Mock-2 Solution

Problem-1

Question

Accept two positive integers `start` and `end` as input. Construct the following sets in Python:
(1) `A` is the set of of positive integers from `start` to `end` (endpoints inclusive) divisible by 3.
(2) `B` is the set of of positive integers from `start` to `end` (endpoints inclusive) divisible by 5.

Using Python's set notation, find the set of all integers that are:
(1) divisible by 3 or 5, and store it in the variable `o1`
(2) divisible by both 3 and 5, and store it in the variable `o2`
(3) divisible by 3 but not divisible by 5, and store it in the variable `o3`
(4) divisible by 5 but not divisible by 3, and store it in the variable `o4`

Note that each bullet corresponds to a separate set. You have to accept `start` and `end` as input and create these four sets. You do not have to print the output to the console.

Solution

```
1   start, end = int(input()), int(input())
2
3   A = set()
4   for i in range(start, end + 1):
5       if i % 3 == 0:
6           A.add(i)
7
8   B = set()
9   for i in range(start, end + 1):
10      if i % 5 == 0:
11          B.add(i)
12
13  o1 = A | B
14  o2 = A & B
15  o3 = A - B
16  o4 = B - A
```

Suffix

```
1   print(sorted(o1))
2   print(sorted(o2))
3   print(sorted(o3))
4   print(sorted(o4))
```

Testcases

	Input	Output
Public	1 10	[3, 5, 6, 9, 10] [] [3, 6, 9] [5, 10]
Public	3 25	[3, 5, 6, 9, 10, 12, 15, 18, 20, 21, 24, 25] [15] [3, 6, 9, 12, 18, 21, 24] [5, 10, 20, 25]
Private	1 50	[3, 5, 6, 9, 10, 12, 15, 18, 20, 21, 24, 25, 27, 30, 33, 35, 36, 39, 40, 42, 45, 48, 50] [15, 30, 45] [3, 6, 9, 12, 18, 21, 24, 27, 33, 36, 39, 42, 48] [5, 10, 20, 25, 35, 40, 50]
Private	100 120	[100, 102, 105, 108, 110, 111, 114, 115, 117, 120] [105, 120] [102, 108, 111, 114, 117] [100, 110, 115]
Private	1 100	[3, 5, 6, 9, 10, 12, 15, 18, 20, 21, 24, 25, 27, 30, 33, 35, 36, 39, 40, 42, 45, 48, 50, 51, 54, 55, 57, 60, 63, 65, 66, 69, 70, 72, 75, 78, 80, 81, 84, 85, 87, 90, 93, 95, 96, 99, 100] [15, 30, 45, 60, 75, 90] [3, 6, 9, 12, 18, 21, 24, 27, 33, 36, 39, 42, 48, 51, 54, 57, 63, 66, 69, 72, 78, 81, 84, 87, 93, 96, 99] [5, 10, 20, 25, 35, 40, 50, 55, 65, 70, 80, 85, 95, 100]
Private	3 30	[3, 5, 6, 9, 10, 12, 15, 18, 20, 21, 24, 25, 27, 30] [15, 30] [3, 6, 9, 12, 18, 21, 24, 27] [5, 10, 20, 25]
Private	10 11	[10] [] [] [10]

Problem-2

Question

Let `words` be a list of words. You are expected to create a dictionary `eng_dict` that contains information about the list of words that begin with a specific letter. Mimic the "English language dictionary" by sorting every list of words that begins with a given letter.

Convert all the words to lower case for evaluation. Think about the right choice of keys and their corresponding values.
Accepting input from the user and printing output to the console are not required.

Prefix

```
1  words = eval(input())
```

Solution

```
1  freq = dict()
2  for word in words:
3      if word.lower() not in freq:
4          freq[word.lower()] = 0
5      freq[word.lower()] += 1
```

Suffix visible

```
1  for i in sorted(freq):
2      print(f'{i}:{freq[i]}')
```

Test cases

	Input	Output
Public	['Everyday', 'is', 'a', 'good', 'day']	a:1 day:1 everyday:1 good:1 is:1

	Input	Output
Public	['It', 'was', 'Monday', 'morning', 'Swaminathan', 'was', 'reluctant', 'to', 'open', 'his', 'eyes', 'He', 'considered', 'Monday', 'specially', 'unpleasant', 'in', 'the', 'calendar', 'After', 'the', 'delicious', 'freedom', 'of', 'Saturday', 'And', 'Sunday', 'it', 'was', 'difficult', 'to', 'get', 'into', 'the', 'Monday', 'mood', 'of', 'work', 'and', 'discipline', 'He', 'shuddered', 'at', 'the', 'very', 'thought', 'of', 'school', 'the', 'dismal', 'yellow', 'building', 'the', 'fire-eyed', 'Vedanayagam', 'his', 'class', 'teacher', 'and', 'headmaster', 'with', 'his', 'thin', 'long', 'cane']	after:1 and:3 at:1 building:1 calendar:1 cane:1 class:1 considered:1 delicious:1 difficult:1 discipline:1 dismal:1 eyes:1 fire-eyed:1 freedom:1 get:1 he:2 headmaster:1 his:3 in:1 into:1 it:2 long:1 monday:3 mood:1 morning:1 of:3 open:1 reluctant:1 saturday:1 school:1 shuddered:1 specially:1 sunday:1 swaminathan:1 teacher:1 the:6 thin:1 thought:1 to:2 unpleasant:1 vedanayagam:1 very:1 was:3 with:1 work:1 yellow:1

	Input	Output
Private	['a', 'an', 'the']	a:1 an:1 the:1
Private	['I', 'do','not', 'like', 'using', 'because', 'because', 'because', 'is', 'normally', 'used', 'for', 'excuses']	because:3 do:1 excuses:1 for:1 i:1 is:1 like:1 normally:1 not:1 used:1 using:1
Private	['It', 'was', 'Monday', 'morning', 'Swaminathan', 'was', 'reluctant', 'to', 'open', 'his', 'eyes', 'He', 'considered', 'Monday', 'specially', 'unpleasant', 'in', 'the', 'calendar', 'After', 'the', 'delicious', 'freedom', 'of', 'Saturday']	after:1 calendar:1 considered:1 delicious:1 eyes:1 freedom:1 he:1 his:1 in:1 it:1 monday:2 morning:1 of:1 open:1 reluctant:1 saturday:1 specially:1 swaminathan:1 the:2 to:1 unpleasant:1 was:2

Problem-3

Question

There are `n` companies and `n` candidates. Each company has selected exactly one candidate to intern at its office during the summer of 2022. We call a selection **perfect** if no two companies have selected the same candidate. An example of a perfect selection for `n = 3` is given below:

```
selection = {
'company-1': 'candidate-3',
'company-2': 'candidate-1',
'company-3': 'candidate-2'
}
```

An imperfect matching would be:

```
selection = {
'company-1': 'candidate-2',
'company-2': 'candidate-1',
'company-3': 'candidate-2'
}
```

Write a function named `is_perfect` that accepts the dictionary `selection` as input. It should return `True` if the selection is perfect and `False` otherwise.

You do not have to accept input from the user or print the output to the console. You just have to write the function definition.

Solution

Basic solution

```
1   def is_perfect(selection):
2       n = len(selection)
3       the_set = set()
4       for candidate in selection.values():
5           the_set.add(candidate)
6       uniq = len(the_set)
7       return uniq == n
```

One-liner

```
1   def is_perfect(selection):
2       return len(set(selection.values())) == len(selection)
```

Suffix

```
1   print(is_perfect(eval(input().strip())))
```

Test cases

	Input	Output
Public	{ 'company-1': 'candidate-3', 'company-2': 'candidate-1', 'company-3': 'candidate-2' }	True
Public	{ 'company-1': 'candidate-2', 'company-2': 'candidate-1', 'company-3': 'candidate-2' }	False
Private	{ 'company-1': 'candidate-3', 'company-2': 'candidate-1', 'company-3': 'candidate-2' , 'company-4': 'candidate-4'}	True
Private	{ 'company-1': 'candidate-2', 'company-2': 'candidate-1', 'company-3': 'candidate-2' , 'company-4': 'candidate-4'}	False
Private	{ 'company-1': 'candidate-1', 'company-2': 'candidate-2'}	True
Private	{ 'company-1': 'candidate-2', 'company-2': 'candidate-2'}	False

Problem-4

Question

The file `file.txt` has one sentence on each line. Each sentence is made of certain number of words. There are no punctuation marks. All words are in lower case. With this information, create and populate the following variables:

```
(1) sentence_count -- int -- The number of sentences in the file.
(2) word_count -- int -- Number of words in each sentence.
(3) max_sentence -- str -- Sentence with the maximum number of words in it
(4) word_freq -- dict -- Frequency of occurrence of words in the file.
(5) unique -- list -- List of unique words used in the file.
```

You do not have to accept input from the user or print output to the console. However, you have to read the file `file.txt` to extract the required information.

Prefix

```python
1  f = open('file.txt', 'w')
2  while True:
3      line = input()
4      if line == '':
5          break
6      f.write(line+'\n')
7  f.close()
```

Solution

```python
1   f = open('file.txt', 'r')
2   sentences = [ ]
3   line = f.readline()
4   while line:
5       words = line.strip().split(' ')
6       sentences.append(words)
7       line = f.readline()
8   sentence_count = len(sentences)
9   word_count = 0
10  max_sentence_words = 0
11  for i in sentences:
12      if len(i) > max_sentence_words:
13          max_sentence = ' '.join(i)
14      for j in i:
15          word_count += 1
16  f.close()
17  word_freq = { }
18  for sentence in sentences:
19      for word in sentence:
20          if word not in word_freq:
21              word_freq[word] = 0
22          word_freq[word] += 1
23  unique = list(word_freq.keys())
```

Suffix

```
1   print(eval(input().strip()))
```

Testcases

	Input	Output
Public	doris enjoyed tapping her nails on the table to annoy everyone they called out her name time and again but were met with nothing but silence after exploring the abandoned building he started to believe in ghosts he found a leprechaun in his walnut shell sentence_count	4
Public	doris enjoyed tapping her nails on the table to annoy everyone they called out her name time and again but were met with nothing but silence after exploring the abandoned building he started to believe in ghosts he found a leprechaun in his walnut shell word_count	45
Public	doris enjoyed tapping her nails on the table to annoy everyone they called out her name time and again but were met with nothing but silence after exploring the abandoned building he started to believe in ghosts he found a leprechaun in his walnut shell max_sentence	they called out her name time and again but were met with nothing but silence

	Input	Output
Public	doris enjoyed tapping her nails on the table to annoy everyone they called out her name time and again but were met with nothing but silence after exploring the abandoned building he started to believe in ghosts he found a leprechaun in his walnut shell sorted(word_freq.items())	[('a', 1), ('abandoned', 1), ('after', 1), ('again', 1), ('and', 1), ('annoy', 1), ('believe', 1), ('building', 1), ('but', 2), ('called', 1), ('doris', 1), ('enjoyed', 1), ('everyone', 1), ('exploring', 1), ('found', 1), ('ghosts', 1), ('he', 2), ('her', 2), ('his', 1), ('in', 2), ('leprechaun', 1), ('met', 1), ('nails', 1), ('name', 1), ('nothing', 1), ('on', 1), ('out', 1), ('shell', 1), ('silence', 1), ('started', 1), ('table', 1), ('tapping', 1), ('the', 2), ('they', 1), ('time', 1), ('to', 2), ('walnut', 1), ('were', 1), ('with', 1)]
Public	doris enjoyed tapping her nails on the table to annoy everyone they called out her name time and again but were met with nothing but silence after exploring the abandoned building he started to believe in ghosts he found a leprechaun in his walnut shell sorted(unique)	['a', 'abandoned', 'after', 'again', 'and', 'annoy', 'believe', 'building', 'but', 'called', 'doris', 'enjoyed', 'everyone', 'exploring', 'found', 'ghosts', 'he', 'her', 'his', 'in', 'leprechaun', 'met', 'nails', 'name', 'nothing', 'on', 'out', 'shell', 'silence', 'started', 'table', 'tapping', 'the', 'they', 'time', 'to', 'walnut', 'were', 'with']
Private	he turned in the research paper on friday otherwise he would have not passed the class i would have gotten the promotion but my attendance was not good enough he uses onomatopoeia as a weapon of mental destruction she found it strange that people use their cellphones to talk to one another the snow covered path was no help in finding his way out of the back country	17

	Input	Output
	i never knew what hardship looked like until it started raining bowling balls the heat crowds and lines made disneyland the worst place on earth the fox in the tophat whispered into the ear of the rabbit the truth is that you pay for your lifestyle in hours jason did not understand why his parents would not let him sell his little sister at the garage sale dan ate the clouds like cotton candy she had that tint of craziness in her soul that made her believe she could actually make a difference the three year old girl ran down the beach as the kite flew behind her getting up at dawn is for the birds the overpass went under the highway combines are no longer just for farms the bees decided to have a mutiny against their queen sentence_count	
Private	he turned in the research paper on friday otherwise he would have not passed the class i would have gotten the promotion but my attendance was not good enough he uses onomatopoeia as a weapon of mental destruction she found it strange that people use their	207

	Input	Output
	cellphones to talk to one another the snow covered path was no help in finding his way out of the back country i never knew what hardship looked like until it started raining bowling balls the heat crowds and lines made disneyland the worst place on earth the fox in the tophat whispered into the ear of the rabbit the truth is that you pay for your lifestyle in hours jason did not understand why his parents would not let him sell his little sister at the garage sale dan ate the clouds like cotton candy she had that tint of craziness in her soul that made her believe she could actually make a difference the three year old girl ran down the beach as the kite flew behind her getting up at dawn is for the birds the overpass went under the highway combines are no longer just for farms the bees decided to have a mutiny against their queen word_count	
Private	he turned in the research paper on friday otherwise he would have not passed the class i would have gotten the promotion but my attendance was not good	jason did not understand why his parents would not let him sell his little sister at the garage sale

	Input	Output
	enough he uses onomatopoeia as a weapon of mental destruction she found it strange that people use their cellphones to talk to one another the snow covered path was no help in finding his way out of the back country i never knew what hardship looked like until it started raining bowling balls the heat crowds and lines made disneyland the worst place on earth the fox in the tophat whispered into the ear of the rabbit the truth is that you pay for your lifestyle in hours jason did not understand why his parents would not let him sell his little sister at the garage sale dan ate the clouds like cotton candy she had that tint of craziness in her soul that made her believe she could actually make difference the three year old girl ran down the beach as the kite flew behind her getting up at dawn is for the birds the overpass went under the highway combines are no longer just for farms the bees decided to have a mutiny against their queen max_sentence	
Private	he turned in the research	[('a', 3), ('actually', 1), ('against', 1), ('and', 1),

Input	Output
paper on friday otherwise he would have not passed the class i would have gotten the promotion but my attendance was not good enough he uses onomatopoeia as a weapon of mental destruction she found it strange that people use their cellphones to talk to one another the snow covered path was no help in finding his way out of the back country i never knew what hardship looked like until it started raining bowling balls the heat crowds and lines made disneyland the worst place on earth the fox in the tophat whispered into the ear of the rabbit the truth is that you pay for your lifestyle in hours jason did not understand why his parents would not let him sell his little sister at the garage sale dan ate the clouds like cotton candy she had that tint of craziness in her soul that made her believe she could actually make a difference the three year old girl ran down the beach as the kite flew behind her getting up at dawn is for the birds the overpass went under the highway combines are no longer just for farms	('another', 1), ('are', 1), ('as', 2), ('at', 2), ('ate', 1), ('attendance', 1), ('back', 1), ('balls', 1), ('beach', 1), ('bees', 1), ('behind', 1), ('believe', 1), ('birds', 1), ('bowling', 1), ('but', 1), ('candy', 1), ('cellphones', 1), ('class', 1), ('clouds', 1), ('combines', 1), ('cotton', 1), ('could', 1), ('country', 1), ('covered', 1), ('craziness', 1), ('crowds', 1), ('dan', 1), ('dawn', 1), ('decided', 1), ('destruction', 1), ('did', 1), ('difference', 1), ('disneyland', 1), ('down', 1), ('ear', 1), ('earth', 1), ('enough', 1), ('farms', 1), ('finding', 1), ('flew', 1), ('for', 3), ('found', 1), ('fox', 1), ('friday', 1), ('garage', 1), ('getting', 1), ('girl', 1), ('good', 1), ('gotten', 1), ('had', 1), ('hardship', 1), ('have', 3), ('he', 3), ('heat', 1), ('help', 1), ('her', 3), ('highway', 1), ('him', 1), ('his', 3), ('hours', 1), ('i', 2), ('in', 5), ('into', 1), ('is', 2), ('it', 2), ('jason', 1), ('just', 1), ('kite', 1), ('knew', 1), ('let', 1), ('lifestyle', 1), ('like', 2), ('lines', 1), ('little', 1), ('longer', 1), ('looked', 1), ('made', 2), ('make', 1), ('mental', 1), ('mutiny', 1), ('my', 1), ('never', 1), ('no', 2), ('not', 4), ('of', 4), ('old', 1), ('on', 2), ('one', 1), ('onomatopoeia', 1), ('otherwise', 1), ('out', 1), ('overpass', 1), ('paper', 1), ('parents', 1), ('passed', 1), ('path', 1), ('pay', 1), ('people', 1), ('place', 1), ('promotion', 1), ('queen', 1), ('rabbit', 1), ('raining', 1), ('ran', 1), ('research', 1), ('sale', 1), ('sell', 1), ('she', 3), ('sister', 1), ('snow', 1), ('soul', 1), ('started', 1), ('strange', 1), ('talk', 1), ('that', 4), ('the', 21), ('their', 2), ('three', 1), ('tint', 1), ('to', 3), ('tophat', 1), ('truth', 1), ('turned', 1), ('under', 1), ('understand', 1), ('until', 1), ('up', 1), ('use', 1), ('uses', 1), ('was', 2), ('way', 1), ('weapon', 1), ('went', 1), ('what', 1), ('whispered', 1), ('why', 1), ('worst', 1), ('would', 3), ('year', 1), ('you', 1), ('your', 1)]

	Input	Output
	the bees decided to have a mutiny against their queen sorted(word_freq.items())	
Private	he turned in the research paper on friday otherwise he would have not passed the class i would have gotten the promotion but my attendance was not good enough he uses onomatopoeia as a weapon of mental destruction she found it strange that people use their cellphones to talk to one another the snow covered path was no help in finding his way out of the back country i never knew what hardship looked like until it started raining bowling balls the heat crowds and lines made disneyland the worst place on earth the fox in the tophat whispered into the ear of the rabbit the truth is that you pay for your lifestyle in hours jason did not understand why his parents would not let him sell his little sister at the garage sale dan ate the clouds like cotton candy she had that tint of craziness in her soul that made her believe she could actually make a difference the three year old girl ran down the beach as the kite flew behind her	['a', 'actually', 'against', 'and', 'another', 'are', 'as', 'at', 'ate', 'attendance', 'back', 'balls', 'beach', 'bees', 'behind', 'believe', 'birds', 'bowling', 'but', 'candy', 'cellphones', 'class', 'clouds', 'combines', 'cotton', 'could', 'country', 'covered', 'craziness', 'crowds', 'dan', 'dawn', 'decided', 'destruction', 'did', 'difference', 'disneyland', 'down', 'ear', 'earth', 'enough', 'farms', 'finding', 'flew', 'for', 'found', 'fox', 'friday', 'garage', 'getting', 'girl', 'good', 'gotten', 'had', 'hardship', 'have', 'he', 'heat', 'help', 'her', 'highway', 'him', 'his', 'hours', 'i', 'in', 'into', 'is', 'it', 'jason', 'just', 'kite', 'knew', 'let', 'lifestyle', 'like', 'lines', 'little', 'longer', 'looked', 'made', 'make', 'mental', 'mutiny', 'my', 'never', 'no', 'not', 'of', 'old', 'on', 'one', 'onomatopoeia', 'otherwise', 'out', 'overpass', 'paper', 'parents', 'passed', 'path', 'pay', 'people', 'place', 'promotion', 'queen', 'rabbit', 'raining', 'ran', 'research', 'sale', 'sell', 'she', 'sister', 'snow', 'soul', 'started', 'strange', 'talk', 'that', 'the', 'their', 'three', 'tint', 'to', 'tophat', 'truth', 'turned', 'under', 'understand', 'until', 'up', 'use', 'uses', 'was', 'way', 'weapon', 'went', 'what', 'whispered', 'why', 'worst', 'would', 'year', 'you', 'your']

	Input	Output
	getting up at dawn is for the birds the overpass went under the highway combines are no longer just for farms the bees decided to have a mutiny against their queen sorted(unique)	
Private	there is a message for you if you look up she only paints with bold colors she does not like pastels she insisted that cleaning out your closet was the key to good driving jim liked driving around town with his hazard lights on the toddlers endless tantrum caused the entire plane anxiety kevin embraced his ability to be at the wrong place at the wrong time the teenage boy was accused of breaking his arm simply to get christal to sign his cast i am confused when people ask me what is up and i point they groan for oil spots on the floor nothing beats parking a motorbike in the lounge tomorrow will bring something new so leave today as a memory the campers waited anxiously as the care packages arrived at camp the three year old girl ran down the beach as the kite flew behind her at that moment he was not listening to music he	16

	Input	Output
	was living an experience he had decided to accept his fate of accepting his fate he dreamed leaving his law firm to open a portable dog wash i liked their first two albums but changed my mind after that charity gig sentence_count	
Private	there is a message for you if you look up she only paints with bold colors she does not like pastels she insisted that cleaning out your closet was the key to good driving jim liked driving around town with his hazard lights on the toddlers endless tantrum caused the entire plane anxiety kevin embraced his ability to be at the wrong place at the wrong time the teenage boy was accused of breaking his arm simply to get christal to sign his cast i am confused when people ask me what is up and i point they groan for oil spots on the floor nothing beats parking a motorbike in the lounge tomorrow will bring something new so leave today as a memory the campers waited anxiously as the care packages arrived at camp the three year old girl ran down the beach as the kite flew behind her	201

	Input	Output
	at that moment he was not listening to music he was living an experience he had decided to accept his fate of accepting his fate he dreamed leaving his law firm to open a portable dog wash i liked their first two albums but changed my mind after that charity gig word_count	
Private	there is a message for you if you look up she only paints with bold colors she does not like pastels she insisted that cleaning out your closet was the key to good driving jim liked driving around town with his hazard lights on the toddlers endless tantrum caused the entire plane anxiety kevin embraced his ability to be at the wrong place at the wrong time the teenage boy was accused of breaking his arm simply to get christal to sign his cast i am confused when people ask me what is up and i point they groan for oil spots on the floor nothing beats parking a motorbike in the lounge tomorrow will bring something new so leave today as a memory the campers waited anxiously as the care packages arrived at camp the three year old girl	the teenage boy was accused of breaking his arm simply to get christal to sign his cast

	Input	Output
	ran down the beach as the kite flew behind her at that moment he was not listening to music he was living an experience he had decided to accept his fate of accepting his fate he dreamed leaving his law firm to open a portable dog wash i liked their first two albums but changed my mind after that charity gig max_sentence	
Private	there is a message for you if you look up she only paints with bold colors she does not like pastels she insisted that cleaning out your closet was the key to good driving jim liked driving around town with his hazard lights on the toddlers endless tantrum caused the entire plane anxiety kevin embraced his ability to be at the wrong place at the wrong time the teenage boy was accused of breaking his arm simply to get christal to sign his cast i am confused when people ask me what is up and i point they groan for oil spots on the floor nothing beats parking a motorbike in the lounge tomorrow will bring something new so leave today as a memory the campers waited anxiously as the care packages arrived at	[('a', 4), ('ability', 1), ('accept', 1), ('accepting', 1), ('accused', 1), ('after', 1), ('albums', 1), ('am', 1), ('an', 1), ('and', 1), ('anxiety', 1), ('anxiously', 1), ('arm', 1), ('around', 1), ('arrived', 1), ('as', 3), ('ask', 1), ('at', 4), ('be', 1), ('beach', 1), ('beats', 1), ('behind', 1), ('bold', 1), ('boy', 1), ('breaking', 1), ('bring', 1), ('but', 1), ('camp', 1), ('campers', 1), ('care', 1), ('cast', 1), ('caused', 1), ('changed', 1), ('charity', 1), ('christal', 1), ('cleaning', 1), ('closet', 1), ('colors', 1), ('confused', 1), ('decided', 1), ('does', 1), ('dog', 1), ('down', 1), ('dreamed', 1), ('driving', 2), ('embraced', 1), ('endless', 1), ('entire', 1), ('experience', 1), ('fate', 2), ('firm', 1), ('first', 1), ('flew', 1), ('floor', 1), ('for', 2), ('get', 1), ('gig', 1), ('girl', 1), ('good', 1), ('groan', 1), ('had', 1), ('hazard', 1), ('he', 4), ('her', 1), ('his', 7), ('i', 3), ('if', 1), ('in', 1), ('insisted', 1), ('is', 2), ('jim', 1), ('kevin', 1), ('key', 1), ('kite', 1), ('law', 1), ('leave', 1), ('leaving', 1), ('lights', 1), ('like', 1), ('liked', 2), ('listening', 1), ('living', 1), ('look', 1), ('lounge', 1), ('me', 1), ('memory', 1), ('message', 1), ('mind', 1), ('moment', 1), ('motorbike', 1), ('music', 1), ('my', 1), ('new', 1), ('not', 2), ('nothing', 1), ('of', 2), ('oil', 1), ('old', 1), ('on', 2), ('only', 1), ('open', 1), ('out', 1), ('packages', 1), ('paints', 1), ('parking', 1), ('pastels', 1), ('people', 1), ('place', 1), ('plane', 1), ('point', 1), ('portable', 1), ('ran', 1), ('she', 3), ('sign', 1), ('simply', 1), ('so', 1), ('something', 1), ('spots', 1), ('tantrum', 1), ('teenage', 1), ('that', 3), ('the', 13), ('their', 1), ('there', 1), ('they', 1), ('three', 1), ('time', 1), ('to', 7), ('today', 1), ('toddlers', 1), ('tomorrow', 1), ('town', 1), ('two', 1), ('up', 2), ('waited', 1), ('was', 4), ('wash', 1), ('what', 1), ('when', 1), ('will', 1), ('with', 2), ('wrong', 2), ('year', 1), ('you', 2), ('your', 1)]

	Input	Output
	camp the three year old girl ran down the beach as the kite flew behind her at that moment he was not listening to music he was living an experience he had decided to accept his fate of accepting his fate he dreamed leaving his law firm to open a portable dog wash i liked their first two albums but changed my mind after that charity gig sorted(word_freq.items())	
Private	there is a message for you if you look up she only paints with bold colors she does not like pastels she insisted that cleaning out your closet was the key to good driving jim liked driving around town with his hazard lights on the toddlers endless tantrum caused the entire plane anxiety kevin embraced his ability to be at the wrong place at the wrong time the teenage boy was accused of breaking his arm simply to get christal to sign his cast i am confused when people ask me what is up and i point they groan for oil spots on the floor nothing beats parking a motorbike in the lounge tomorrow will bring something new so leave today as a memory the campers waited	['a', 'ability', 'accept', 'accepting', 'accused', 'after', 'albums', 'am', 'an', 'and', 'anxiety', 'anxiously', 'arm', 'around', 'arrived', 'as', 'ask', 'at', 'be', 'beach', 'beats', 'behind', 'bold', 'boy', 'breaking', 'bring', 'but', 'camp', 'campers', 'care', 'cast', 'caused', 'changed', 'charity', 'christal', 'cleaning', 'closet', 'colors', 'confused', 'decided', 'does', 'dog', 'down', 'dreamed', 'driving', 'embraced', 'endless', 'entire', 'experience', 'fate', 'firm', 'first', 'flew', 'floor', 'for', 'get', 'gig', 'girl', 'good', 'groan', 'had', 'hazard', 'he', 'her', 'his', 'i', 'if', 'in', 'insisted', 'is', 'jim', 'kevin', 'key', 'kite', 'law', 'leave', 'leaving', 'lights', 'like', 'liked', 'listening', 'living', 'look', 'lounge', 'me', 'memory', 'message', 'mind', 'moment', 'motorbike', 'music', 'my', 'new', 'not', 'nothing', 'of', 'oil', 'old', 'on', 'only', 'open', 'out', 'packages', 'paints', 'parking', 'pastels', 'people', 'place', 'plane', 'point', 'portable', 'ran', 'she', 'sign', 'simply', 'so', 'something', 'spots', 'tantrum', 'teenage', 'that', 'the', 'their', 'there', 'they', 'three', 'time', 'to', 'today', 'toddlers', 'tomorrow', 'town', 'two', 'up', 'waited', 'was', 'wash', 'what', 'when', 'will', 'with', 'wrong', 'year', 'you', 'your']

	Input	Output
	anxiously as the care packages arrived at camp the three year old girl ran down the beach as the kite flew behind her at that moment he was not listening to music he was living an experience he had decided to accept his fate of accepting his fate he dreamed leaving his law firm to open a portable dog wash i liked their first two albums but changed my mind after that charity gig sorted(unique)	

Problem-5

Question

Create a class named `Book`. It should have the following attributes and methods:

Attributes

(1) `name: str`

(2) `author: str`

(3) `pages: int`

(4) `genre: str 'Fiction'/'Nonfiction'`

Methods

(1) **`init`**`(self, name, author, pages, genre)`: initialize the attributes with the argument values

(2) `is_fiction(self)`: returns `True` if the book is belongs to the fiction category, and `False` otherwise

(3) `is_nonFiction(self)`: returns `True` if the book belongs to the non-fiction category and `False` otherwise

(4) `time_to_read(self)`:

   returns the string `5 days` if the number of pages is less than 100

   returns the string `20 days` if the number of pages lies between 100 and 500 (endpoints inclusive)

   returns the string `infinite` if the number of pages is greater than 500

(5) `same_author(self, book)`: returns `True` if `book` is written by the same author. `book` is an argument of type `Book`.

You do not have to accept the input from the user or print output to the console

Solution

```
 1   class Book:
 2     def __init__(self, name, author, pages, genre):
 3         self.name = name
 4         self.author = author
 5         self.pages = pages
 6         self.genre = genre
 7     def is_fiction(self):
 8         if self.genre == "Fiction":
 9             return True
10         else:
11             return False
12     def is_nonFiction(self):
13         if self.genre == "Nonfiction":
14             return True
15         else:
16             return False
17     def time_to_read(self):
18         if self.pages < 100:
19             return "5 days"
20         if 100 <= self.pages <= 500:
21             return "20 days"
22         if self.pages > 500:
23             return "infinite"
24     def same_author(self, book):
25         if self.author == book.author:
```

```
26          return True
27      else:
28          return False
```

Suffix

```
 1   # Please enter your answer above this code
 2  inp1 = input().strip().split(',')
 3  inp1[2] = int(inp1[2])
 4  inp2 = input().strip().split(',')
 5  inp2[2] = int(inp2[2])
 6
 7  book1 = Book(*inp1)
 8  book2 = Book(*inp2)
 9
10  print(book1.is_fiction(), book1.is_nonFiction(), book1.time_to_read())
11  print(book2.is_fiction(), book2.is_nonFiction(), book2.time_to_read())
12  print(book1.same_author(book2))
```

Testcases

	Input	Output
Public	Igniting Minds,Kalam,178,Nonfiction Wings of Fire,Kalam,180,Nonfiction	False True 20 days False True 20 days True
Private	Harry Potter-1,Rowling,309,Fiction Harry Potter-2,Rowling,341,Fiction	True False 20 days True False 20 days True
Private	Wings of Fire,Kalam,180,Nonfiction Harry Potter-2,Rowling,341,Fiction	False True 20 days True False 20 days False
Private	The Little Prince,Antoine de Saint,96,Fiction Harry Potter-5,Rowling,870,Fiction	True False 5 days True False infinite False