



Republic of the Philippines

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College of Informatics and Computing Sciences

MIDTERM EXAMINATION

BAT 405 –ANALYTICS APPLICATION

Information Technology Department

1st Semester AY 2024-2025

Name: Casao, John Dell A.

Score: _____

Course/Section: IT – BA - 4106

Date: 18/11/2024

Items	.5 Points	5 Points
Application 1 – 3	If the answer is incorrect but has a Solution	If the Output is Correct and the Syntax is Correct

Paste the Screen shot of your Answer

And Google Colab Link:

1. Categorizing Grades

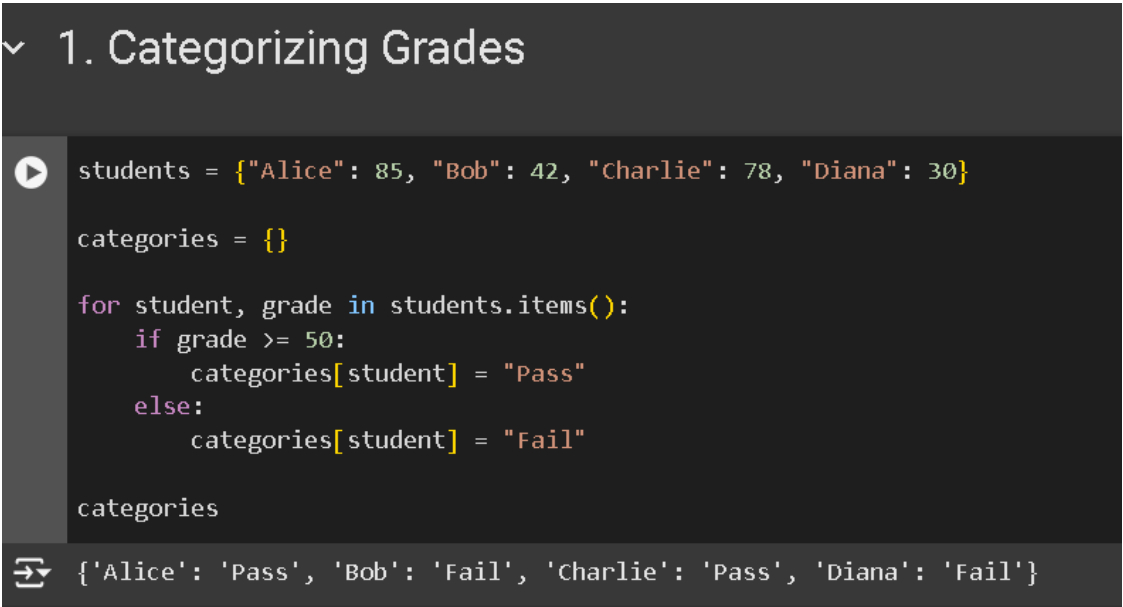
You have a dictionary of students and their scores. Write a Python code snippet to create a new dictionary categorizing students as Pass (score >= 50) or Fail (score < 50).

students = {"Alice": 85, "Bob": 42, "Charlie": 78, "Diana": 30} # Create a dictionary `categories` where the key is the student's name # and the value is either "Pass" or "Fail".

Sample Output

```
{'Alice': 'Pass', 'Bob': 'Fail', 'Charlie': 'Pass', 'Diana': 'Fail'}
```

Answer:





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2. Count Word Frequencies

Write a Python function that takes a string and returns a dictionary with the frequency of each word in the string. For example:

```
text = "the quick brown fox jumps over the lazy dog the fox"
```

```
# Output: {"the": 3, "quick": 1, "brown": 1, "fox": 2, "jumps": 1, "over": 1, "lazy": 1, "dog": 1}
```

Answer:

```
2. Count word Frequencies

def word_frequency(text):
    words = text.lower().split()
    frequency = {}
    for word in words:
        frequency[word] = frequency.get(word, 0) + 1
    return frequency

text = "the quick brown fox jumps over the lazy dog the fox"
result = word_frequency(text)
print(result)

{'the': 3, 'quick': 1, 'brown': 1, 'fox': 2, 'jumps': 1, 'over': 1, 'lazy': 1, 'dog': 1}
```

3. Find the Most Common Element

Given a dictionary of items and their quantities:

```
inventory = {"apples": 5, "bananas": 8, "oranges": 3, "pears": 8}
```

Write a Python function to find the item(s) with the highest quantity. For example:

- Output: ["bananas", "pears"]

Answer:

```
3. Find the Most Common Element

def findHighestQuantity(inventory):
    max_quantity = max(inventory.values())

    highest_quantity_items = [item for item, quantity in inventory.items() if quantity == max_quantity]

    return highest_quantity_items

inventory = {"apples": 5, "bananas": 8, "oranges": 3, "pears": 8}
highest_quantity_items = findHighestQuantity(inventory)
print(highest_quantity_items)

['bananas', 'pears']
```