WEEK - 1
Variables, Datatypes in Python

1) Write a program that returns the second last digit of the given number. Second last digit is being referred 10the digit in the tens place in the given number.

For example, if the given number is 197, the second last digit is 9.

Note1 - The second last digit should be returned as a positive number. i.e. if the given number is -197, the second last digit is 9.

Note2 - If the given number is a single digit number, then the second last digit does not exist. In such cases, the program should return -1. i.e. if the given number is 5, the second last digit should be returned as -1

Input	Result
197	9
-197	9
5	-1

PROGRAM :

```
num=int(input())
s=str(num)
If(len(s)==1):
        print("-1")
else:
        print(s[len(s)-2])
```

2)In a Lab 36% are Dell and 34% Lennovo and 28% are Acer and 2% are Samsung. write a python code to print total systems and brand wise count in the specific format using sep operator.

Input	Result

150	Total System:150 Dell:54 Lennovo:51 Acer:42 Samsung:3

PROGRAM :

```
n=int(input())
print("Total System:",n,sep='')
print("Dell:",int(n*0.36)sep='')
print("Lennovo:",int(n*0.34)sep='')
print("Acer:",int(n*0.28)sep='')
print("Samsung:",int(n*0.02)sep='')
```

3) In many jurisdictions, a small deposit is added to drink containers to encourage people to recycle them. In one particular jurisdiction, drink containers holding one liter or less have a $0.10 deposit and drink containers holding more than one liter have a $0.25 deposit. Write a program that reads the number of containers of each size(less and more) from the user. Your program should continue by computing and displaying the refund that will be received for returning those containers. Format the output so that it includes a dollar sign and always displays exactly two decimal places.

For example:

Input	Result
20 20	Your total refund will be $7.00.

PROGRAM:

```
n=int(input())
n1=int(input())
```

```
ref=n*0.10+n1*0.25
print("Your total refund will be $%.2f"%(ref))
```

4) Alfred buys an old scooter for Rs. X and spends Rs. Y on its repairs. If he sells the scooter for Rs. Z (Z>X+Y). Write a program to help Alfred to find his gain percent. Get all the above-mentioned values through the keyboard and find the gain percent.

Input Format:

The first line contains the Rs X

The second line contains Rs Y

The third line contains Rs Z

For example:

Input	Result
45500 500 60000	30.43 is the gain percent.

PROGRAM :

```
cost = int(input())
rep=int(input())
val=int(input())
co=cost+rep
gain=((val-co)/co*100)
print("%.2f is the gain percent."%(gain))
```

5) You went on a tour to Ooty with your friends. As a part of the tour, you went boating with them. For the boat to remain stable, the number of people on one boat is restricted based on the weight of the people. You find that the boatman who is sailing your boat is so much greedy of money. For earning more, he takes too many people to travel in the boat at a time. So you want to check how

many people can travel in the boat at a time so that the boat will not drown. Calculate the weight by considering the number of adults and number of children. Assume that an adult weighs 75 kg and children weigh 30 kg each. If the weight is normal, display Boat is stable, else display Boat will drown.

Input Format:

Input consists of 3 integers. First input corresponds to the weight that the boat can handle. Second input corresponds to the number of adults. Third input corresponds to the number of children.

Input	Result
340 2 3	Boat is stable

PROGRAM :

```
wt =int(input())
ad=int(input())
ch=int(input())
tot=ad*75 + ch*30
if tot<=wt:
        print(“Boat is stable”)
else:
        print(“Boat will drow”)
```

6) In a Logistic the Parcels to be delivered in 4 locations (1st locaion 20%, 2nd location 40%, 3rd location 30% and 4th location 10%). write a python code to find the total no. of parcels after the delivery in 2 locations . use a format() to print the no of parcels delivered in in each location

Input	Result

250	Total Parcels is 250 1st Location 50 parcels 2nd Location 100 parcels 3rd Location 75 parcels 4th Location 25 parcels

```
n=int(input())
print("Total Parcels is",n)
print("1st Location",int(n*0.20),"parcels")
print("2nd Location",int(n*0.40),"parcels")
print("3rd Location",int(n*0.30),"parcels")
print("4th Location",int(n*0.10),"parcels")
```

7) Write a program to convert strings to an integer and float and display its type.

Input	Result
10 10.9	10,<class 'int'> 10.9,<class 'float'>

PROGRAM :

```
n=int(input())
n1=float(input())
print(n,type(n))
print(n1,type(n1))
```

8) Ramesh's basic salary is input through the keyboard. His dearness allowance is 40% of his basic salary, and his house rent allowance is 20% of his basic salary. Write a program to calculate his gross salary.

For example:

Input	Result
10000	16000

PROGRAM :

```
n=int(input())
da=n*.4
gp=n*.20
print(int(n+da+gp))
```

9) In department 54% are boys and 46% are girls and 8% are hostel (boys/girls). write a python code to print total no of boys, girls and hostel students in the specific format using modulo operator.

Input	Result
1500	Total Students : 1500, Boys : 810, Girls : 690, Hostel : 120

10) Justin is a carpenter who works on an hourly basis. He works in a company where he is paid Rs 50 for an hour on weekdays and Rs 80 for an hour on weekends. He works 10 hrs more on weekdays than weekends. If the salary paid for him is given, write a program to find the number of hours he has worked on weekdays and weekends.

Hint:

If the final result(hrs) are in -ve convert that to +ve using abs() function

The abs() function returns the absolute value of the given number.

Input	Result
450	weekdays 10.38 weekend 0.38

PROGRAM :

```
s=int(input())
e=abs((s-500)/130)
d=e+10
print(“weekdays %.2f”%(d))
print(“weekend %.2f%(e))
```