

# Data Types

1. Write a Python program to count the number of characters (character frequency) in a string. Sample String : google.com'

Expected Result : {'o': 3, 'g': 2, '.': 1, 'e': 1, 'l': 1, 'm': 1, 'c': 1}

```
1  '''
2  1. Write a Python program to count the number of characters
3  (character frequency) in a string. Sample String : google.com'
4  Expected Result : {'o': 3, 'g': 2, '.': 1, 'e': 1, 'l': 1, 'm': 1, 'c': 1}
5
6  '''
7  def frequency(s):
8      count = {}
9      for character in s:
10         count[character] = s.count(character)
11     return count
12 print(frequency('google.com'))
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL 1: Python +

Microsoft Windows [Version 6.3.9600]  
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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "e:/Insight Workshop/workshop/assignment/data types/one.py"  
{'g': 2, 'o': 3, 'l': 1, 'e': 1, '.': 1, 'c': 1, 'm': 1}

E:\Insight Workshop\week3 python assignment>

2. Write a Python program to get a string made of the first 2 and the last 2 chars from a given a string. If the string length is less than 2, return instead of the empty string.

Sample String : 'Python'

Expected Result : 'Pyon'

Sample String : 'Py'

Expected Result : 'PyPy'

Sample String : ' w'

Expected Result : Empty String

```
8 def first2_last_2(s):
9     if len(s) < 2:
10         return ''
11
12     return s[0:2] + s[-2:]
13
14 print(first2_last_2('Python'))
15 print(first2_last_2('Py'))
16 print(first2_last_2('w'))
17
18
```

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.  
gnment/data types/two.py"

Pyon

PyPy

E:\Insight Workshop\week3 python assignment>

3. Write a Python program to get a string from a given string where all occurrences of its first char have been changed to '\$', except the first char itself.

Sample String : 'restart'

Expected Result : 'resta\$t'

```
3  except the first char itself.
4  Sample String : 'restart'
5  Expected Result : 'resta$t'
6  '''
7  def occurrences(s):
8      char = s[0]
9      s = s.replace(char, '$')
10     s = char + s[1:]
11
12     return s
13
14     print(occurrences('restart'))
15
```

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E:\Insight Workshop\week3 python assignment>"D:/Program  
gnment/data types/three.py"  
resta\$t

E:\Insight Workshop\week3 python assignment>

4. Write a Python program to get a single string from two given strings,  
separated by a space and swap the first two characters of each string.

Sample String : 'abc', 'xyz'

Expected Result : 'xyc abz'

```

4 Sample String : 'abc', 'xyz'
5 Expected Result : 'xyc abz'
6 '''
7 a = 'abc'
8 b = 'xyz'
9 change_a = b[:2] + a[2:]
10 change_b = a[:2] + b[2:]
11 print(f'change of a & b is {change_a} {change_b}')
12
13 |

```

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "D:/Program Files (x86)/Python38-32/python/assignment/four.py"

change of a & b is xyc abz

- Write a Python program to add 'ing' at the end of a given string (length should be at least 3). If the given string already ends with 'ing' then add 'ly' instead. If the string length of the given string is less than 3, leave it unchanged.

Sample String : 'abc'

Expected Result : 'abcing'

Sample String : 'string'

Expected Result : 'stringly'

```

10 def add_string(s):
11     length = len(s)
12
13     if length > 2:
14         if s[-3:] == 'ing':
15             s += 'ly'
16         else:
17             s += 'ing'
18     return s
19 print(add_string('abc'))
20 print(add_string('string'))
21

```

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```

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E:\Insight Workshop\week3 python assignment>"D:/Program File
gment/five.py"
abcing
stringly

```

6. Write a Python program to find the first appearance of the substring 'not' and 'poor' from a given string, if 'not' follows the 'poor', replace the whole 'not'...'poor' substring with 'good'. Return the resulting string.

Sample String : 'The lyrics is not that poor!'

'The lyrics is poor!'

Expected Result : 'The lyrics is good!'

'The lyrics is poor!'

```

5 'The lyrics is poor!' Expected Result : 'The lyri
6 'The lyrics is poor!' '''
7 def not_poor(s):
8     snot = s.find('not')
9     spoor = s.find('poor')
10    if spoor > snot and snot>0 and spoor>0:
11        s = s.replace(s[snot:(spoor+4)], 'good')
12        return s
13    else:
14        return s
15    print(not_poor('The lyrics is not that poor!'))
16    print(not_poor('The lyrics is poor!'))
17

```

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/assignment/data types/six.py"

The lyrics is good!

The lyrics is poor!

7. Write a Python function that takes a list of words and returns the length of the longest one.



```

1  '''7. Write a Python function
2  that takes a list of words and returns the length of the longest one'''
3
4  def longestword(wordslist):
5      word_len = []
6      for n in wordslist:
7          word_len.append((len(n), n))
8      word_len.sort()
9      return word_len[-1][1]
10
11 print(longestword(["Pradip", "InsightWorkshop", "Hello world", "Python"]))
12

```

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1: Python

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "e:/Insight Workshop/week3 python assignment/data types/seven.py"  
InsightWorkshop

E:\Insight Workshop\week3 python assignment>

8. Write a Python program to remove the  $n^{\text{th}}$  index character from a nonempty string.

```

3
4 def remove(str, n):
5     first_part = str[:n]
6     last_part = str[n+1:]
7     return first_part + last_part
8 print(remove('Pradip', 0))
9 print(remove('Pradip', 3))
10 print(remove('Pradip', 5))
11

```

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```

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (>
gment/data types/eight.py"
radip
Praip
Pradi

E:\Insight Workshop\week3 python assignment>

```

9. Write a Python program to change a given string to a new string where the first and last chars have been exchanged.



```

3
4 def exchange(s):
5     return s[-1:] + s[1:-1] + s[:1]
6 print(exchange('nama'))
7

```

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x  
 gnment/data types/nine.py"  
 aamn

E:\Insight Workshop\week3 python assignment>

- 10.** Write a Python program to remove the characters which have odd index values of a given string.

```
1  '''10. Write a Python program to remove the
2  characters which have odd index values of a g
3  def odd(s):
4      display = ""
5      for i in range(len(s)):
6          if i % 2 == 0:
7              display = display + s[i]
8      return display
9
10 print(odd('123456'))
11
```

---

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python  
gnment/data types/ten.py"

135

11. Write a Python program to count the occurrences of each word in a given sentence.

```
1 11. write a Python program to count
2 the occurrences of each word in a given sentence'''
3 def word_occurance(s):
4     counts = dict()
5     words = s.split()
6     for word in words:
7         if word in counts:
8             counts[word] += 1
9         else:
10            counts[word] = 1
11    return counts
12 print(word_occurance('count the word occurrences of each word in sentence.'))
13
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL 1: Python + □

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "e:/Insight Workshop/week3  
gnment/data types/eleven.py"  
{'count': 1, 'the': 1, 'word': 2, 'occurrences': 1, 'of': 1, 'each': 1, 'in': 1, 'sentence.': 1}

E:\Insight Workshop\week3 python assignment>

**12.** Write a Python script that takes input from the user and displays that input back in upper and lower cases.

```
1  '''12. Write a Python script that takes input from the u
2  and displays that input back in upper and lower cases. '''
3
4  name = input("Enter your name? ")
5  uppercase = name.upper()
6  lowercase = name.lower()
7  print(f"Hello {uppercase}, How are you?")
8  print(f"Hello {lowercase}, How are you?")
9
10
```

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1:

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe'gnment/data types/twelve.py"

Enter your name? Pradip Thapa

Hello PRADIP THAPA, How are you?

Hello pradip thapa, How are you?

**13.** Write a Python program that accepts a comma separated sequence of words as input and prints the unique words in sorted form (alphanumerically).

Sample Words : red, white, black, red, green, black

Expected Result : black, green, red, white,red

```
1 '''13. Write a Python program that accepts a comma separated
2 sequence of words as input and prints the unique words in sorted
3 form (alphanumerically).
4 Sample Words : red, white, black, red, green, black
5 Expected Result : black, green, red, white,red
6 '''
7 colors = input("Enter your favourite color:")
8 words = [word for word in colors.split(",")]
9 print(",".join(sorted(list(set(words)))))
10
```

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1: Python

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "e:/Insight Workshop/data types/thirteen.py"

Enter your favourite color:red, white, black, red, green, black  
black, green, red, white,red

**14.** Write a Python function to create the HTML string with tags around the word(s).

Sample function and result :

add\_tags('i', 'Python') -> '<i>Python</i>'

`add_tags('b', 'Python Tutorial') -> '<b>Python Tutorial </b>'`

```
1  '''14. Write a Python function to create the HTML string
2  the word(s). Sample function and result :
3  add_tags('i', 'Python') -> '<i>Python</i>'
4  add_tags('b', 'Python Tutorial') -> '<b>Python Tutorial <
5  '''
6  def add_tags(tag, word):
7      return "<%s>%s</%s>" % (tag, word, tag)
8  print(add_tags('i', 'Python'))
9  print(add_tags('b', 'Python Tutorial'))
10
```

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1

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```
E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe
gnment/data types/fourteen.py"
<i>Python</i>
<b>Python Tutorial</b>
```

**15.** Write a Python function to insert a string in the middle of a string.

Sample function and result : `insert_sting_middle('[[[]]<<>>', 'Python') ->`

`[[Python]]`



insert\_sting\_middle('{{}}', 'PHP') -> {{PHP}}

```
1  """15. Write a Python function to insert a string in
2  |      Sample function and result :
3  insert_sting_middle('[[[]]<<>>', 'Python') -> [[Python]
4  insert_sting_middle('{{}}', 'PHP') -> {{PHP}}
5  """
6
7  def insert(s, word):
8  |      return s[:2] + word + s[2:]
9  print(insert('[[[]]', 'Python'))
10 print(insert('{{}}', 'PHP'))
11 print(insert('<<>>', 'HTML'))
12
```

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python  
gnment/data types/fifteen.py"

[[Python]]

{{PHP}}

<<HTML>>

16. Write a Python program to sum all the items in a list.

```
1  '''16. Write a Python program to sum all the items in a
2
3  def sum(lists):
4      numbers = 0
5      for x in lists:
6          numbers += x
7      return numbers
8  print(sum([1,2,3,4]))
9
10
11
```

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe  
gnment/data types/sixteen.py"  
10

17. Write a Python program to multiplies all the items in a list.

```
1  '''17. Write a Python program to multiplies all the it
2
3  def multiply(items):
4      num = 1
5      for x in items:
6          num *= x
7      return num
8  print(multiply([1,2,3,4,5]))
9
```

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.
gnment/data types/seventeen.py"

120

18. Write a Python program to get the largest number from a list.

```

1  '''18. Write a Python program to get the largest number from
2
3  list = [1,2,3,4,-5,-6,-8,20]
4  print('The largest number from above list is:', max(list))
5  |

```

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1: Pyt

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "E:\Insight Workshop\data types/assignment/week3 python assignment/data types/assignment/eighteen.py"

The largest number from above list is: 20

E:\Insight Workshop\week3 python assignment>

**19.** Write a Python program to get the smallest number from a list.

```

1  '''19. Write a Python program to get the smallest number from a list.
2
3  list = [0,1,2,100,80,-1]
4  print(f'smallest number is:{min(list)}')
5  |

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "E:\Insight Workshop\data types/assignment/week3 python assignment/data types/assignment/nineteen.py"

smallest number is:-1

E:\Insight Workshop\week3 python assignment>

**20.** Write a Python program to count the number of strings where the string length is 2 or more and the first and last character are same from a given list of strings.

Sample List : ['abc', 'xyz', 'aba', '1221']

Expected Result : 2

```
4 Sample List : ['abc', 'xyz', 'aba', '1221']
5 Expected Result : 2
6 '''
7
8 def match(words):
9     num = 0
10    for word in words:
11        if len(word) > 1 and word[0] == word[-1]:
12            num += 1
13    return num
14 print(match(['abc', 'xyz', 'aba', '1221']))
15
```

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-gnment/data types/twenty.py"

2

**21.** Write a Python program to get a list, sorted in increasing order by the last element in each tuple from a given list of non-empty tuples.

Sample List : [(2, 5), (1, 2), (4, 4), (2, 3), (2, 1)]

Expected Result : [(2, 1), (1, 2), (2, 3), (4, 4), (2, 5)]

```
1 '''21. Write a Python program to get a list, sorted in incre
2 the last element in each tuple from a given list of non-e
3 Sample List : [(2, 5), (1, 2), (4, 4), (2, 3), (2, 1)]
4 Expected Result : [(2, 1), (1, 2), (2, 3), (4, 4), (2, 5)]
5 '''
6 def last(num):
7     return num[-1]
8
9 def sort_num(tuples):
10    return sorted(tuples, key=last)
11
12 print(sort_num([(2, 5), (1, 2), (4, 4), (2, 3), (2, 1)]))
13
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: Pythc

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/  
python.exe" "e:/Insight Workshop/week3 python assignment/data types/twentyone.py"

[(2, 1), (1, 2), (2, 3), (4, 4), (2, 5)]

**22.** Write a Python program to remove duplicates from a list.



```

1  '''22. Write a Python program to remove duplicates from a list.
2  a = [1,2,3,4,5,6,7,2,4,5,8,9,0,2,3,5,6,7,8]
3  duplicates = set()
4  original = []
5  for x in a:
6      if x not in duplicates:
7          original.append(x)
8          duplicates.add(x)
9  print(duplicates)
10

```

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1: Python

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "e:/Insight Workshop\data types/twentytwo.py"  
{0, 1, 2, 3, 4, 5, 6, 7, 8, 9}

**23.** Write a Python program to check a list is empty or not.

data types > twentythree.py > ...

```
1 '''23. Write a Python program to check a list is empty or not.'''
2 list = []
3 if not list:
4     print("List is empty")
5
6
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: Python

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "e:/Insight Wc  
gnment/data types/twentythree.py"

List is empty

**24.** Write a Python program to clone or copy a list.

```
1 '''24. Write a Python program to clone or
2 l = [1, 2, 3, 4, 4]
3 copy_list = list(l)
4 print(l)
5 print(copy_list)
6
7
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Py  
gnment/data types/twentyfour.py"

[1, 2, 3, 4, 4]

[1, 2, 3, 4, 4]

**25.** Write a Python program to check whether all dictionaries in a list are empty

or not.

Sample list : [{},{},{}]

Return value : True

Sample list : [{1,2},{},{}]

Return value : False

```
1  '''25. Write a Python program to check
2  are empty or not.
3  Sample list : [{},{},{}]
4  Return value : True
5  Sample list : [{1,2},{},{}]
6  Return value : False
7  '''
8  list = [{},{},{}]
9  list1 = [{1,2},{},{}]
10 print(all(not d for d in list))
11 print(all(not d for d in list1))
12
```

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (>  
gnment/data types/tweentyfive.py"

True

False

**26.** Write a Python program to insert a given string at the beginning of all items in a list.

Sample list : [1,2,3,4], string : emp

Expected output : ['emp1', 'emp2', 'emp3', 'emp4']

```
1 '''26. Write a Python program to insert a given st
2 all items in
3 a list.
4 Sample list : [1,2,3,4], string : emp
5 Expected output : ['emp1', 'emp2', 'emp3', 'emp4']
6 '''
7 num = [1,2,3,4]
8 print(['emp{}'.format(i) for i in num])
9
```

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "e:/Insight Workshop/week3 python assignment/data types/twentysix.py"

['emp1', 'emp2', 'emp3', 'emp4']

**27.** Write a Python program to replace the last element in a list with another list.

Sample data : [1, 3, 5, 7, 9, 10], [2, 4, 6, 8]

Expected Output: [1, 3, 5, 7, 9, 2, 4, 6, 8]

```
1 '''27. Write a Python program to replace the last e:
2 another list.
3 Sample data : [1, 3, 5, 7, 9, 10], [2, 4, 6, 8]
4 Expected Output: [1, 3, 5, 7, 9, 2, 4, 6, 8]
5 '''
6 list1 = [1, 3, 5, 7, 9, 10]
7 list2 = [2, 4, 6, 8]
8 list1[-1:] = list2
9 print(list1)
10
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "E:\Insight Workshop\data types/twentyseven.py"

[1, 3, 5, 7, 9, 2, 4, 6, 8]

E:\Insight Workshop\week3 python assignment>

**28.** Write a Python script to add a key to a dictionary.

Sample Dictionary : {0: 10, 1: 20}

Expected Result : {0: 10, 1: 20, 2: 30}

```
1 '''28. Write a Python script to add a key to
2 Sample Dictionary : {0: 10, 1: 20}
3 Expected Result : {0: 10, 1: 20, 2: 30}
4 '''
5 dict = {0:10, 1:20}
6 print(dict)
7 dict.update({2:30})
8 print(dict)
9 |
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python  
gnment/data types/tweentyeight.py"

{0: 10, 1: 20}

{0: 10, 1: 20, 2: 30}

**29.** Write a Python script to concatenate following dictionaries to create a new one.

Sample Dictionary : dic1={1:10,

2:20}

dic2={3:30, 4:40}

dic3={5:50,6:60}



Expected Result : {1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}

```
3 Sample Dictionary : dic1={1:10, 2:20}
4 dic2={3:30, 4:40}
5 dic3={5:50,6:60}
6 Expected Result : {1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}
7 '''
8 dict1={1:10, 2:20}
9 dict2={3:30, 4:40}
10 dict3={5:50,6:60}
11 dict4 = {}
12 for d in (dict1, dict2, dict3):
13     dict4.update(d)
14 print(dict4)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: Python

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "e:/1  
gnment/data types/tweentynine.py"

{1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}

**30.** Write a Python script to check whether a given key already exists in a dictionary.

```

1  '''30. Write a Python script to check whether a given key
2  already exists in a dictionary. '''
3  d = {1: 0, 2: 20, 3: 90, 4: 4, 5: 50, 11: 66}
4  def is_key(x):
5      if x in d:
6          print('Key is already exists in a dictionary ')
7      else:
8          print('Key is not exists in a dictionary')
9  is_key(11)
10 is_key(0)
11

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: Pythc

Microsoft Windows [Version 6.3.9600]

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "e:  
gnment/data types/thirty.py"

Key is already exists in a dictionary

Key is not exists in a dictionary

**31.** Write a Python program to iterate over dictionaries using for loops.

```
1  '''Write a Python program to iterate over dictionaries
2
3  bio = {'name': 'pradip thapa', 'address': 'Kathmandu'}
4  for bio_key, value in bio.items():
5      print(bio_key, 'is equals to ', bio[bio_key])
6  |
```

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Microsoft Windows [Version 6.3.9600]

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.  
gnment/data types/thirtyone.py"

name is equals to  pradip thapa

address is equals to  Kathmandu

**32.** Write a Python script to generate and print a dictionary that contains a  
number (between 1 and n) in the form (x, x\*x).

Sample Dictionary ( n = 5 ) :

Expected Output : {1: 1, 2: 4, 3: 9, 4: 16, 5: 25}

```

3 Sample Dictionary ( n = 5 ) :
4 Expected Output : {1: 1, 2: 4, 3: 9, 4: 16, 5: 25}
5 '''
6
7 n=int(input("Input a number "))
8 d = dict()
9
10 for x in range(1,n+1):
11     d[x]=x*x
12
13 print(d)
14

```

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/p  
gnment/data types/thirtytwo.py"

Input a number 5

{1: 1, 2: 4, 3: 9, 4: 16, 5: 25}

**33.** Write a Python script to print a dictionary where the keys are numbers

between 1 and 15 (both included) and the values are square of keys Sample

Dictionary

{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100, 11: 121, 12: 144,  
13: 169, 14: 196, 15: 225}

```

1  '''33. Write a Python script to print a dictionary where the keys are
2  numbers between 1 and 15 (both included) and the values are square of keys
3  {1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100,
4  11: 121, 12: 144,
5  13: 169, 14: 196, 15: 225}
6  '''
7  d=dict()
8  for x in range(1,16):
9      d[x]=x**2
10 print(d)
11

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: Python +

Microsoft Windows [Version 6.3.9600]  
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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "e:/Insight Workshop/week3 python assignment/data types/thirtythree.py"  
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100, 11: 121, 12: 144, 13: 169, 14: 196, 15: 225}

E:\Insight Workshop\week3 python assignment>

**34. Write a Python script to merge two Python dictionaries.**

```
1 '''Write a Python script to merge two Python dictionaries. '''
2 dict1 = {'First Name': 'Pradip'}
3 dict2 = {'Last Name': 'Thapa'}
4 merge = dict1.copy()
5 merge.update(dict2)
6 print(merge)
7
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL 1: Python

Microsoft Windows [Version 6.3.9600]  
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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "e:\gnment\data types/thirtyfour.py"  
{'First Name': 'Pradip', 'Last Name': 'Thapa'}

E:\Insight Workshop\week3 python assignment>

**35.** Write a Python program to iterate over dictionaries using for loops.



```
1  '''Write a Python program to iterate over dictionaries
2
3  bio = {'name': 'pradip thapa', 'address': 'Kathmandu'}
4  for bio_key, value in bio.items():
5      print(bio_key, 'is equals to ', bio[bio_key])
6  |
```

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Microsoft Windows [Version 6.3.9600]

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.  
gnment/data types/thirtyone.py"

name is equals to   pradip thapa

address is equals to   Kathmandu

**36.** Write a Python program to sum all the items in a dictionary.

```
1 '''Write a Python program to sum all the items in a dictionary.
2 my_dict = {'num1':100,'num2':-50,'num3':100,'num4':50}
3 print(sum(my_dict.values()))
4
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: Python

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "e:/Ins  
gnment/data types/thirtysix.py"  
200

**37.** Write a Python program to multiply all the items in a dictionary.

```
1  '''Write a Python program to multiply all the i
2  dict = {'num1':100,'num2':4,}
3  result=1
4  for key in dict:
5      result=result * dict[key]
6
7  print(result)
8
```

---

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

Microsoft Windows [Version 6.3.9600]

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38  
gnment/data types/thirtyseven.py"  
400

E:\Insight Workshop\week3 python assignment>□

**38.** Write a Python program to remove a key from a dictionary.

```
1  '''Write a Python program to remove a key from a dict.
2  Dict = {'a':12,'b':92}
3  print(Dict)
4  if 'b' in Dict:
5      del Dict['b']
6  print(Dict)
7
```

---

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

Microsoft Windows [Version 6.3.9600]

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "D:/Program Files (x86)/Python38-32/python/Insight Workshop/week3 python assignment/data types/thirtyeight.py"

{'a': 12, 'b': 92}

{'a': 12}

**39.** Write a Python program to unpack a tuple in several variables.

```
1  '''Write a Python program to unpack a tuple in sev
2
3  bio = ("Pradip Thapa", 21, "HND in Computing")
4
5  (name, age, subject) = bio
6  print(name)
7  print(age)
8  print(subject) |
9
10
```

---

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Microsoft Windows [Version 6.3.9600]

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/  
gnment/data types/thirtynine.py"

Pradip Thapa

21

HND in Computing

**40.** Write a Python program to add an item in a tuple.

data types >  forty.py > ...

```
1
2 tuplex = (4, 6, 2, 8, 3, 1)
3 print(tuplex)
4 tuplex = tuplex + (9,)
5 print(tuplex)
6 tuplex = tuplex[:5] + (15, 20, 25) + tuplex[:5]
7 print(tuplex)
8 listx = list(tuplex) |
9 listx.append(30)
10 tuplex = tuple(listx)
11 print(tuplex)
12
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

Microsoft Windows [Version 6.3.9600]

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-gnment/data types/fourty.py"

(4, 6, 2, 8, 3, 1)

(4, 6, 2, 8, 3, 1, 9)

(4, 6, 2, 8, 3, 15, 20, 25, 4, 6, 2, 8, 3)

(4, 6, 2, 8, 3, 15, 20, 25, 4, 6, 2, 8, 3, 30)

**41.** Write a Python program to convert a tuple to a string.



```
1  '''Write a Python program to convert a
2
3  def convertTuple(t):
4      str = ''.join(t)
5      return str
6  tuple = ('r', 'a', 'm')
7  str = convertTuple(tuple)
8  print(str) |
9
```

---

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Microsoft Windows [Version 6.3.9600]

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (
gnment/data types/fourtyone.py"
ram

**42.** Write a Python program to convert a list to a tuple.

```
1  '''Write a Python program to c
2
3  def convert(list):
4      return tuple(list)
5
6  list = [1, 2, 3, 4]
7  print(convert(list)) |
8
```

---

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```
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(c) 2013 Microsoft Corporation. All rights reserved.

E:\Insight Workshop\week3 python assignment>"D:/Prog
nment/data types/fourtytwo.py"
(1, 2, 3, 4)
```

**43.** Write a Python program to remove an item from a tuple.

```
1  '''Write a Python program to remove an item from
2
3  tuplex = 'r','a','m'
4  print(tuplex)
5  tuplex = tuplex[:2] + tuplex[3:]
6  print(tuplex)
7  listx = list(tuplex)
8  listx.remove("a")
9  tuplex = tuple(listx)
10 print(tuplex)
11
```

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Microsoft Windows [Version 6.3.9600]

(c) 2013 Microsoft Corporation. All rights reserved.

E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-3  
gnment/data types/fourtythree.py"

('r', 'a', 'm')

('r', 'a')

('r',)

**44.** Write a Python program to slice a tuple.

```
1  '''Write a Python program to slice a tuple'''
2
3  my_tuple = ('p','r','a','d','i','p')
4  print(my_tuple[1:4])
5
6  print(my_tuple[:-2])
7  print(my_tuple[:])
```

---

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python  
gnment/data types/fourtyfour.py"

('r', 'a', 'd')

('p', 'r', 'a', 'd')

('p', 'r', 'a', 'd', 'i', 'p')

**45.** Write a Python program to find the index of an item of a tuple.

```
1 '''Write a Python program to find th
2
3 name = ('p', 'r', 'a', 'd', 'i', 'p')
4 index = name.index('i')
5 print('The index of i is:', index)
6 index = name.index('p')
7 print('The index of p is:', index)
```

---

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```
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E:\Insight Workshop\week3 python assignment>"D:/Program Files
gnment/data types/fourtyfive.py"
The index of i is: 4
The index of p is: 0
```

**46.** Write a Python program to find the length of a tuple

```
1 '''Write a Python program to find the l
2
3 name = tuple("pradip")
4 print(name)
5 print(len(name))
6
```

---

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Microsoft Windows [Version 6.3.9600]

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x  
gnment/data types/fourtysix.py"

('p', 'r', 'a', 'd', 'i', 'p')

6

## Functions

1. Write a Python function to find the Max of three numbers.



```
1  '''Write a Python function to find the Max of three num
2  def max_two( num1, num2 ):
3      if num1 > num2:
4          return num1
5      return num2
6  def max_three( num1, num2, num3):
7      return max_two( num1, max_two( num2, num3 ) )
8  print(max_three(1, 2, 3))
9
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.  
gnment/Function/one.py"

3

**2. Write a Python function to sum all the numbers in a list.**

*Sample List : (8, 2, 3, 0, 7)*

*Expected Output : 20*

```
1  '''Write a Python function to sum all the numbers
2  Sample List : (8, 2, 3, 0, 7)
3  Expected Output : 20 |
4  '''
5  def sum(num):
6      total = 0
7      for x in num:
8          total += x
9      return total
10 print(sum((8, 2, 3, 0, 7)))
11
```

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-3  
gnment/Function/two.py"  
20

3. Write a Python function to multiply all the numbers in a list.

*Sample List : (8, 2, 3, -1, 7)*

*Expected Output : -336*

```
1  '''Write a Python function to multiply all
2  Sample List : (8, 2, 3, -1, 7)
3  Expected Output : -336
4  '''
5  def multiply(myList) :
6      result = 1
7      for x in myList:
8          result = result * x
9      return result
10
11  list1 = [8, 2, 3, -1, 7]
12  print(multiply(list1)) |
```

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/F  
gnment/Function/three.py"

-336

**4.** Write a Python program to reverse a string.

*Sample String :* "1234abcd"

*Expected Output :* "dcba4321"

```

1  '''Write a Python program to rever
2  Sample String : "1234abcd"
3  Expected Output : "dcba4321"
4  '''
5  def reverse(s):
6      rs = ''
7      index = len(s)
8      while index > 0:
9          rs += s[ index - 1 ]
10         index = index - 1
11     return rs
12 print(reverse('1234abcd'))

```

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E:\Insight Workshop\week3 python assignment>"D:/Program f  
gnment/Function/four.py"  
dcba4321

E:\Insight Workshop\week3 python assignment>

**5.** Write a Python function to calculate the factorial of a number (a non-negative integer). The function accepts the number as an argument.

```
1  '''Write a Python function to calculate th
2  (a non-negative integer).
3  The function accepts the number as an arg
4  def factorial(num):
5      if num == 0:
6          return 1
7      else:
8          return num * factorial(num-1)
9  num=int(input("Enter any Number : "))
10 print(factorial(num))
11
```

---

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/F  
gnment/Function/five.py"

Enter any Number : 10

3628800

6. Write a Python function to check whether a number is in a given range.

```
1  '''Write a Python function to check whether a n
2  def test_range(num):
3      if num in range(1,5):
4          print(f" {num} is in the range")
5      else :
6          print(f"{num} is Not in given range.")
7  test_range(2)
8  test_range(22)
9
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38  
gnment/Function/six.py"

2 is in the range

22 is Not in given range.

7. Write a Python function that accepts a string and calculate the number of upper case letters and lower case letters.

*Sample String : 'The quick Brow Fox' Expected*

*Output :*

No. of Upper case characters : 3

No. of Lower case Characters : 12



```

7  def case(s):
8      d={"UPPER_CASE":0, "LOWER_CASE":0}
9      for c in s:
10         if c.isupper():
11             d["UPPER_CASE"]+=1
12         elif c.islower():
13             d["LOWER_CASE"]+=1
14         else:
15             pass
16     print ("Upper case letter is : ", d["UPPER_CASE"])
17     print ("Lower case letter is: ", d["LOWER_CASE"])
18 case('The quick Brown Fox')
19

```

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1:

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe"  
gnment/Function/seven.py"  
Upper case letter is : 3  
Lower case letter is: 13

8. Write a Python function that takes a list and returns a new list with unique elements of the first list.

*Sample List* : [1,2,3,3,3,3,4,5]

*Unique List* : [1, 2, 3, 4, 5]



```

6  def prime(num):
7      if (num==1):
8          return False
9      elif (num==2):
10         return True;
11     else:
12         for x in range(2,num):
13             if(num % x==0):
14                 return False
15         return True
16 print(prime(9))
17 print(prime(10))
18 print(prime(11))
19

```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```

E:\Insight Workshop\week3 python assignment>"D:/Program Files
gnment/Function/nine.py"
False
False
True

```

**10.** Write a Python program to print the even numbers from a given list.

*Sample List :* [1, 2, 3, 4, 5, 6, 7, 8, 9]

*Expected Result :* [2, 4, 6, 8]

```
5 def even_num(l):
6     num = []
7     for n in l:
8         if n % 2 == 0:
9             num.append(n)
10    return num
11 print(even_num([1, 2, 3, 4, 5, 6, 7, 8, 9]))
12
```

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "D:/Program Files (x86)/Python38-32/python/Function/ten.py"

[2, 4, 6, 8]

11. Write a Python program to create a lambda function that adds 15 to a given number passed in as an argument, also create a lambda function that multiplies argument x with argument y and print the result.

```
1 '''11. Write a Python program to create a lambda
2     adds 15 to a given number passed in as an argu
3     lambda function that multiplies argument
4     x with argument y and print the result. '''
5 result = lambda a : a + 15
6 print(result(1))
7 result = lambda x, y : x * y
8 print(result(2, 4))
9
```

---

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38\gnment/Function/eleven.py"

16

8

**12.** Write a Python program to create a function that takes one argument, and that argument will be multiplied with an unknown given number.

```

5  def multiplied(n):
6      return lambda x : x * n
7  result = multiplied(2)
8  print("Multiplication of 2 with 1 is =", result(1))
9  result = multiplied(3)
10 print("Multiplication of 3 with 2 is =", result(2))
11
12
13

```

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python  
gnment/Function/twelve.py"

Multiplication of 2 with 1 is = 2

Multiplication of 3 with 2 is = 6

**13.** Write a Python program to sort a list of tuples using Lambda.



```
1 '''13. Write a Python program to sort a list
2
3 age = [('Ram', 80), ('Shyam', 42), ('Hari', 5
4 print(age)
5 age.sort(key = lambda x: x[1])
6 print('sorted age is:',age)
7
```

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Microsoft Windows [Version 6.3.9600]

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```
E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python  
gnment/Function/thirteen.py"
```

```
[('Ram', 80), ('Shyam', 42), ('Hari', 5)]
```

```
sorted age is: [('Hari', 5), ('Shyam', 42), ('Ram', 80)]
```

```
E:\Insight Workshop\week3 python assignment>
```

**14. Write a Python program to sort a list of dictionaries using Lambda.**

```

1  '''14. Write a Python program to sort a list of dictionaries using Lambda.'''
2
3
4  bio = [{'name': 'ram', 'age': 67, 'address': 'ktm'},
5         {'name': 'arpan', 'age': 2, 'address': 'bkt'},
6         {'name': 'shyam', 'age': 27, 'address': 'pkr'}]
7  print(bio)
8  sorted_bio = sorted(bio, key = lambda x: x['age'])
9  print('sorted bio as per age is', sorted_bio)
10

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: Python

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "e:/Insight Workshop/week3 python assignment/Function/fourteen.py"

[{'name': 'ram', 'age': 67, 'address': 'ktm'}, {'name': 'arpan', 'age': 2, 'address': 'bkt'}, {'name': 'shyam', 'age': 27, 'address': 'pkr'}]

sorted bio as per age is [{'name': 'arpan', 'age': 2, 'address': 'bkt'}, {'name': 'shyam', 'age': 27, 'address': 'pkr'}, {'name': 'ram', 'age': 67, 'address': 'ktm'}]

E:\Insight Workshop\week3 python assignment>

**15. Write a Python program to filter a list of integers using Lambda.**



**16.** Write a Python program to square and cube every number in a given list of integers using Lambda.

```
1  '''16. Write a Python program to square
2  | and cube every number in a given list of    int
3
4  nums = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
5  print(nums)
6  print("\nSquare number:")
7  square= list(map(lambda x: x ** 2, nums))
8  print(square)
9  print("\nCube number:")
10 cube = list(map(lambda x: x ** 3, nums))
11 print(cube)
12
```

---

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-  
gnment/Function/sixteen.py"

[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

Square number:

[1, 4, 9, 16, 25, 36, 49, 64, 81, 100]

Cube number:

[1, 8, 27, 64, 125, 216, 343, 512, 729, 1000]

17. Write a Python program to find if a given string starts with a given character using Lambda.

```
1  '''17. Write a Python program to find
2  | if a given string starts with a given character    using
3
4  word = lambda x: True if x.startswith('P') else False
5  print(word('Pradip'))
6  word = lambda x: True if x.startswith('Z') else False
7  print(word('Thapa'))
8
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: Py

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "  
gnment/Function/seventeen.py"  
True  
False

**18.** Write a Python program to check whether a given string is number or not using Lambda.

```
1  '''18. Write a Python program
2  | to check whether a given string is number or not using Lamb
3
4  check = lambda q: q.replace('.', '', 1).isdigit()
5  print(check('2'))
6  print(check('2.2'))
7  print("\nPrint checking numbers:")
8  check_num = lambda r: check(r[1:]) if r[0]=='-' else check(r)
9  print(check_num('-1'))
10
```

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1: Python

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "e:/In  
gnment/Function/eighteen.py"

True

True

Print checking numbers:

True



**19.** Write a Python program to create Fibonacci series upto n using Lambda.

```
1  '''19. Write a Python program to create Fibonacci series upto n using Lambda'''
2  from functools import reduce
3  fib = lambda n: reduce(lambda x, _: x+[x[-1]+x[-2]], range(n-2), [0, 1])
4  print(fib(4)) |
5
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL 1: Python + [ ] [X]

Microsoft Windows [Version 6.3.9600]  
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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "e:/Insight Workshop/week3 pythonment/Function/nineteen.py"  
[0, 1, 1, 2]

**20.** Write a Python program to find intersection of two given arrays using Lambda.

```
1 '''20. Write a Python program
2 to find intersection of two given arrays using Lambda. '''
3
4 array1 = [1, 2, 3, 5, 8, 9]
5 array2 = [1, 2, 4, 8, 9]
6 print(array1)
7 print(array2)
8 intersection = list(filter(lambda x: x in array1, array2))
9 print ("\nIntersection of array1 and array2 are: ",intersection)
10
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: Python

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E:\Insight Workshop\week3 python assignment>"D:/Program Files (x86)/Python38-32/python.exe" "e:/Insight Workshop/Function/tweenty.py"

[1, 2, 3, 5, 8, 9]

[1, 2, 4, 8, 9]

Intersection of array1 and array2 are: [1, 2, 8, 9]