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Lab: ds lab 2

Roll no: 07

Sec: B

1) Write a program to find the area of rectangle. Take input from user.

Eg. x= int(input('Enter number:'))

```
w=float(input("Enter a width of a rectangle "))
h=float(input("Enter a  height of a rectangle "))
area=w*h
print("The area is:%.2f" %area)
```

2) Write a program to swap the values of two variables

```
x=int(input("enter x: "))
y=int(input("enter y: "))
```

```
print("X before swapping %.d " %x)
print("Y before swapping %.d " %y)
x,y=y,x
print("X After swapping %.d " %x)
print("Y After swapping %.d " %y)
```

```
User@DESKTOP-FF8I8GD MINGW64 ~/Documents/ds lab/week2_exer (main)
$ python p2.py
enter x: 10
enter y: -10
X before swapping 10
Y before swapping -10
X After swapping -10
Y After swapping 10
```

3.

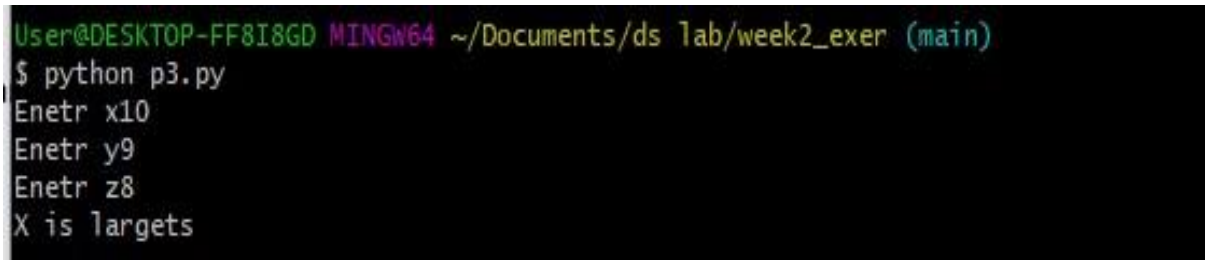
Write a program to find whether a number is even or odd.

```
x=int(input("Enetr x"))
if(x%2==0):
        print("X is even")
else: print("X is odd")
```

```
User@DESKTOP-FF8I8GD MINGW64 ~/Documents/ds lab/week2_exer (main)
$ python p3.py
Enetr x11
X is odd
```

4. Write a program to check the largest among the given three numbers.

```
x=int(input("Enetr x"))

y=int(input("Enetr y"))

z=int(input("Enetr z"))


if x>y and x>z:

        print("X is largets")

elif y>z:

  print("Y is larget")

else: print("Z is larget")
```



5. Write a program to demonstrate while loop with else

```
count=0

while count<3:

        print("Inside while loop and count is {}".format(count))

        count=count+1

else:

  print("Outside while and inside else")
```

```
User@DESKTOP-FF8I8GD MINGW64 ~/Documents/ds lab/week2_exer (main)
$ python p3.py
Inside while loop and count is 0
Inside while loop and count is 1
Inside while loop and count is 2
Outside while and inside else
```

6.Write a program to demonstrate List functions and operations.

```
my_list=[10,20,30,19,0,40,19]
x=0
print(my_list.index(19))
print(my_list.count(19))
print("Before Sorting",my_list)
my_list.sort()
print("After sorting",my_list)
```

```
User@DESKTOP-FF8I8GD MINGW64 ~/Documents/ds lab/week2_exer (main)
$ python p3.py
3
2
Before Sorting [10, 20, 30, 19, 0, 40, 19]
After sorting [0, 10, 19, 19, 20, 30, 40]
```

7. Consider the tuple(1,3,5,7,9,2,4,6,8,10). Write a program to print half its values in one line andthe other half in the next line.

```
data=(1,3,5,7,9,2,4,6,8,10)
```

```
for i in range(0,len(data)//2):
        print(data[i],end=' ')
print()

for i in range(len(data)//2,len(data)):
        print(data[i],end=' ')
print()
```

```
User@DESKTOP-FF8I8GD MINGW64 ~/Documents/ds lab/week2_exer (main)
$ python p3.py
1 3 5 7 9
2 4 6 8 10
```

8 Consider the tuple (12, 7, 38, 56, 78). Write a program to print another tuple whose values areeven number in the given tuple.

```
data=(12,7,38,56,78)
even=tuple(x for x in data if x%2==0)
print("this is new even numbered list: ",even)
```

```
User@DESKTOP-FF8I8GD MINGW64 ~/Documents/ds lab/week2_exer (main)
$ python p3.py
this is new even numbered list:  (12, 38, 56, 78)
```

9. Write a Python program to print negative Numbers in a List using for loop. Eg. [11, −21, 0, 45,66, −93].

```
list=[11,-21,0,45,66,-93]
```

```
for x in list:
        if x<0:
                print(x)
```

```
User@DESKTOP-FF8I8GD MINGW64 ~/Documents/ds lab/week2_exer (main)
$ python p3.py
-21
-93
```

10. Write a program to print negative Numbers in a List using while loop.

```
list=[11,-21,0,45,66,-93]
length=len(list)
i=0
while(i<length):
        if list[i]<0:
          print(list[i])
        i+=1
```

```
User@DESKTOP-FF8I8GD MINGW64 ~/Documents/ds lab/week2_exer (main)
$ python p3.py
-21
-93
```

11 Write a Python program to count positive and negative numbers in a List

```
list=[11,-21,0,45,66,-93]

length=len(list)
```

```
c1,c2=0,0
i=0
while(i<length):
        if(list[i]<0):
         c1+=1;
        else:
                c2+=1
        i+=1
print("List is",list)
print("Odd count is {}".format(c1))
print("Even count is {}".format(c2))
```

```
User@DESKTOP-FF8I8GD MINGW64 ~/Documents/ds lab/week2_exer (main)
$ python p3.py
List is [11, -21, 0, 45, 66, -93]
Odd count is 2
Even count is 4
```

12. Write a Python program to remove all even elements from a list

```
list=[11,-21,0,45,66,-93]

for x in list:
        if x%2==0:
                list.remove(x)
print("After removal",list)
```

```
User@DESKTOP-FF8I8GD MINGW64 ~/Documents/ds lab/week2_exer (main)
$ python p3.py
After removal [11, -21, 45, -93]
```

13. Define a dictionary containing Students data {Name, Height, Qualification}.

    a) Convert the dictionary into DataFrame

    b) Declare a list that is to be converted into a new column (Address}
    Using 'Address' as the column name and equate it to the list and display the result

```
import pandas as pd

data = {'Name': ['Shreyas Kamath', 'Tom', 'Harry'],

'Height': [150, 150, 139],

'Qualification': ['BTech', 'MTECH', 'PhD']}

df = pd.DataFrame.from_dict(data)

addr_list = ['Banglore', 'HyderaBad', 'Kolkata']

df['Address'] = addr_list

print(df.head())
```

```
User@DESKTOP-FF8I8GD MINGW64 ~/Documents/ds lab/week2_exer (main)
$ python p4.py
             Name  Height Qualification    Address
0  Shreyas Kamath     150         BTech   Banglore
1             Tom     150         MTECH  HyderaBad
2           Harry     139           PhD    Kolkata
```

14. Define a dictionary containing Students data {Name, Height, Qualification}.

    a. Convert the dictionary into DataFrame

b. Use DataFrame.insert() to add a column and display the result.

```
import pandas as pd
data = {'Name': ['Shreyas Kamath', 'Tom', 'Harry'],

'Height': [150, 150, 139],

'Qualification': ['BTech', 'MTECH', 'PhD']}

df = pd.DataFrame.from_dict(data)

addr_list = ['Banglore', 'HyderaBad', 'Kolkata']

cols=[18,19,20]

df.insert(3,'Age',cols)
print(df.head())
```

```
User@DESKTOP-FF8I8GD MINGW64 ~/Documents/ds lab/week2_exer (main)
$ python p4.py
             Name  Height Qualification  Age
0  Shreyas Kamath     150         BTech   18
1             Tom     150         MTECH   19
2           Harry     139           PhD   20
```