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ANSWER

Q.1 Write a program to checking whether the given number is even number or not.

Ans :

```
a=int(input("enter number:"))
if(a%2==0):
   print(a," is even number")
else:
   print(a,"is odd number");
```

output :

```
enter number:5
5 is odd number
enter number:2
2  is even number
0  is even number
```

Q.2 Write a program to compute the distance between two points taking input form the user.

Ans:

```
import math
print("enter cordinates of first point:")
x1=int(input("X1:"))
x2=int(input("X2:"))
print("enter  cordinates of second point:")
```

```
y1=int(input("y1:"))
y2=int(input("y2:"))
distance=math.sqrt((y2-y1)*((y2-y1)) + (x2-x1)*((x2-x1)))
print(distance)
```

output:

enter cordinates of first point:

X1:5

X2:2

enter cordinates of second point:

y1:3

y2:6

4.242640687119285

Q.3 Write a python program to find factorial of given no.

Ans:

```
a=int(input("enter number:"))
fact =1
for i in range(a) :
    fact=a*fact
    a=a-1
print("factorial is: ",fact)
```

output :

enter number:8

factorial is: 40320

Q.4 Write a python program to design a calculator.

Ans:

```
print("enter expression to calculate and enter out to exit !")
while(1):
   a = input("expression:")
   if(a=='out'):
      break;
   print(eval(a));
```

output :

```
enter expression to calculate and enter out to exit !
expression: 5+2
7
expression: 2*7
14
expression: 4/6
0.6666666666666666
expression: 8.5*4
34.0
expression:out
```

Q.5 Write a python class to implement pow(x,n).

Ans:

```
import math
a=int(input("enter number:"))
n=int(input("enter power:"))
power=pow(a,n)
print("power is:",power)
```

Output:

```
enter number:5
enter power:3
power is: 125
```

Q.6 Write a python to use split and join methods in the string and trace a birthday with a dictionary data structure.

Ans:

#split method→

```
text = input("enter string:")
a=text.split();
print(a)
```

output:

```
enter string : hello my name is imran khan
['hello', 'my', 'name', 'is', 'imran', 'khan']
```

#join method →

```
mytuple=('  imran  ' , '  pankaj  ' , '  jayant ')

b = "hello".join(mytuple)

print(b)
```

output:

```
imran hello pankaj hello jayant
```

#tarc in dictionary →

```
birthdays ={"imran":"08/03" , "pankaj":"12/06" , "jayant":"01/09" , "sumit":"10/03"}

name= input("enter name for search birthday: ")


if name in birthdays:

   print("the birthday Of ",name ," is ",birthdays[name])


else:

   print("sorry we don't have that name is database")
```

output:

```
enter name for search birthday: imran

the birthday Of  imran is 08/03
```

Q.7 Write a python program to print each line of a file in reverse order.

Ans:

Your_file.txt:

this is pyhton code

hope you enjoye

python is fantstic langauge

program:

```
file_path = 'your_file.txt'


with open (file_path,'r') as file:
   lines=file.readlines()


   for line in (lines):
      print(line.rstrip()[::-1])
```

output:

```
eguagnal citstnaf si nohtyp
eyojne uoy epoh
edoc nothyp si siht
```

Q.8 Write a python program to compute the number of character, words, and lines in files.

Ans.

```
def  count_and_read(file_path):
   try:
f = open(file_path,"r")
print(f.read())
f.seek(0)
lines = f.readlines()
words = list()
for i in lines:
   words.extend(i.split())

characters = list()
for i in words:
   characters.extend(i)
print("Number of lines : ",len(lines))
print("Number of words : ",len(words))
print("Number of chars : ",len(characters))
except FileNotFoundError:
      print("File not found!")

def main():
   file_path = input("Enter the path of the file: ")
```

```
    count_and_read(file_path)


if __name__ == "__main__":
    main()
```

output:

```
Enter the path of the file: sample.txt
Number of Characters:  39
Number of words:  7
Number of lines:  2
```

Q.9 Write a python program for finding unique and duplicate items of a list.

Ans:

```
myList = [1,2,2]

sortedList = myList.copy()

sortedList.sort()

lastElement = None

duplicateValues = list()

uniqueValues = list()

for i in range(len(sortedList)):

    if sortedList[i] == lastElement: continue


    lastElement = sortedList[i]
```

```
    if i == len(sortedList) -1:
        uniqueValues.append(sortedList[i])
    elif sortedList[i] == sortedList[i+1]:
        duplicateValues.append(sortedList[i])
    else:
        uniqueValues.append(sortedList[i])

print("list : ", myList)
print("duplicateValues : ", duplicateValues)
print("uniqueValues : ", uniqueValues)
```

output :

list : [1, 2, 3, 4, 1, 3, 5]

duplicateValues : [1, 3]

uniqueValues : [2, 4, 5]

Q.10 Write a python program to slice with list.

Ans:

```
my_list=[]
n=int(input("enter size of list:"))
for i in range(0,n):
    print("enter number at index:",i)
    item=int(input())
    my_list.append(item)
```

```
first_index=int(input("enter start index for slicing :"))
last_index=int(input("enter end index slicing:"))

slice_list=my_list[first_index:last_index]
print("orignal list:",my_list)
print("sliced list:",slice_list)
```

output:

```
enter size of list : 6
enter number at index  (0) : 2
enter number at index (1) : 4
enter number at index  (2): 6
enter number at index (3): 8
enter number at index (4): 10
enter number at index (5): 12

enter start index :1
enter end index :4
orignal list: [2, 4, 6, 8, 10, 12]
sliced list: [4, 6, 8]
```

Q.11 Write a python program to display the calendar of given month and year.

Ans:

```
import calendar


yy = int(input("Enter Year (Example : 2001) = "))

mm = int(input("Enter Month (Example : 08) = "))


print(calendar.month(yy, mm))
```

output:

```
enter year(example:2001)= 2003

enter month(example:08)= 04

    April 2003

Mo Tu  We  Th  Fr  Sa  Su

       1   2    3   4   5   6

 7     8   9   10  11 12  13

14   15  16   17  18  19  20

21   22   23  24   25  26  27

28   29  30
```

Q.12 Write a python program to demonstrate working with tuples in python.

Ans:

```
# Creating Tuples
tuple1 = (1,2,'c','d',5.5,True)
tuple2 = tuple((1,2,3))     # double parenthesis are important.
tuple3 = ("abc",)           # comma is necessary for one item tuple.
# Printing Tuples And Their Details
print(tuple1)
print(len(tuple2))
print(type(tuple3))
# Accessing Tuples And It's Items
print(tuple3[0])
print(tuple2[-1])
print(tuple1[1 : 4])        # print specific values of tuples.
print(tuple1[-1 : : -1])    # print tuple in reverse.
if 2 in tuple2: print("2 exists in Tuple2.")
# Update Tuples
 # tuple1[2] = 5 , will generate an error as tuples are immutable however we can first convert tuples to list,
 # update them and then reassign them as tuples. For example,
print(tuple1)
myList = list(tuple1)
myList.append(False)
```

```
tuple1 = tuple(myList)
print(tuple1)
```

 # delete last item from tuple.

```
myList = list(tuple3)
myList.pop()
tuple3 = tuple(myList)
print(tuple3)
   # delete entire tuple
del tuple3
```

 # Unpacking Tuples

```
a,b,c = tuple2
print(a)
print(b)
print(c)

a,*b,c = tuple1
print(a)
print(b)
print(c)
```

 # Looping Through Tuples

```
for i in tuple1:
   print(i)
```

```
while i < len(tuple2):
    print(tuple2[i])
    i += 1
```

 # Tuples Concatenation

```
tuple3 = tuple1 + tuple2
print(tuple3)
tuple4 = tuple2 * 3
print(tuple4)
```

 # Tuple's Methods

```
print(tuple3.count(2))
print(tuple4.index(1))
```

output:

```
(1, 2, 'c', 'd', 5.5, True)
3
<class 'tuple'>
abc
3
(2, 'c', 'd')
(True, 5.5, 'd', 'c', 2, 1)
2 exists in Tuple2.
(1, 2, 'c', 'd', 5.5, True)
(1, 2, 'c', 'd', 5.5, True, False)
()
```

1

2

3

1

[2, 'c', 'd', 5.5, True]

False

1

2

c

d

5.5

True

False

1

2

3

(1, 2, 'c', 'd', 5.5, True, False, 1, 2, 3)

(1, 2, 3, 1, 2, 3, 1, 2, 3)

2

0

Q. 13 Write a python program to count the number of characters in the string and store them in a dictionary data structure.

Ans:

```
string=input("enter string:")

mydict={}

for i in range(len(string)):

   mydict.update({i:string[i]})

print("length of string is:",len(string))

for x,y in mydict.items():

   print(x,":",y)
```

output:

```
enter string:imrna khan

length of string is: 10

0 : i

1 : m

2 : r

3 : n

4 : a

5 :

6 : k

7 : h

8 : a

9 : n
```

Q.14 Write a python program to define a module and import a specific function in that module to another program.

Ans:

#main module:

```
def power(a,b):


   power=a
   for i in range(b-1):
      power=power*a
   return power
```

#import function from module:

```
from my_module import power


a=int(input("enter number:"))
b=int(input("enter power:"))
result=power(a,b)
print("power is:",result)
```

output:

```
enter number:2
enter power:10
power is: 1024
```

Q.15 Write a script named filecopy.py. This script should prompt the user for the names of two text files. The contents of the first file should be input and written to the second file.

Ans:

```
first=input("enter input file path: ")
try:
   with open(first,'r') as inputfile:
      data=inputfile.read()
      second=input("enter output file path: ")
      with open(second,'w') as outputfile :


         for content in data:
            outputfile.write(content)
         print("file content copied successfully."
except FileNotFoundError:
   print("Input file not found!")
else:
   with open(first,'r') as ifile,open(second,'r') as ofile:
      print("this is first file contenet: ",ifile.read())
      print("this is first file contenet: ",ofile.read())
```

Q.16 Write a python program to use classes and methods.

Ans:

```
class dog:
    def __init__(self,name,age):
        self.name=name
        self.age=age
    def bark(self):
        return "woof !"
    def greet(self):
        return f"Hello, i am {self.name},and i am {self.age} years old."
#creating and instance of the dog class
my_dog=dog(name="tomy",age="3")

#accessing attributes
print(my_dog.name)

# calling methods
print(my_dog.bark())
print(my_dog.greet())
```

output:

```
tomy
woof !
Hello, i am tomy,and i am 3 years old.
```

Q.17 **Write a python program to methods with self.**

Ans:

```
class person:
   name="imran"
   occupation="devloper"
   def info(self): # self is a pointer wich points to current object
      print(f"{self.name} is {self.occupation}")
#create instance of class
a=person()
#print detail using info method
a.info()
b=person()
b.name="pankaj"
b.occupation="HR"
b.info()
# print detail using instance of class
c=person()
c.name="jayant"
c.occupation="software engineer"
print(f"{c.name} is {c.occupation}")
```

output:

```
imran is devloper
pankaj is HR
jayant is software engineer
```

Q.18 **Write a python program to count the no. of object**.

Ans:

```
class myclass:
   count=0
   def __init__(self):
      myclass.count+=1


o1=myclass()
o2=myclass()
o3=myclass()


print("the number of object:",myclass.count)
```

output:

the number of object: 3

Q. 19 Write a python program to use of constructor.

Ans:

```
class Book:
    def __init__(self,title,author):
        self.title=title
        self.author=author
    def display_info(self):
        print(f"Title:{self.title}\n Author:{self.author}")


# creating an instance of class Book
my_book=Book(title="Alice in wonderland",author="Lewis carrol")


#Accessing attributes
my_book.display_info()
```

output:

```
Title: Alice in wonderland
 Author: Lewis carrol
```

20. Write a python to use of inheritance.

Ans:

```
class vehicle:
    def start_engine(self):
        return "vroom !"


class car(vehicle):
    def open_door(slef):
        return "Door opened !"


#creating instance


my_car=car()


#accessing methods using child class


engine_sound=my_car.start_engine()
door_status=my_car.open_door()


print(f"{engine_sound}")
print(f"{door_status}")
```

output:

```
vroom !
Door opened !
```