University of Asia Pacific

Department of Computer Science and Engineering

Program: B.Sc. in CSE

Mid-Semester Examination **Spring-2024** **3rd Year 1st Semester**

Course Code: CSE 309 Course Title: Object Oriented Programming II: Visual and Web Design Credit: 3.0

Time: 1.00 Hour. Full Mark: 20

There are **Three** Questions. Answer all of them. Part marks are shown in the margins.

1. a. Develop a Python function that takes a dictionary as a positional argument, where the keys are student names and the values are lists of their marks in different subjects. The function should return a new dictionary with student names as keys and their total marks as values. You do not have to take the inputs from users. You should call the function with the required parameter. **[5]** **[CO2]**

Function call	**Function returns**

students_marks = {
‘Meena’: [85, 90, 78],
'Raju': [80, 88, 92],
‘Mithu’: [90, 85, 85]
}
 	
fun(students_marks)
	{
	'Meena': 253,
	‘Raju’: 260,
	‘Mithu’: 260
	}

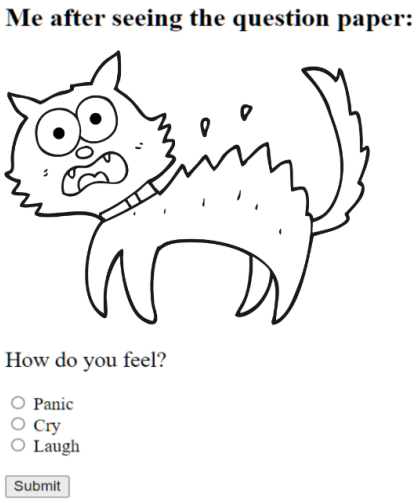
b. Develop a basic calculator in Python that prompts the user to select an arithmetic operation. Afterward, request the user to input two numbers, and then perform the chosen operation (addition, subtraction, multiplication, or division) on the given numbers. **[5]** **[CO2]**

**** Make sure to handle division by zero error***

Sample Input	Sample output
Enter operation: add Enter number 1 : 10 Enter number 2 : 5	The result is: 15

2. Assess the following figure and write an HTML code that includes the following elements as shown: **[5] [CO3]**

1. An **h1** heading that says "**Me after seeing the question paper**."
2. An image of a cat, the file name is **cat.jpg** .
3. A **form** with the text "How do you feel?" followed by three radio buttons (only one should be selectable):
    a. The first option should be labeled "**Panic**."
    b. The second option should be labeled "**Cry**."
    c. The third option should be labeled "**Laugh**."
4. Include a **submit button** that shows an alert with the message "You chose your reaction!" when clicked.



3. Imagine you're building a payroll system for a company. Each employee has basic details like their name, position, and salary. The system should also be able to calculate bonuses based on a percentage of their salary. **[5] [CO2]**

(a) Create a Python class named `Employee` with attributes `name`, `position`, and `salary`.

(b) Add a method called `calculate_bonus()` that takes a `bonus_percentage` as an argument and returns the total salary including the bonus.

(c) Create an `Employee` object and use the `calculate_bonus()` method to calculate the employee's total salary after applying a bonus of 10%.