor nerves." "You mistake me, my dear. I have a high respect for your nerves. They are my old friends. I have heard you mention them with consideration these last twenty years at least." "Ah, you do not know what I suffer." "But I hope you will get over it, and live to see many young men of four thousand a year come into the neighbourhood." "It will be no use to us, if twenty such should come, since you will not visit them." "Depend upon it, my dear, that when there are twenty, I will visit them all." Mr. Bennet was so odd a mixture of quick parts, sarcastic humour, reserve, and caprice, that the experience of three-and-twenty years had been insufficient to make his wife understand his character. Her mind was less difficult to develop. She was a woman of mean understanding, little information, and uncertain temper. When she was discontented, she fancied herself nervous. The business of her life was to get her daughters married; its solace was visiting and news. '
```

```
In [102]: cleaned_multiline_text = ""
for char in multiline_text:
    if char == " ":
        cleaned_multiline_text += char
    elif char.isalnum(): # using the isalnum() method of strings.
        cleaned_multiline_text += char
    else:
```



```
cleaned_multiline_text += " "  
cleaned_multiline_text
```

```
Out[102]: 'It is a truth universally acknowledged that a single man in possession of a good fortune must be in want of a wife. However little known the feelings or views of such a man may be on his first entering a neighbourhood, this truth is so well fixed in the minds of the surrounding families, that he is considered the rightful property of some one or other of their daughters. My dear Mr. Bennet, said his lady to him one day, have you heard that Netherfield Park is let at last? Mr. Bennet replied that he had not. But it is, returned she. For Mrs. Long has just been here, and she told me all about it. Mr. Bennet made no answer. Do you not want to know who has taken it? cried his wife impatiently. You want to tell me, and I have no objection to hearing it. This was invitation enough. Why, my dear, you must know, Mrs. Long says that Netherfield is taken by a young man of large fortune from the north of England; and that he came down on Monday in a chaise and four to see the place, and was so much delighted with it, that he agreed with Mr. Morris immediately, that he is to take possession before Michaelmas, and some of his servants are to be in the house by the end of next week. What is his name? Bingley. Is he married or single? Oh single, my dear, to be sure. A single man of large fortune, four or five thousand a year. What a fine thing for our girls! How so? How can it affect them? My dear Mr. Bennet, replied his wife, how can you be so tiresome! You must know that I am thinking of his marrying one of them. Is that his design in settling here? Design, nonsense! how can you talk so! But it is very likely that he may fall in love with one of them, and therefore you must visit him as soon as he comes. I see no occasion for that. You and the girls may go, or you may send them by themselves, which perhaps will be still better, for as you are as handsome as any of them, Mr. Bingley may like you the best of the party. My dear, you flatter me. I certainly have had my share of beauty, but I do not pretend to be anything extraordinary now. When a woman has five grown up daughters, she ought to give over thinking of her own beauty. In such cases, a woman has not often much beauty to think of. But, my dear, you must indeed go and see Mr. Bingley when he comes into the neighbourhood. It is more than I engage for, I assure you. But consider your daughters. Only think what an establishment it would be for one of them, Sir William and Lady Lucas are determined to go, merely on that account, for in general you know they visit no newcomers. Indeed you must go, for it will be impossible for us to visit him if you do not. You are over-scrupulous, surely. I dare say Mr. Bingley will be very glad to see you, and I will send a few lines by you to assure him of my hearty consent to his marrying whichever he chooses of the girls, though I must throw in a good word for my little Lizzy. I desire you will do no such thing, Lizzy is not a bit better than the others, and I am sure she is not half so handsome as Jane, nor half so good humoured as Lydia. But you are always giving her the preference. They have none of them much to recommend them, replied he, they are all silly and ignorant like other girls, but Lizzy has something more of quickness than her sisters. Mr. Bennet, how can you abuse your own children in such a way! You take delight in vexing me. You have no compassion for my poor nerves. You mistake me, my dear. I have a high respect for your nerves. They are my old friends. I have heard you mention them with consideration these last twenty years at least. Ah, you do not know what I suffer. But I hope you will get over it, and live to see many young men of four thousand a year come into the neighbourhood. It will be no use to us, if twenty such should come, since you will not visit them. Depend upon it, my dear, that when there are twenty, I will visit them all. Mr. Bennet was so odd a mixture of quick parts, sarcastic humour, reserve, and caprice, that the experience of three and twenty years had been insufficient to make his wife understand his character. Her mind was less difficult to develop. She was a woman of mean understanding, little information, and uncertain temper. When she was discontented, she fancied herself nervous. The business of her life was to get her daughters married; its solace was visiting and news.'
```

```
In [103]: listofPride2 = cleaned_multiline_text.split()  
listofPride2
```

```
Out[103]: ['It',
            'is',
            'a',
            'truth',
            'universally',
            'acknowledged',
            'that',
            'a',
            'single',
            'man',
            'in',
            'possession',
            'of',
            'a',
            'good',
            'fortune',
            'must',
            'be',
            'in',
            'want',
            'of',
            'a',
            'wife',
            'However',
            'little',
            'known',
            'the',
            'feelings',
            'or',
            'views',
            'of',
            'such',
            'a',
            'man',
            'may',
            'be',
            'on',
            'his',
            'first',
            'entering',
            'a',
            'neighbourhood',
            'this',
            'truth',
            'is',
            'so',
            'well',
            'fixed',
            'in',
            'the',
            'minds',
            'of',
            'the',
            'surrounding',
            'families',
            'that',
            'he',
            'is',
            'considered',
            'the',
```

'rightful',  
'property',  
'of',  
'some',  
'one',  
'or',  
'other',  
'of',  
'their',  
'daughters',  
'My',  
'dear',  
'Mr',  
'Bennet',  
'said',  
'his',  
'lady',  
'to',  
'him',  
'one',  
'day',  
'have',  
'you',  
'heard',  
'that',  
'Netherfield',  
'Park',  
'is',  
'let',  
'at',  
'last',  
'Mr',  
'Bennet',  
'replied',  
'that',  
'he',  
'had',  
'not',  
'But',  
'it',  
'is',  
'returned',  
'she',  
'for',  
'Mrs',  
'Long',  
'has',  
'just',  
'been',  
'here',  
'and',  
'she',  
'told',  
'me',  
'all',  
'about',  
'it',  
'Mr',  
'Bennet',  
'made',

'no',  
'answer',  
'Do',  
'you',  
'not',  
'want',  
'to',  
'know',  
'who',  
'has',  
'taken',  
'it',  
'cried',  
'his',  
'wife',  
'impatiently',  
'You',  
'want',  
'to',  
'tell',  
'me',  
'and',  
'I',  
'have',  
'no',  
'objection',  
'to',  
'hearing',  
'it',  
'This',  
'was',  
'invitation',  
'enough',  
'Why',  
'my',  
'dear',  
'you',  
'must',  
'know',  
'Mrs',  
'Long',  
'says',  
'that',  
'Netherfield',  
'is',  
'taken',  
'by',  
'a',  
'young',  
'man',  
'of',  
'large',  
'fortune',  
'from',  
'the',  
'north',  
'of',  
'England',  
'that',  
'he',

'came',  
'down',  
'on',  
'Monday',  
'in',  
'a',  
'chaise',  
'and',  
'four',  
'to',  
'see',  
'the',  
'place',  
'and',  
'was',  
'so',  
'much',  
'delighted',  
'with',  
'it',  
'that',  
'he',  
'agreed',  
'with',  
'Mr',  
'Morris',  
'immediately',  
'that',  
'he',  
'is',  
'to',  
'take',  
'possession',  
'before',  
'Michaelmas',  
'and',  
'some',  
'of',  
'his',  
'servants',  
'are',  
'to',  
'be',  
'in',  
'the',  
'house',  
'by',  
'the',  
'end',  
'of',  
'next',  
'week',  
'What',  
'is',  
'his',  
'name',  
'Bingley',  
'Is',  
'he',  
'married',

'or',  
'single',  
'Oh',  
'Single',  
'my',  
'dear',  
'to',  
'be',  
'sure',  
'A',  
'single',  
'man',  
'of',  
'large',  
'fortune',  
'four',  
'or',  
'five',  
'thousand',  
'a',  
'year',  
'What',  
'a',  
'fine',  
'thing',  
'for',  
'our',  
'girls',  
'How',  
'so',  
'How',  
'can',  
'it',  
'affect',  
'them',  
'My',  
'dear',  
'Mr',  
'Bennet',  
'replied',  
'his',  
'wife',  
'how',  
'can',  
'you',  
'be',  
'so',  
'tiresome',  
'You',  
'must',  
'know',  
'that',  
'I',  
'am',  
'thinking',  
'of',  
'his',  
'marrying',  
'one',  
'of',

'them',  
'Is',  
'that',  
'his',  
'design',  
'in',  
'settling',  
'here',  
'Design',  
'Nonsense',  
'how',  
'can',  
'you',  
'talk',  
'so',  
'But',  
'it',  
'is',  
'very',  
'likely',  
'that',  
'he',  
'may',  
'fall',  
'in',  
'love',  
'with',  
'one',  
'of',  
'them',  
'and',  
'therefore',  
'you',  
'must',  
'visit',  
'him',  
'as',  
'soon',  
'as',  
'he',  
'comes',  
'I',  
'see',  
'no',  
'occasion',  
'for',  
'that',  
'You',  
'and',  
'the',  
'girls',  
'may',  
'go',  
'or',  
'you',  
'may',  
'send',  
'them',  
'by',  
'themselves',

'which',  
'perhaps',  
'will',  
'be',  
'still',  
'better',  
'for',  
'as',  
'you',  
'are',  
'as',  
'handsome',  
'as',  
'any',  
'of',  
'them',  
'Mr',  
'Bingley',  
'may',  
'like',  
'you',  
'the',  
'best',  
'of',  
'the',  
'party',  
'My',  
'dear',  
'you',  
'flatter',  
'me',  
'I',  
'certainly',  
'have',  
'had',  
'my',  
'share',  
'of',  
'beauty',  
'but',  
'I',  
'do',  
'not',  
'pretend',  
'to',  
'be',  
'anything',  
'extraordinary',  
'now',  
'When',  
'a',  
'woman',  
'has',  
'five',  
'grown',  
'up',  
'daughters',  
'she',  
'ought',  
'to',



'give',  
'over',  
'thinking',  
'of',  
'her',  
'own',  
'beauty',  
'In',  
'such',  
'cases',  
'a',  
'woman',  
'has',  
'not',  
'often',  
'much',  
'beauty',  
'to',  
'think',  
'of',  
'But',  
'my',  
'dear',  
'you',  
'must',  
'indeed',  
'go',  
'and',  
'see',  
'Mr',  
'Bingley',  
'when',  
'he',  
'comes',  
'into',  
'the',  
'neighbourhood',  
'It',  
'is',  
'more',  
'than',  
'I',  
'engage',  
'for',  
'I',  
'assure',  
'you',  
'But',  
'consider',  
'your',  
'daughters',  
'Only',  
'think',  
'what',  
'an',  
'establishment',  
'it',  
'would',  
'be',  
'for',

'one',  
'of',  
'them',  
'Sir',  
'William',  
'and',  
'Lady',  
'Lucas',  
'are',  
'determined',  
'to',  
'go',  
'merely',  
'on',  
'that',  
'account',  
'for',  
'in',  
'general',  
'you',  
'know',  
'they',  
'visit',  
'no',  
'newcomers',  
'Indeed',  
'you',  
'must',  
'go',  
'for',  
'it',  
'will',  
'be',  
'impossible',  
'for',  
'us',  
'to',  
'visit',  
'him',  
'if',  
'you',  
'do',  
'not',  
'You',  
'are',  
'over',  
'scrupulous',  
'surely',  
'I',  
'dare',  
'say',  
'Mr',  
'Bingley',  
'will',  
'be',  
'very',  
'glad',  
'to',  
'see',  
'you',

'and',  
'I',  
'will',  
'send',  
'a',  
'few',  
'lines',  
'by',  
'you',  
'to',  
'assure',  
'him',  
'of',  
'my',  
'hearty',  
'consent',  
'to',  
'his',  
'marrying',  
'whichever',  
'he',  
'chooses',  
'of',  
'the',  
'girls',  
'though',  
'I',  
'must',  
'throw',  
'in',  
'a',  
'good',  
'word',  
'for',  
'my',  
'little',  
'Lizzy',  
'I',  
'desire',  
'you',  
'will',  
'do',  
'no',  
'such',  
'thing',  
'Lizzy',  
'is',  
'not',  
'a',  
'bit',  
'better',  
'than',  
'the',  
'others',  
'and',  
'I',  
'am',  
'sure',  
'she',  
'is',

'not',  
'half',  
'so',  
'handsome',  
'as',  
'Jane',  
'nor',  
'half',  
'so',  
'good',  
'humoured',  
'as',  
'Lydia',  
'But',  
'you',  
'are',  
'always',  
'giving',  
'her',  
'the',  
'preference',  
'They',  
'have',  
'none',  
'of',  
'them',  
'much',  
'to',  
'recommend',  
'them',  
'replied',  
'he',  
'they',  
'are',  
'all',  
'silly',  
'and',  
'ignorant',  
'like',  
'other',  
'girls',  
'but',  
'Lizzy',  
'has',  
'something',  
'more',  
'of',  
'quickness',  
'than',  
'her',  
'sisters',  
'Mr',  
'Bennet',  
'how',  
'can',  
'you',  
'abuse',  
'your',  
'own',  
'children',

'in',  
'such',  
'a',  
'way',  
'You',  
'take',  
'delight',  
'in',  
'vexing',  
'me',  
'You',  
'have',  
'no',  
'compassion',  
'for',  
'my',  
'poor',  
'nerves',  
'You',  
'mistake',  
'me',  
'my',  
'dear',  
'I',  
'have',  
'a',  
'high',  
'respect',  
'for',  
'your',  
'nerves',  
'They',  
'are',  
'my',  
'old',  
'friends',  
'I',  
'have',  
'heard',  
'you',  
'mention',  
'them',  
'with',  
'consideration',  
'these',  
'last',  
'twenty',  
'years',  
'at',  
'least',  
'Ah',  
'you',  
'do',  
'not',  
'know',  
'what',  
'I',  
'suffer',  
'But',  
'I',

'hope',  
'you',  
'will',  
'get',  
'over',  
'it',  
'and',  
'live',  
'to',  
'see',  
'many',  
'young',  
'men',  
'of',  
'four',  
'thousand',  
'a',  
'year',  
'come',  
'into',  
'the',  
'neighbourhood',  
'It',  
'will',  
'be',  
'no',  
'use',  
'to',  
'us',  
'if',  
'twenty',  
'such',  
'should',  
'come',  
'since',  
'you',  
'will',  
'not',  
'visit',  
'them',  
'Depend',  
'upon',  
'it',  
'my',  
'dear',  
'that',  
'when',  
'there',  
'are',  
'twenty',  
'I',  
'will',  
'visit',  
'them',  
'all',  
'Mr',  
'Bennet',  
'was',  
'so',  
'odd',

'a',  
'mixture',  
'of',  
'quick',  
'parts',  
'sarcastic',  
'humour',  
'reserve',  
'and',  
'caprice',  
'that',  
'the',  
'experience',  
'of',  
'three',  
'and',  
'twenty',  
'years',  
'had',  
'been',  
'insufficient',  
'to',  
'make',  
'his',  
'wife',  
'understand',  
'his',  
'character',  
'Her',  
'mind',  
'was',  
'less',  
'difficult',  
'to',  
'develop',  
'She',  
'was',  
'a',  
'woman',  
'of',  
'mean',  
'understanding',  
'little',  
'information',  
'and',  
'uncertain',  
'temper',  
'When',  
'she',  
'was',  
'discontented',  
'she',  
'fancied',  
'herself',  
'nervous',  
'The',  
'business',  
'of',  
'her',  
'life',

```
'was',  
'to',  
'get',  
'her',  
'daughters',  
'married',  
'its',  
'solace',  
'was',  
'visiting',  
'and',  
'news']
```

```
In [105... listofPrideset = list(set(listofPride2))  
len(listofPrideset)
```

Out[105]: 340

```
In [106... #trying dictionary function  
listofPridedict = dict.fromkeys(listofPride2)  
len(list(listofPridedict.keys()))
```

Out[106]: 340

```
In [94]: #the dictionary function makes more sense to me
```

```
In [107... for word in listofPride2:  
    if listofPridedict[word] is None:  
        listofPridedict[word] = 1  
    else:  
        listofPridedict[word] +=1  
listofPridedict
```



```
Out[107]: {'It': 3,
           'is': 12,
           'a': 20,
           'truth': 2,
           'universally': 1,
           'acknowledged': 1,
           'that': 15,
           'single': 3,
           'man': 4,
           'in': 11,
           'possession': 2,
           'of': 29,
           'good': 3,
           'fortune': 3,
           'must': 7,
           'be': 11,
           'want': 3,
           'wife': 4,
           'However': 1,
           'little': 3,
           'known': 1,
           'the': 17,
           'feelings': 1,
           'or': 5,
           'views': 1,
           'such': 5,
           'may': 5,
           'on': 3,
           'his': 11,
           'first': 1,
           'entering': 1,
           'neighbourhood': 3,
           'this': 1,
           'so': 8,
           'well': 1,
           'fixed': 1,
           'minds': 1,
           'surrounding': 1,
           'families': 1,
           'he': 11,
           'considered': 1,
           'rightful': 1,
           'property': 1,
           'some': 2,
           'one': 5,
           'other': 2,
           'their': 1,
           'daughters': 4,
           'My': 3,
           'dear': 8,
           'Mr': 10,
           'Bennet': 6,
           'said': 1,
           'lady': 1,
           'to': 22,
           'him': 4,
           'day': 1,
           'have': 7,
           'you': 24,
           'heard': 2,
```

'Netherfield': 2,  
'Park': 1,  
'let': 1,  
'at': 2,  
'last': 2,  
'replied': 3,  
'had': 3,  
'not': 9,  
'But': 6,  
'it': 11,  
'returned': 1,  
'she': 6,  
'for': 12,  
'Mrs': 2,  
'Long': 2,  
'has': 5,  
'just': 1,  
'been': 2,  
'here': 2,  
'and': 17,  
'told': 1,  
'me': 5,  
'all': 3,  
'about': 1,  
'made': 1,  
'no': 7,  
'answer': 1,  
'Do': 1,  
'know': 5,  
'who': 1,  
'taken': 2,  
'cried': 1,  
'impatiently': 1,  
'You': 7,  
'tell': 1,  
'I': 17,  
'objection': 1,  
'hearing': 1,  
'This': 1,  
'was': 8,  
'invitation': 1,  
'enough': 1,  
'Why': 1,  
'my': 10,  
'says': 1,  
'by': 4,  
'young': 2,  
'large': 2,  
'from': 1,  
'north': 1,  
'England': 1,  
'came': 1,  
'down': 1,  
'Monday': 1,  
'chaise': 1,  
'four': 3,  
'see': 5,  
'place': 1,  
'much': 3,  
'delighted': 1,

'with': 4,  
'agreed': 1,  
'Morris': 1,  
'immediately': 1,  
'take': 2,  
'before': 1,  
'Michaelmas': 1,  
'servants': 1,  
'are': 8,  
'house': 1,  
'end': 1,  
'next': 1,  
'week': 1,  
'What': 2,  
'name': 1,  
'Bingley': 4,  
'Is': 2,  
'married': 2,  
'Oh': 1,  
'Single': 1,  
'sure': 2,  
'A': 1,  
'five': 2,  
'thousand': 2,  
'year': 2,  
'fine': 1,  
'thing': 2,  
'our': 1,  
'girls': 4,  
'How': 2,  
'can': 4,  
'affect': 1,  
'them': 11,  
'how': 3,  
'tiresome': 1,  
'am': 2,  
'thinking': 2,  
'marrying': 2,  
'design': 1,  
'settling': 1,  
'Design': 1,  
'Nonsense': 1,  
'talk': 1,  
'very': 2,  
'likely': 1,  
'fall': 1,  
'love': 1,  
'therefore': 1,  
'visit': 5,  
'as': 7,  
'soon': 1,  
'comes': 2,  
'occasion': 1,  
'go': 4,  
'send': 2,  
'themselves': 1,  
'which': 1,  
'perhaps': 1,  
'will': 9,  
'still': 1,

'better': 2,  
'handsome': 2,  
'any': 1,  
'like': 2,  
'best': 1,  
'party': 1,  
'flatter': 1,  
'certainly': 1,  
'share': 1,  
'beauty': 3,  
'but': 2,  
'do': 4,  
'pretend': 1,  
'anything': 1,  
'extraordinary': 1,  
'now': 1,  
'When': 2,  
'woman': 3,  
'grown': 1,  
'up': 1,  
'ought': 1,  
'give': 1,  
'over': 3,  
'her': 5,  
'own': 2,  
'In': 1,  
'cases': 1,  
'often': 1,  
'think': 2,  
'indeed': 1,  
'when': 2,  
'into': 2,  
'more': 2,  
'than': 3,  
'engage': 1,  
'assure': 2,  
'consider': 1,  
'your': 3,  
'Only': 1,  
'what': 2,  
'an': 1,  
'establishment': 1,  
'would': 1,  
'Sir': 1,  
'William': 1,  
'Lady': 1,  
'Lucas': 1,  
'determined': 1,  
'merely': 1,  
'account': 1,  
'general': 1,  
'they': 2,  
'newcomers': 1,  
'Indeed': 1,  
'impossible': 1,  
'us': 2,  
'if': 2,  
'scrupulous': 1,  
'surely': 1,  
'dare': 1,

'say': 1,  
'glad': 1,  
'few': 1,  
'lines': 1,  
'hearty': 1,  
'consent': 1,  
'whichever': 1,  
'chooses': 1,  
'though': 1,  
'throw': 1,  
'word': 1,  
'Lizzy': 3,  
'desire': 1,  
'bit': 1,  
'others': 1,  
'half': 2,  
'Jane': 1,  
'nor': 1,  
'humoured': 1,  
'Lydia': 1,  
'always': 1,  
'giving': 1,  
'preference': 1,  
'They': 2,  
'none': 1,  
'recommend': 1,  
'silly': 1,  
'ignorant': 1,  
'something': 1,  
'quickness': 1,  
'sisters': 1,  
'abuse': 1,  
'children': 1,  
'way': 1,  
'delight': 1,  
'vexing': 1,  
'compassion': 1,  
'poor': 1,  
'nerves': 2,  
'mistake': 1,  
'high': 1,  
'respect': 1,  
'old': 1,  
'friends': 1,  
'mention': 1,  
'consideration': 1,  
'these': 1,  
'twenty': 4,  
'years': 2,  
'least': 1,  
'Ah': 1,  
'suffer': 1,  
'hope': 1,  
'get': 2,  
'live': 1,  
'many': 1,  
'men': 1,  
'come': 2,  
'use': 1,  
'should': 1,

```
'since': 1,  
'Depend': 1,  
'upon': 1,  
'there': 1,  
'odd': 1,  
'mixture': 1,  
'quick': 1,  
'parts': 1,  
'sarcastic': 1,  
'humour': 1,  
'reserve': 1,  
'caprice': 1,  
'experience': 1,  
'three': 1,  
'insufficient': 1,  
'make': 1,  
'understand': 1,  
'character': 1,  
'Her': 1,  
'mind': 1,  
'less': 1,  
'difficult': 1,  
'develop': 1,  
'She': 1,  
'mean': 1,  
'understanding': 1,  
'information': 1,  
'uncertain': 1,  
'temper': 1,  
'discontented': 1,  
'fancied': 1,  
'herself': 1,  
'nervous': 1,  
'The': 1,  
'business': 1,  
'life': 1,  
'its': 1,  
'solace': 1,  
'visiting': 1,  
'news': 1}
```

```
In [115... orderedlist = sorted(listofPridedict.items(), key=lambda key_value: key_value[1], reverse=True)
```

```
In [116... orderedlist[:25]
```

```
Out[116]: [('of', 29),
('you', 24),
('to', 22),
('a', 20),
('the', 17),
('and', 17),
('I', 17),
('that', 15),
('is', 12),
('for', 12),
('in', 11),
('be', 11),
('his', 11),
('he', 11),
('it', 11),
('them', 11),
('Mr', 10),
('my', 10),
('not', 9),
('will', 9),
('so', 8),
('dear', 8),
('was', 8),
('are', 8),
('must', 7)]
```

```
In [117... #Activity 3
#start with an import to get definitions
from itertools import permutations, dropwhile
```

```
In [118... permutations?
```

```
Init signature: permutations(iterable, r=None)
Docstring:
Return successive r-length permutations of elements in the iterable.

permutations(range(3), 2) --> (0,1), (0,2), (1,0), (1,2), (2,0), (2,1)
Type:          type
Subclasses:
```

```
In [119... dropwhile?
```

```
Init signature: dropwhile(predicate, iterable, /)
Docstring:
Drop items from the iterable while predicate(item) is true.

Afterwards, return every element until the iterable is exhausted.
Type:          type
Subclasses:
```

```
In [125... permutations(range(3))
```

```
Out[125]: <itertools.permutations at 0x1be2bf1c310>
```

```
In [122... for number_tuple in permutations(range(3)):
    print(number_tuple)
    assert isinstance(number_tuple, tuple)
```

```
(0, 1, 2)
(0, 2, 1)
(1, 0, 2)
(1, 2, 0)
(2, 0, 1)
(2, 1, 0)
```

```
In [127... #dropping the 0 from the start of the tuples
for number_tuple in permutations(range(3)):
    print(list(dropwhile(lambda x: x <= 0, number_tuple)))
```

```
[1, 2]
[2, 1]
[1, 0, 2]
[1, 2, 0]
[2, 0, 1]
[2, 1, 0]
```

```
In [129... import math
def convert_to_number(number_stack):
    final_number = 0
    for i in range(0, len(number_stack)):
        final_number += (number_stack.pop() * (math.pow(10, i)))
    return final_number
```

```
In [131... #generates the numbers from the concatenation of the tuples. See line 127 and its comp
for number_tuple in permutations(range(3)):
    number_stack = list(dropwhile(lambda x: x <= 0, number_tuple))
    print(convert_to_number(number_stack))
```

```
12.0
21.0
102.0
120.0
201.0
210.0
```

```
In [132... #Activity 4 making a CSV opener

from itertools import zip_longest
```

```
In [150... def return_dict_from_csv_line(header, line):
    # Zip them
    zipped_line = zip_longest(header, line, fillvalue=None)
    # Use dict comprehension to generate the final dict
    ret_dict = {kv[0]: kv[1] for kv in zipped_line}
    return ret_dict
```

```
In [204... import pandas as pd
url = 'https://raw.githubusercontent.com/TrainingByPackt/Data-Wrangling-with-Python/main/data.csv'
df = pd.read_csv(url)
df
```



Out[204]:

	Region	Country	Item Type	Sales Channel	Order Priority	Order Date	Order ID	Ship Date	Units Sold
0	Central America and the Caribbean	Antigua and Barbuda	Baby Food	Online	M	12/20/2013	957081544	1/11/2014	552
1	Central America and the Caribbean	Panama	Snacks	Offline	C	7/5/2010	301644504	7/26/2010	2167
2	Europe	Czech Republic	Beverages	Offline	C	9/12/2011	478051030	9/29/2011	4778
3	Asia	North Korea	Cereal	Offline	L	5/13/2010	892599952	6/15/2010	9016
4	Asia	Sri Lanka	Snacks	Offline	C	7/20/2015	571902596	7/27/2015	7542
...	...	...	...	...	...	...	...	...	...
4995	Australia and Oceania	New Zealand	Household	Offline	C	4/3/2015	217984473	4/20/2015	5305
4996	Middle East and North Africa	Azerbaijan	Clothes	Offline	L	8/17/2014	169748055	10/2/2014	1077
4997	Asia	Myanmar	Baby Food	Offline	H	11/23/2016	226939189	12/10/2016	5204
4998	Europe	Finland	Clothes	Online	L	4/22/2014	906794202	5/11/2014	9410
4999	Sub-Saharan Africa	Tanzania	Vegetables	Online	L	7/8/2011	996861922	8/7/2011	2450

5000 rows × 14 columns



In [205... *#stuck on getting the csv from url, but was able to download the file from github and*

```

with open("sales_record.csv", "r") as fd:
    first_line = fd.readline()
    header = first_line.replace("\n", "").split(",")
    for i, line in enumerate(fd):
        # Here we loop over the first 10 lines in order to not to make the output too
        line = line.replace("\n", "").split(",")
        d = return_dict_from_csv_line(header, line)
        print(d)
        if i > 10:
            break

```

```
{'Region': 'Central America and the Caribbean', 'Country': 'Antigua and Barbuda ', 'Item Type': 'Baby Food', 'Sales Channel': 'Online', 'Order Priority': 'M', 'Order Date': '12/20/2013', 'Order ID': '957081544', 'Ship Date': '1/11/2014', 'Units Sold': '552', 'Unit Price': '255.28', 'Unit Cost': '159.42', 'Total Revenue': '140914.56', 'Total Cost': '87999.84', 'Total Profit': '52914.72'}
{'Region': 'Central America and the Caribbean', 'Country': 'Panama', 'Item Type': 'Snacks', 'Sales Channel': 'Offline', 'Order Priority': 'C', 'Order Date': '7/5/2010', 'Order ID': '301644504', 'Ship Date': '7/26/2010', 'Units Sold': '2167', 'Unit Price': '152.58', 'Unit Cost': '97.44', 'Total Revenue': '330640.86', 'Total Cost': '211152.48', 'Total Profit': '119488.38'}
{'Region': 'Europe', 'Country': 'Czech Republic', 'Item Type': 'Beverages', 'Sales Channel': 'Offline', 'Order Priority': 'C', 'Order Date': '9/12/2011', 'Order ID': '478051030', 'Ship Date': '9/29/2011', 'Units Sold': '4778', 'Unit Price': '47.45', 'Unit Cost': '31.79', 'Total Revenue': '226716.10', 'Total Cost': '151892.62', 'Total Profit': '74823.48'}
{'Region': 'Asia', 'Country': 'North Korea', 'Item Type': 'Cereal', 'Sales Channel': 'Offline', 'Order Priority': 'L', 'Order Date': '5/13/2010', 'Order ID': '892599952', 'Ship Date': '6/15/2010', 'Units Sold': '9016', 'Unit Price': '205.70', 'Unit Cost': '117.11', 'Total Revenue': '1854591.20', 'Total Cost': '1055863.76', 'Total Profit': '798727.44'}
{'Region': 'Asia', 'Country': 'Sri Lanka', 'Item Type': 'Snacks', 'Sales Channel': 'Offline', 'Order Priority': 'C', 'Order Date': '7/20/2015', 'Order ID': '571902596', 'Ship Date': '7/27/2015', 'Units Sold': '7542', 'Unit Price': '152.58', 'Unit Cost': '97.44', 'Total Revenue': '1150758.36', 'Total Cost': '734892.48', 'Total Profit': '415865.88'}
{'Region': 'Middle East and North Africa', 'Country': 'Morocco', 'Item Type': 'Personal Care', 'Sales Channel': 'Offline', 'Order Priority': 'L', 'Order Date': '11/8/2010', 'Order ID': '412882792', 'Ship Date': '11/22/2010', 'Units Sold': '48', 'Unit Price': '81.73', 'Unit Cost': '56.67', 'Total Revenue': '3923.04', 'Total Cost': '2720.16', 'Total Profit': '1202.88'}
{'Region': 'Australia and Oceania', 'Country': 'Federated States of Micronesia', 'Item Type': 'Clothes', 'Sales Channel': 'Offline', 'Order Priority': 'H', 'Order Date': '3/28/2011', 'Order ID': '932776868', 'Ship Date': '5/10/2011', 'Units Sold': '8258', 'Unit Price': '109.28', 'Unit Cost': '35.84', 'Total Revenue': '902434.24', 'Total Cost': '295966.72', 'Total Profit': '606467.52'}
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