THE UNIVERSITY OF LAHORE

Faculty of Engineering and Technology
Department of Technology
Spring Semester 2024

Instructor's Name:	**Asim Anwar**	**Subject:**	**Artificial Intelligence and Optimization**
Subject Code:	**CS13315**	**Assignment #:**	**03**
Total Marks:	**10**	**Assigning Date:**	**29-2-2024**
Due Date& Time:	**6-3-2024**		

Instructions for Candidates

i. Provide your original work reflecting your own "understanding".
ii. Copying or reproducing others work may lead to zero credits in that particular question(s).

Python Basics: Abstract Classes and Methods

Question # 01

In this assignment, you will be creating an abstract class for a bank that will be used to create a regular class for a specific bank. This class will contain the implementation of the abstract method from the abstract class.

Assignment Instructions

1. Create a class called `Bank` and pass `ABC` to it.

2. Inside the class you have to define two methods:

2.1: Define a function called `basicinfo()` and add a print statement inside it saying:

"This is a generic bank"` and returning the string `'"Generic bank: 0"`.

2.2: Define a second function called `withdraw` and keep it empty by adding a pass keyword under it. Make this function abstract by adding `'@abstractmethod'` right above it.

3. Create another class called `Swiss` and pass the class `Bank` inside it. This means you are inheriting from `class Bank`.

3.1: Create a constructor for this class that initializes a class variable `bal` to `1000`

4. Override both functions from the Bank class: `basicinfo()` and `withdraw()`.

4.1: Define a function called `basicinfo()` and add a print statement inside it stating:

“This is the Swiss Bank”` and returning a string with `"Swiss Bank: "` followed by the current bank balance.

For example, if `self.bal = 80`, then it would return `"Swiss Bank: 80"`

4.2. Define a second function, called `withdraw` and pass one parameter to it (other than `self):` amount. Amount represents the amount that will be withdrawn.

4.2.1: Update the class variable bal by deducting the value of amount from it.

4.2.2: Print the value of amount giving output such as: “Withdrawn amount: 30"

4.2.3: Print the new balance giving an output such as: “New balance: 970”

4.2.4: Return the new balance

Note: Make sure to verify that there is enough money to withdraw! If amount is greater than balance, then do not deduct any money from the class variable `bal`. Instead, print a statement saying `"Insufficient funds"`, and return the original account balance instead.