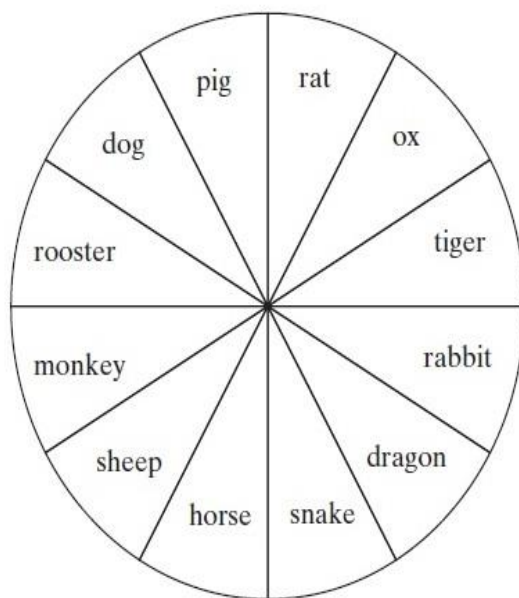


Python Assignment - 1

1. Develop a code for below scenario



year % 12 = {
0: monkey
1: rooster
2: dog
3: pig
4: rat
5: ox
6: tiger
7: rabbit
8: dragon
9: snake
10: horse
11: sheep

```
>>> n=int(input('enter year'))  
enter year2012  
>>> if n%12==0:  
...   print('monkey')  
... elif n%12==1:  
...   print('rooster')  
... elif n%12==2:  
...   print('dog')  
... elif n%12==3:  
...   print('pig')
```

```
... elif n%12==4:
...     print('rat')
... elif n%12==5:
...     print('ox')
... elif n%12==6:
...     print('tiger')
... elif n%12==7:
...     print('rabbit')
... elif n%12==8:
...     print('dragon')
... elif n%12==9:
...     print('snake')
... elif n%12==10:
...     print('horse')
... elif n%12==1:
...     print('sheep')
...
dragon
>>>
```

2Q)A Quick Fox Transport Co. wants to develop an application for calculating amount based on distance and weight of goods. The charges (Amount) to be calculated as per rates given below.

Distance	Weight	Charges per Km.
>=500 Km	>=100 kg.	Rs. 5/-
	>=10 and <100 kg.	Rs. 6/-
	< 10 kg.	Rs. 7/-
<500 Km	>=100 Kg.	Rs.8/-
	<100 Kg.	Rs.5/-

Input: Distance to be travel: 520

Weight of the goods: 50

Output: Amount to be charged: 3120 /-

```
>>> d=int(input('enter distance travelled'))
enter distance travelled520
>>> weight=int(input('enter weight of goods'))
enter weight of goods50
>>> if(d>=500):
...   if(weight>=100):
...     amount=d*5
...   elif(weight>=10 and weight<100):
...     amount=d*6
...   elif(weight<10):
...     amount=d*7
... elif(d<500):
...   if(weight>=100):
...     amount=d*8
```

```
... elif(weight<100):
```

```
...     amount=d*5
```

```
...
```

```
>>> print(amount)
```

```
3120
```

```
>>>
```

```
3)
```

The Entertainment Paradise

A theater in Delhi wants to develop a computerized Booking System. The theater offers different types of seats. The Ticket rates are- Stalls- Rs. 625/-, Circle- Rs.750/-, Upper Class- Rs.850/- and Box- Rs.1000/-. A discount is given 10% of total amount if tickets are purchased on Cash. In case of credit card holders 5% discount is given.

Input: Type of Seat: Circle

Payment mode: cash

Output: Cost of ticket: 675

```
>>> seattype=input('enter type of seat')
```

```
enter type of seatcircle
```

```
>>> payment mode=input('enter payment mode')
```

```
>>> paymentmode=input('enter payment mode')
```

```

enter payment modecash
>>> ic=int(input('enter initial cost of circle seat'))
enter initial cost of circle seat750
>>> if(paymentmode=='cash' and seattype=='circle'):
...   fc=ic-(ic*10/100)
... elif(paymentmode=='credit' and seattype=='circle'):
...   fc=ic-(ic*5/100)
...
>>> print(fc)
675.0
>>> int(fc)
675
>>>

```

4) Develop a program that calculates the energy needed to heat water from an initial temperature to a final temperature. Your program should prompt the user to enter the amount of water in kilograms and the initial and final temperatures of the water. The formula to compute the energy is

$$Q = M * (\text{finalTemperature} - \text{initialTemperature}) * 4184.$$

where **M** is the weight of water in kilograms, temperatures are in degrees Celsius, and energy **Q** is measured in joules.

```
>>> weight=int(input('enter weight of water in kg'))
enter weight of water in kg40
>>> i=int(input('enter initial tempurate in celsius'))
enter initial tempurate in celsius20
>>> l=int(input('enter final tempurate in celsius'))
enter final tempurate in celsius35
>>> q=weight*(l-i)*4184
>>> print(q)
2510400
>>>
```

5)

Develop a program that prompts user to enter month and print

- a. “Winter ” - December ,January and February**
- b. “Spring” - March ,April and May**
- c. “summer”- June, July, August**
- d. “Autumn”- October, September, November**

```
>>> month=input('enter month')
enter month'winter'
>>> if(month=='winter'):
... print("December, January and February")
... elif(month=='spring'):
... print("March, April and May")
... elif(month=='summer'):
```

```
... print("June ,July, August")
... elif(month=='autumn'):
...     print("__ september,October, November")
...
December, January and February
>>
```

6) write a program that prompts the user to enter weight in pounds and height in inches and displays the BMI

```
>>> weight=int(input('enter your weight in kg'))
enter your weight in kg46
>>> height=float(input('enter your height in inches'))
enter your height in inches5.7
>>> height=float(height*0.0254)
>>> weight=float(weight*0.45359237)
>>> weight
0.529977325108
>>> height
0.14478
>>> Bmi=round(weight/height**2)
>>> Bmi
25
>>> if(Bmi<18.5):
...     print('underweight')
... elif(18.5<=Bmi<=25.5):
```

```

... print('Normal')
... elif(25.5<=Bmi<=30.0):
...     print('Overweight')
... elif(30.0<=Bmi):
...     print('obese')
...

```

Normal

```
>>>
```

**7) Write a program that reads an integer between 100 and 1000 and adds all the digits in the integer (ex: input 745 #
output =16 (7+4+5))**

```
>>> n=int(input('enter a number'))
```

enter a number745

```
>>> sum=0
```

```
>>> if(n>=100 and n<=1000):
```

```
...     while(n>0):
```

```
...         riv=n%10
```

```
...         sum=sum+riv
```

```
...         n=n// 10
```

```
...
```

```
>>> print(sum)
```

16

```
>>>
```

```
>>
```


10) Write a Java program which iterates the integers from 1 to 100. For multiples of three print "Fizz" instead of the number and print "Buzz" for the multiples of five. When number is divided by both three and five, print "fizz buzz".

```
>>> for i in range(1,100):
...     if(i%3==0 and i%5==0):
...         print("Fizz Buzz")
...     elif(i%3==0):
...         print("Fizz")
...     elif(i%5==0):
...         print("Buzz")
...     else:
...         print(i)
...
1
2
Fizz
4
Buzz
Fizz
7
8
```

Fizz

Buzz

11

Fizz

13

14

Fizz Buzz

16

17

Fizz

19

Buzz

Fizz

22

23

Fizz

Buzz

26

Fizz

28

29

Fizz Buzz

31

32

Fizz

34

Buzz

Fizz

37

38

Fizz

Buzz

41

Fizz

43

44

Fizz Buzz

46

47

Fizz

49

Buzz

Fizz

52

53

Fizz

Buzz

56

Fizz

58

59

Fizz Buzz

61

62

Fizz

64

Buzz

Fizz

67

68

Fizz

Buzz

71

Fizz

73

74

Fizz Buzz

76

77

Fizz

79

Buzz

```
Fizz
82
83
Fizz
Buzz
86
Fizz
88
89
Fizz Buzz
91
92
Fizz
94
Buzz
Fizz
97
98
Fizz
>>>
>>>
```

8) Print all palindrome numbers between 1 to 1000.

```
>>> max=int(input('enter max value'))
enter max value1000
```

```
>>> for num in range(1,max):
```

```
...     temp=num
```

```
...     sum=0
```

```
...     while(temp>0):
```

```
...         riv=temp%10
```

```
...         sum=(sum*10)+riv
```

```
...         temp=temp //10
```

```
...         if(num==sum):
```

```
...             print(num)
```

```
...
```

```
1
```

```
2
```

```
3
```

```
4
```

```
5
```

```
6
```

```
7
```

```
8
```

```
9
```

```
11
```

```
22
```

```
33
```

```
44
```

```
55
```

66

77

88

99

101

111

121

131

141

151

161

171

181

191

202

212

222

232

242

252

262

272

282

292

303

313

323

333

343

353

363

373

383

393

404

414

424

434

444

454

464

474

484

494

505

515

525

535

545

555

565

575

585

595

606

616

626

636

646

656

666

676

686

696

707

717

727

737

747

757

767

777

787

797

808

818

828

838

848

858

868

878

888

898

909

919

929

939

949

959

969

979

989

999

9) Print all Armstrong numbers between 1 to 1000.

```
>>> max=int(input('enter the max range'))
```

```
enter the max range1000
```

```
>>>
```

```
>>> for n in range(1,max):
```

```
...     sum=0
```

```
...     temp=n
```

```
...     while(temp>0):
```

```
...         riv=temp%10
```

```
...         sum=sum+riv**3
```

```
...         temp=temp //10
```

```
...         if(n==sum):
```

```
...             print(n)
```

```
...
```

```
1
```

```
64
```

```
125
```

```
153
```

```
216
```

```
370
```

```
371
```

```
407
```

```
729
```

```
>>>
```

11) Spider Problem: A spider present at the bottom of the well of height H , needs to get out of it, using the slippery wall of the well. It decides to climb up the well; it goes up U meters and slips down D meters in one single step. So, in each step it covers $(U-D)$ meters, and if the spider gets out of the well by covering U meters in the last step it doesn't slip back. For example, if the spider climbs up 5 meters and slips down by 3 meters in a single step, it covers $(U - D)$ m in each step and 96 m in 48 steps, but in the 49th step it climbs up 5 m and reaches out of the well and it will not slip down and the step is counted as one step.

```
>>> h=int(input('enter the height of well'))
enter the height of well200
>>> u=int(input('enter the distance it goes'))
enter the distance it goes50
>>> d=int(input('enter the distance it slips'))
enter the distance it slips15
>>> dist=0
>>> step=0
>>> while(True):
...     dist=dist+u
...     step=step+1
...     if(dist>h):
...         break
...     dist=dist-d
...
>>> print(step)
```

7

>>>