AI ASSIGNMENT WEEK - 7 | VIVEK KUMAR | D2 | 20233317

Define a class Message which has a function details() that returns a string. Define details() in such a way that if no string is passed as a parameter then it returns 'My message' else if a string is passed in details() it prints the string. Take a variable choice such that if choice is 1, then no parameter is passed in details() and default message "Welcome to Python World" is printed. For any other choice string is passed as a parameter in details() and is printed as "My Message-"

```
class message:
  def __init__(self):
    self.choice = int(input())
    #print("taret 1")
    self.mess = "welcome to python world"
  def details(self):
    st1=input()
    if(self.choice==1):
      print(self.mess)
    else:
      print("my message : ",st1)

obj = message()
obj.details()            #basically run krne par cunstruvtor auto call ho gya is
                         # liye sabse pehle inout ka primp aa gye  aur wo constructor
                         # wala section execute ho gya
                         #inske baad details wala functio execute hua.
```

```
1
its vkd
welcome to python world
```

2. [Cabs all over!] Define a class Cab having following specifications: 1) Init method that initializes driver name, kms and rate/km. 2) Cab Class had a method rateperkm() that returns the running charges as kms*rate 3) There are 3 drivers (driver1, driver2 and driver3) who have their own rate (rate1, rate2 and rate3) per kms. 4) Create three objects of the class Cab (firstcab, secondcab and thirdcab) and use to get the name of each driver along with the charges.

```
class cab():
  def __init__(self,name,kms,rate):  #rate is acc to per km
    self.name = name
    self.kms = kms
    self.rate = rate

  def rateperkm(self):
    return (self.kms)*(self.rate)

km = int(input())
firstcab = cab(input(),km,int(input()))
secondcab = cab(input(),km,int(input()))
thirdcab = cab(input(),km,int(input()))

print("first driver : ",firstcab.name)
print("rate = ",firstcab.rateperkm())
print("second driver : ",secondcab.name)
print("rate = ",secondcab.rateperkm())
print("third driver : ",thirdcab.name)
print("rate = ",thirdcab.rateperkm())
```

```
15
monu
10
sonu
15
vikas
20
first driver :  monu
rate =  100
second driver :  sonu
rate =  150
third driver :  vikas
rate =  200
```

3. [Natural Numbers] Define a class natural that has a static method naturalnumber() which returns True if the given number string form) is natural else 0False.

```
import math as m
class natural():

  def naturalNumber(self,n):                          # n.split('.')[1]=='0'

    if(n>0 and m.floor(n)==m.ceil(n)):
      return True
    else:
      return False

obj = natural()
number = float(input())
obj.naturalNumber(number)
```

```
 23.5
 False
```

Q4. Write a program to show hybrid inheritance. Class A is inherited by two classes B & C. Class D inherits both B & C classes. Define a function display in each class to print a statement: you are in.

```
class A():
  def display():
    print("you are in class A")

class B(A):
  def display():
    print('you are in class B')

class C(A):
  def display():
    print('you are in class C')
class D(B,C):
  def display():
    print('you are in class D')

A.display()
B.display()
C.display()
D.display()
```

```
 you are in class A
 you are in class B
 you are in class C
 you are in class D
```

Q4. Write a program to show hybrid inheritance. Class A is inherited by two classes B & C. Class D inherits both B & C classes. Define a function display in each class to print a statement: you are in.

```
class abstract():
  def character(self):
    return 'these are the characters'

  def music(self):
    return 'these are music files'

  def graphics(self):
    return 'these are graphics files'

class ABC(abstract):
  def name_of_class(self):
    return 'ABC class'                          # ABC class inherits sbatract
                                                # class so we can acess the methods of
obj = ABC()                                      # of abstract usind object of ABC


print(obj.character())
print(obj.music())
print(obj.graphics())
print(obj.name_of_class())
```

```
 these are the characters
 these are music files
```

```
these are graphics files
ABC class
```