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ASSIGNMENT - 1

----------lists----------

List 1 - Word break

```
def wordBreak(w, wordsList):
    ok = [True]
    for i in range(1, len(w)+1):
        ok += any(ok[j] and w[j:i] in wordsList for j in range(i)),
    return ok[-1]
print(wordBreak("AanishaAlmaaz",["Aanisha","Almaaz"]))
```

OUTPUT: The word is split successfully!!

List 2 - SORTING A LIST

```
l1=[76, 23, 45, 12, 54, 9]
print("Original List:", l1)

for i in range(0, len(l1)):
    for j in range(i+1, len(l1)):
        if l1[i] >= l1[j]:
            l1[i], l1[j] = l1[j],l1[i]

# sorted list
print("Sorted List", l1)
```

OUTPUT: Original List: [76, 23, 45, 12, 54, 9]
Sorted List [9, 12, 23, 45, 54, 76]

List 3 - Using filter function on list

```
def filter_price(price):
    if (price < 600):
        return True
    else:
        return False

item_price = [1230, 700, 450, 350, 500, 899]

# applying filter function
filtered_price = filter(filter_price, item_price)
print(list(filtered_price))
```

OUTPUT: The input item price is [1230, 700, 450, 350, 500, 899]
The filtered output is [450, 350, 500]

----------tuples----------

Tuple 1 - Finding the extreme values

```
def find_extremes(iterable):
    data = tuple(iterable)
    if len(data) == 0:
        raise ValueError("input iterable must not be empty")
    return min(data), max(data)


extremes = find_extremes([3, 4, 2, 6, 7, 1, 9])
print("The extremes values from the given tuple is: ",extremes)
```

OUTPUT: The extremes values from the given tuple is: (1, 9)

Tuple 2 - word counter

```
fruits = (
     "apple",
     "banana",
     "orange"
     "apple",
     "apple",
     "kiwi",
     "banana"
)

Ans=fruits.count("apple")
print("The count of word apple is: ",Ans)
```

OUTPUT: The count of word apple is: 2

Tuple 3 - Guess the fruit

```
import random
words = ("apple", "banana", "orange", "grape", "kiwi", "pear", "peach", "melon")
word = random.choice(words)
guessed_word = "-" * len(word)

# Number of attempts allowed
max_attempts = 5
attempts = 0

while True:
    print("Guess the word:", guessed_word)
    guess = input("Enter a letter or guess the word: ").lower()

    if guess == word:
        print("Yayy! You guessed the word correctly:", word)
        break
    elif len(guess) == 1 and guess.isalpha():
        if guess in word:
            guessed_word = "".join(letter if letter == guess or guessed_word[i] == letter else "-" for i,
letter in enumerate(word))
            print("Correct guess!")
        else:
            print("Incorrect guess.")
            attempts += 1
    else:
        print("Invalid input. Please enter a single letter or guess the word.")

    if attempts == max_attempts:
        print("Sorry, you have used all your attempts. The word was:", word)
        break
```

OUTPUT:

```
Enter a letter or guess the word: orange
Invalid input. Please enter a single letter or guess the word.
Guess the word:
Enter a letter or guess the word: peach
Invalid input. Please enter a single letter or guess the word.
Guess the word:
Enter a letter or guess the word: apple
Invalid input. Please enter a single letter or guess the word.
Guess the word:
Enter a letter or guess the word: grape
```

Yayy! You guessed the word correctly: grape

----------sets----------

Set 1 - converting a list into a set

```
sample_list = [1,2,3,11,3,7.5,12,11,1,6,5,5,0,1]

sample_set = set()
for i in sample_list:
   sample_set.add(i)
print("Converted set is ",sample_set)
```

OUTPUT: Converted set is {0, 1, 2, 3, 5, 6, 7.5, 11, 12}

Set 2 - Basic operarions on set

```
first_set = {1, 2, 3}
second_set = {3, 4, 5}
Union=first_set.union(second_set)
print("The union of the set is: ", Union)

Intersection = first_set.intersection(second_set)
print("The intersection of the two sets is: ",Intersection)

Diff= first_set.difference(second_set)
print("The differnce of the two sets is: ",Diff)

sym_diff=first_set.symmetric_difference(second_set)
print("The symmetric difference of the two sets is: ",sym_diff)
```

OUTPUT:
The union of the set is: {1, 2, 3, 4, 5}
The intersection of the two sets is: {3}
The differnce of the two sets is: {1, 2}
The symmetric difference of the two sets is: {1, 2, 4, 5}

Set 3- Adding a list of elements to a set

```
set1 = {"Yellow", "Orange", "Black"}
list1 = ["Blue", "Green", "Red"]

set1.update(list1)
print(set1)
```

OUTPUT: {'Black', 'Blue', 'Yellow', 'Red', 'Green', 'Orange'}

----------**dictionary**----------

Dict 1 - CRUD operations on dictionary

```
# create
students = {
    "Name": "sam",
    "Roll": 101,
    "Subjects": ["OT", "MOS", "ADBMS"],
    "Age": 30
}
# Access values(read)
print("Accessing dictionary values: ", students["Name"])

# update values
students.update(Branch='CS')
print("Updated value of student branch is: ",students["Branch"])

# remove values
popped=students.pop('Age')
print("Popped value is: ",popped)
```

OUTPUT:

```
Accessing dictionary values:  sam
Updated value of student branch is:  CS
Popped value is:  30
```

Dict 2 - Guess True or False

```
point =0
questions ={"Dictionary is mutable: ":"True","Sets are orderd collection of objects:
":"False","tuples are mutable: ":"False"}
for i in questions:
    ans = input(i)
    print(ans)
    if ans == questions[i]:
        point+=1

print("Results: The score is ",point)
```

OUTPUT:

```
Dictionary is mutable: True
True
Sets are orderd collection of objects: False
False
tuples are mutable: true
true
```

Results: The score is 2

Dict 3 - Find the target

```
nums = [2,11,4,15,7]
target = 9

def f():
   dict={}
   for i,n in enumerate(nums):
       if n in dict:
          return dict[n],i
       else:
          dict[target-n]=i

       print(dict)

print("The index of the values which gives the taget value are ",f())
```

OUTPUT:

```
{7: 0}
{7: 0, -2: 1}
{7: 0, -2: 1, 5: 2}
{7: 0, -2: 1, 5: 2, -6: 3}
The index of the values which gives the taget value are  (0, 4)
```