ASSIGNMENT - 06

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# 1. Write a Python program to create a dictionary of 3 countries and their capitals.
# Print each country with its capital.
country_dict = {'India': 'New Delhi', 'USA': 'Washington, D.C.', 'France': 'Paris'}
print(country_dict)
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{'India': 'New Delhi', 'USA': 'Washington, D.C.', 'France': 'Paris'}
```

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# 2. Create a dictionary ”name”: ”Alice”, ”age”: 22, ”city”: ”Delhi”. Write a program
# to print the values of ”name” and ”city”.
info = {'name':'Arpita', 'age':20, 'city':'Bhubaneswar'}
print('Name:', info['name'])
print('City:',info['city'])
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Name: Arpita
City: Bhubaneswar
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# 3. Write a program to create a dictionary of a student with keys: ”name”, ”age”,
# ”branch”. Update the ”age” to 21 and add a new key ”grade” with value ”A”.
student = {'name':'Arpita', 'age':20, 'branch':'CEN'}
student['age'] = 21
student['grade'] = 'A'
print(student)
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{'name': 'Arpita', 'age': 21, 'branch': 'CEN', 'grade': 'A'}
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# 4. Create a dictionary of fruits with their prices. Write a program to delete one fruit
# from the dictionary and display the updated dictionary.
fruits = {'apple': 100, 'banana': 40, 'orange': 80}
del fruits['banana']
print(fruits)
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{'apple': 100, 'orange': 80}
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# 5. Write a program to store details of a book (title, author, price). Iterate through
# the dictionary and print each key and value.
book = {'Title':'The Great Gatsby', 'Author':'F. Scott Fitzgerald', 'Price':2000}
for key, value in book.items():
    print(f"{key}: {value}")
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Title: The Great Gatsby
Author: F. Scott Fitzgerald
Price: 2000
```

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# 6. Write a program to merge two dictionaries:
# d1 = {”a”: 10, ”b”: 20}
# d2 = {”c”: 30, ”d”: 40}
# Expected Output: {’a’: 10, ’b’: 20, ’c’: 30, ’d’: 40}
d1 = {'a': 10, 'b': 20}
d2 = {'c': 30, 'd': 40}
d1.update(d2)
print(d1)
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{'a': 10, 'b': 20, 'c': 30, 'd': 40}
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# 7. Write a program to check if a value 200 exists in a dictionary. sampleDict = {’a’:
# 100, ’b’: 200, ’c’: 300}
dict = {'a': 100, 'b': 200, 'c': 300}
if 200 in dict.values():
    print("200 exists in the dictionary")
else:
    print("200 does not exist in the dictionary")
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200 exists in the dictionary
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# 8. Given a dictionary of product prices:
# prices = {”laptop”: 55000, ”phone”: 25000, ”tablet”: 18000} Write a program to
# find the product with the maximum price.
prices = {"laptop": 55000, "phone": 25000, "tablet": 18000}
max_price = -1
max_product = ""
for product, price in prices.items():
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    if price > max_price:
        max_price = price
        max_product = product
print(f"The product with the maximum price is {max_product} with a price of {max_price}")
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The product with the maximum price is laptop with a price of 55000
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# 9. Write a Python program that counts the frequency of each word in the string:
# ”Python is fun and Python is powerful”. Store the result in a dictionary
text = "Python is fun and Python is powerful"
word_list = text.split()
word_freq = {}
for word in word_list:
    if word in word_freq:
        word_freq[word] += 1
    else:
        word_freq[word] = 1
print(word_freq)
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{'Python': 2, 'is': 2, 'fun': 1, 'and': 1, 'powerful': 1}
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# 10. Given a dictionary of roll numbers and names, write a program to invert it so that
# names become keys and roll numbers become values.
# students = {101: ”Amit”, 102: ”Riya”, 103: ”John”}
students = {101: "Amit", 102: "Riya", 103: "John"}
inverted_students = {name:roll for roll, name in students.items()}
print(inverted_students)
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{'Amit': 101, 'Riya': 102, 'John': 103}
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# 11. Create a set {10, 20, 30}. Add 40 and 50. Remove 20.Print the final set.
ex_set = {10, 20, 30}
ex_set.add(40)
ex_set.add(50)
ex_set.remove(20)
print(ex_set)
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{40, 10, 50, 30}
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# 12. Given two sets:
# A = {1, 2, 3, 4}
# B = {3, 4, 5, 6}
# Write a Python program to find: Union of A and B. Intersection of A and B.
# Difference A - B. Symmetric Difference A and B
a = {1, 2, 3, 4}
b = {3, 4, 5, 6}
print('Union:', a|b)
print('Intersection:', a&b)
print('Difference:', a-b)
print('Symmetric Difference:', a^b)
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Union: {1, 2, 3, 4, 5, 6}
Intersection: {3, 4}
Difference: {1, 2}
Symmetric Difference: {1, 2, 5, 6}
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# 13. Write a Python program that removes duplicate numbers from the list:[1, 2, 2, 3,
# 4, 4, 5]
num_list = [1, 2, 2, 3, 4, 4, 5]
unique_num_list = list(set(num_list) )
print(unique_num_list)
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[1, 2, 3, 4, 5]
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# 14. Given two lists:
# list1 = [1, 2, 3, 4]
# list2 = [3, 4, 5, 6]
# Write a Python program to find common elements using sets.
list1 = [1, 2, 3, 4]
list2 = [3, 4, 5, 6]
set1 = set(list1)
set2 = set(list2)
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print('Common elements:', set1 & set2)
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Common elements: {3, 4}
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# 15. Write a Python program to find all unique words from the sentence: ”Python is
# fun and learning Python is easy”
text = "Python is fun and learning Python is easy"
word_list = text.split()
words = set(word_list)
print('Unique words:', words)
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Unique words: {'easy', 'learning', 'and', 'fun', 'is', 'Python'}
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# 16. Given three sets:
# A = {1, 2, 3}
# B = {2, 3, 4}
# C = {3, 4, 5}
# Write a program to find: Elements common to all three sets. Elements present in
# at least one set.
a = {1, 2, 3}
b = {2, 3, 4}
c = {3, 4, 5}
print('Elements common to all three sets:', a & b & c)
print('Elements present in at least one set:', a | b | c)
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Elements common to all three sets: {3}
Elements present in at least one set: {1, 2, 3, 4, 5}
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# 17. Remove items from set1 that are not common to both set1 and set2
# set1 = {10, 20, 30, 40, 50}
# set2 = {30, 40, 50, 60, 70}
set1 = {10,20,30,40,50}
set2 = {30,40,50,60,70}
set1 = set1 & set2
print(set1)
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{40, 50, 30}
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