Assignment_oops_Assignment

October 15, 2023

[1]:
```
#Problem 1
class Bank_Account:
    def __init__(self):
        self.balance=0
        self.account_number=127689765
        self.account_holder_name='Pratyush'
        print("Hello!!! Welcome to the Deposit & Withdrawal Machine")

    def deposit(self):
        amount=float(input("Enter amount to be Deposited: "))
        self.balance += amount
        print("\n Amount Deposited:",amount)

    def withdraw(self):
        amount = float(input("Enter amount to be Withdrawn: "))
        if self.balance>=amount:
            self.balance-=amount
            print("\n You Withdrew:", amount)
        else:
            print("\n Insufficient balance  ")

    def display(self):
        print("\n Net Available Balance=",self.balance)

# creating an object of class
s = Bank_Account()

# Calling functions with that class object
s.deposit()
s.withdraw()
s.display()
```

```
Hello!!! Welcome to the Deposit & Withdrawal Machine
Enter amount to be Deposited:  1000


 Amount Deposited: 1000.0
```

```
Enter amount to be Withdrawn:  200


 You Withdrew: 200.0

 Net Available Balance= 800.0
```

[2]:
```python
#Problem 2
class Employee:
    def __init__(self, name, emp_id, salary):
        self.name = name
        self.id = emp_id
        self.salary = salary



    def calculate_bonus(self,salary, hours_worked):
        overtime = 0
        if hours_worked > 50:
            overtime = hours_worked - 50
        self.bonus = self.salary + (overtime * (self.salary / 50))



    def print_employee_details(self):
        print("\nName: ", self.name)
        print("ID: ", self.id)
        print("Bonus: ", self.bonus)


employee2 = Employee("SMITH", "E7698", 55000)


employee2.calculate_bonus(45000, 52)
employee2.print_employee_details()
```

```
Name:  SMITH
ID:  E7698
Bonus:  57200.0
```

[8]:
```python
#Problem 4

class Library:
    libraryList = ['Harry Potter','Lord of the rings','Lupin']
```

```
    while True:
        user_input = input('\n Choose option: ')

        if user_input == 'add_book':
            to_add = input('add_book: ')
            libraryList.append(to_add)
        elif user_input =='show_books':
          for e in libraryList:
            print((e),end=' ')
        elif user_input =='borrow_book':
            to_remove = input("borrow_book: ")
            libraryList.remove(to_remove)
        elif user_input == 'quit':
            break
        else:
            print("Available options: add_book, show_books, remove_book, quit")
```

```
 Choose option:  add_book
add_book:  India,The Country

 Choose option:  show_books

Harry Potter Lord of the rings Lupin India,The Country


 Choose option:  borrow_books

Available options: add_book, show_books, remove_book, quit


 Choose option:  borrow_book
borrow_book:  Lupin

 Choose option:  show_books

Harry Potter Lord of the rings India,The Country


 Choose option:  quit
```

[4]:
```
#Problem 5
 class Products:
    product_list= ['Product1','Product2','Product3']

    def __init__(self, quantity):
        self.quantity = quantity
```

```
    while True:
        user_input = input('Choose option: ')

        if user_input == 'add':
                to_add = input('add_product: ')
                product_list.append(to_add)
        elif user_input =='display_product':
                for e in product_list:
                    print((e),end=' ')
        elif user_input =='update_product':
                quantity=10
                to_update =int(input("Enter Quantity?"))
                quantity=quantity+to_update
                print("Product Quantity:", quantity)

        elif user_input == 'quit':
                 break
        else:
                print("Available options: add_product, display_product,␣
↪update_product, quit")
```

```
Choose option:  add
add_product:  Product4
Choose option:  display_product

Product1 Product2 Product3 Product4

Choose option:  update_product
Enter Quantity? 12

Product Quantity: 22

Choose option:  quit
```

[2]:
```
#Problem 6
import sys
class Shape:

 while True:
    user_input = input('Choose option: ')

    if user_input == 'area':
        length= int(input("Enter Length?"))
        breadth = int(input("Enter Breadth?"))
        area=length*breadth
        print("Area: ", area)


    elif user_input =='perimeter':
```

```
        length= int(input("Enter Length?"))
        breadth = int(input("Enter Breadth?"))
        area=length*breadth
        perimeter=2*(length+breadth)
        print("Perimeter: ", perimeter)

    elif user_input == 'quit':
         break
    else:
          print("Available options: area of rectangle, perimeter of␣
 ↪rectangle,quit")
```

```
Choose option:  area
Enter Length? 10
Enter Breadth? 10

Area:  100

Choose option:  10

Available options: area of rectangle, perimeter of rectangle,quit

Choose option:  perimeter
Enter Length? 11
Enter Breadth? 11

Perimeter:  44

Choose option:  quit
```

[1]:
```
#Problem 7
def Average(lst):
    sum_of_list = 0
    for i in range(len(lst)):
        sum_of_list += lst[i]
    average = sum_of_list/len(lst)
    return average


Id_list= ['Id1','Id2','Id3']

name_list= ['Name1','Name2','Name3']

grade_list=[50,60,70]



def __init__(self, Id,Name,Grade):
        self.Id = Id
        self.Name = Name
```

```
        self.Grade= Grade


while True:
    user_input = input('\n Choose option: ')

    if user_input == 'display':
        for e in Id_list:
            print((e),end=' ')

        print("\n")

        for e in name_list:
            print((e),end=' ')

        print("\n")

        for e in grade_list:
            print((e),end=' ')

    if user_input == 'calculate':
        average = Average(grade_list)
        print("Average of the list =", round(average, 2))

    elif user_input == 'quit':
        break
    else:
        print("Available options: display details, calculate grade, quit")
```

```
 Choose option:  display
Id1 Id2 Id3

Name1 Name2 Name3

50 60 70 Available options: display details, calculate grade, quit

 Choose option:  calculate
Average of the list = 60.0

 Choose option:  quit
```

[1]:
```
#Problem 8
import email.message, email.policy, email.utils, sys
```

```
class Message:
  def __init__(self, sender, recipient,subject):
    self.sender = sender
    self.recipient = recipient
    self.subject = subject

p1 = Message("From: Learn", "To: you@yourdomain.com","A mail To you")

print(p1.sender)
print(p1.recipient)
print(p1.subject)

text = """Welcome to TutorialsPoint - Simple Easy Learning"""

message = email.message.EmailMessage(email.policy.SMTP)
message['To'] = 'you@yourdomain.com'
message['From'] = 'Learn '
message['Subject'] = 'A mail To you'
message['Date'] = email.utils.formatdate(localtime=True)
message['Message-ID'] = email.utils.make_msgid()
message.set_content(text)
```

```
From: Learn
To: you@yourdomain.com
A mail To you
```

[3]:
```
#Problem 3
class Car:
    car_list= ['Car1','Car2','Car3']


    while True:
        user_input = input('Choose option: ')

        if user_input == 'rent':
                to_rent = input('Rent Vehicle: ')
                car_list.remove(to_rent)
        elif user_input =='display':
                for e in car_list:
                    print((e),end=' ')
        elif user_input =='return':
                to_return = input('Return Vehicle: ')
```

```
                car_list.append(to_return)

        elif user_input == 'quit':
                 break
        else:
                print("Available options: Rent Vehicle, Return Vehicle, Display␣
↪Vehicle, quit")
```

```
Choose option:  3

Available options: Rent Vehicle, Return Vehicle, Display Vehicle, quit

Choose option:  rent
Rent Vehicle:  Car1
Choose option:  display

Car2 Car3

Choose option:  return
Return Vehicle:  Car1
Choose option:  display

Car2 Car3 Car1

Choose option:  quit
```

[ ]: