Python If ... Else Exercises

1.
A company decided to give bonus of 5% to employee if his/her year of service is more than 5 years.
Ask user for their salary and year of service and print the net bonus amount.

Solution:

```
print "Enter salary"
salary = input()
print "Enter year of service"
yos = input()
if yos>5:
  print "Bonus is",.05*salary
else:
  print "No bonus"
```

2.
Take values of length and breadth of a rectangle from user and check if it is square or not.

Solution:

```
print "Enter length"
length = input()
print "Enter breadth"
breadth = input()
if length == breadth:
  print "Yes, it is square"
else:
  print "No, it is only Rectangle"
```

3.
Take two int values from user and print greatest among them.

Solution:

```
print "Enter first number"
first = input()
print "Enter second number"
second = input()
if first>second:
  print "Greatest is",first
elif second>first:
  print "Greatest is",second
else:
  print "Both are equal"
```

4.
A school has following rules for grading system:
a. Below 25 - F
b. 25 to 45 - E
c. 45 to 50 - D
d. 50 to 60 - C
e. 60 to 80 - B
f. Above 80 - A
Ask user to enter marks and print the corresponding grade.

Solution:

```
print "Enter first age"
first = input()
print "Enter second age"
second = input()
print "third age"
third = input()

if first >= second and first >= third:
  print "Oldest is",first
elif second >= first and second >= third:
  print "Oldest is",second
elif third >= first and third >= second:
  print "Oldest is",third
else:
  print "All are equal"
```

5.
Take input of age of 3 people by user and determine oldest and youngest among them.

Solution:

```
print "Enter first age"
first = input()
print "Enter second age"
second = input()
print "third age"
third = input()

if first >= second and first >= third:
  print "Oldest is",first
elif second >= first and second >= third:
  print "Oldest is",second
elif third >= first and third >= second:
  print "Oldest is",third
else:
  print "All are equal"
```

6.
Write a program to print absolute vlaue of a number entered by user. E.g.-
INPUT: 1 OUTPUT: 1
INPUT: -1 OUTPUT: 1

Solution:

```
print "Enter a number"
number = input()
if number<0:
  print number*-1
else:
  print number
```

8.
A student will not be allowed to sit in exam if his/her attendence is less than 75%.
Take following input from user
Number of classes held
Number of classes attended.
And print
percentage of class attended
Is student is allowed to sit in exam or not.

Solution:

```
print "Number of classes held"
noh = input()
print "Number of classes attended"
noa = input()
atten = (noa/float(noh))*100
print "Attendence is",atten
if atten >= 75:
  print "You are allowed to sit in exam"
else:
  print "Sorry, you are not allowed. Attend more classes from next time."
```

8.

Modify the above question to allow student to sit if he/she has medical cause. Ask user if he/she has medical cause or not ('Y' or 'N') and print accordingly.

Solution:

```
#Hint only
#Do it yourself
if medical_cause == 'Y':
  print "You are allowed"
else:
  if atten>=75:
    print "Allowed"
  else:
    print "Not allowed"
```

9.

Find out the number is odd or even

Solution:

```
if x % 2==0:
    print("Even")
else:
    print("Odd")
```

10.

Let us start by checking if the triangle is equilateral.

Solution:

```
if x==y and x==z:
    print ("Equilateral")
elif x==y or x==z or y==z:
    print ("Isosceles")
else:
    print("Obtuse")
```

11.

Write a program to check whether a person is eligible for voting or not. (accept age from user)

Solution:

```
age=int(input("Enter your age"))
if age >=18:
        print("Eligible for voting")
else:
        print("not eligible for voting")
```

12.

Write a program to check whether a number entered by user is even or odd.

Solution:

```
num=int(input("Enter your age"))
if num%2==0:
        print("Number is Even")
else:
        print("Number is Odd")
```

13. Write a program to check whether a number is divisible by 7 or not.

```
num=int(input("Enter your age"))
if num%7==0:
        print("Number is divisible")
else:
        print("Number is not divisible")
```

14.
Write a program to display "Hello" if a number entered by user is a multiple of five , otherwise print "Bye".

Solution:

```
num=int(input("Enter your age"))
if num%5==0:
        print("Hello")
else:
        print("Bye")
```

15.
Write a program to calculate the electricity bill (accept number of unit from user) according to the following criteria :

Unit	Price
First 100 units	no charge
Next 100 units	Rs 5 per unit
After 200 units	Rs 10 per unit

(For example if input unit is 350 than total bill amount is Rs2000)

Solution:

```
amt=0
nu=int(input("Enter number of electric unit"))
if nu<=100:
        amt=0
if nu>100 and nu<=200:
        amt=(nu-100)*5
if nu>200:
        amt=500+(nu-200)*10
print("Amount to pay :",amt)
```

16.
Write a program to accept percentage from the user and display the grade according to the following criteria:

Marks	Grade
> 90	A
> 80 and <= 90	B
>= 60 and <= 80	C
below 60	D

Solution:

```
per = int(input("Enter marks"))
if per > 90:
        print("Grade is A")
if per > 80 and per <=90:
        print("Grade is B")
if per >=60 and per <= 80:
        print("Grade is C")
if per < 60:
        print("Grade is D")
```

17.
Write a program to accept the cost price of a bike and display the road tax to be paid according to the following criteria :

Solution:

Cost price (in Rs)	Tax
> 100000	15 %
> 50000 and <= 100000	10%
<= 50000	5%

```
tax = 0
pr=int(input("Enter the price of bike"))
if pr > 100000:
    tax = 15/100*pr
elif pr >50000 and pr <=100000:
    tax = 10/100*pr
else:
    tax = 5/100*pr
print("Tax to be paid ",tax)
```

18.
Write a program to check whether an years is leap year or not.

Solution:

```
yr=int(input("Enter the year:"))
if yr%100==0 and yr%400==0:
        print("Entered year is leap year")
elif yr%4==0:
   print("Enter year is leap year")
else:
        print("Entered year is not a leap year")
```

19.
Write a program to accept a number from 1 to 7 and display the name of the day like 1 for Sunday , 2 for Monday and so on.

Solution:

```
num=int(input("Enter any number between 1 to 7 : "))
if num==1:
   print("Sunday")
elif num==2:
   print("Monday")
elif num==3:
   print("Tuesday")
elif num==4:
  print("Wednesday")
elif num==5:
  print("Thursday")
elif num==6:
  print("Friday")
elif num==2:
  print("Saturday")
else:
  print("Please enter number between 1 to 7")
```

20.
Accept any city from the user and display monument of that city.

City	Monument
Delhi	Red Fort
Agra	Taj Mahal
Jaipur	Jal Mahal

Solution:

```
city = input("Enter name of the city")
if city.lower()=="delhi":
    print("Monument name is : Red Fort")
elif city.lower()=="agra":
    print("Monument name is : Taj Mahal")
elif city.lower()=="jaipur":
    print("Monument name is : Jal Mahal")
else:
print("Enter correct name of city")
```

21.
Write a program to check whether a person is eligible for voting or not.(voting age >=18)

Solution:

```
age=int(input("Enter your age"))
if age >=18:
        print("Eligible for Voting")
else:
        print("Not eligible for voting")
```

22.
Write a program to check whether a person is senior citizen or not.

Solution:

```
age=int(input("Enter your age"))
if age >=60:
        print("Senior Citizen")
else:
        print("Not a Senior Citizen")
```

23.

Write a program to find the lowest number out of two numbers excepted from user.

Solution:

```
num1 = int(input("Enter first number"))

num2 = int(input("Enter second number"))

if num1 > num2:

        print("smaller number is :", num2)

else:
```

```
    print("smaller number is :", num1)
```

24.

Write a program to check whether a number (accepted from user) is positive or negative.

num1 = int(input("Enter first number"))

Solution:

```
if num1 > 0 :
    print("Number is positive")
else:
    print("Number is negative")
```

25.

Write a program to whether a number (accepted from user) is divisible by 2 and 3 both.

Solution:

```
num1 = int(input("Enter first number"))
if num1%2==0 and num1%3==0:
    print("Number is divisible by 2 and 3 both")
else:
    print("Number is not divisible by both")
```

27.

Write a program to find the largest number out of three numbers excepted from user.

Solution:

```
num1 = int(input("Enter first number"))
num2 = int(input("Enter second number"))
num3 = int(input("Enter third number"))
if num1 > num2 and num1 > num3:
    print("Greatest number is ", num1)
if num2 > num1 and num2 > num3:
    print("Greatest number is ", num2)
if num3 > num2 and num3 > num1:
    print("Greatest number is ", num3)
```

28.

Accept the age of 4 people and display the youngest one?

Solution:

```
age1=int(input("Enter age of first person"))
age2=int(input("Enter age of second person"))
age3=int(input("Enter age of third person"))
age4=int(input("Enter age of fourth person"))
if age1 < age2 and age1 < age3 and age1 < age4:
        print("Age of oldest person is ",age1)
if age2 < age1 and age2 < age3 and age2 < age4:
        print("Age of oldest person is ",age2)
if age3 < age2 and age3 < age1 and age3 < age4:
        print("Age of oldest person is ",age3)
if age4 < age1 and age4 < age2 and age4 < age3:
        print("Age of oldest person is ",age4)
```

29.

Write a program to check whether a number is prime or not.

Solution:

```
k=0 num1 = int(input("Enter any number"))
if num1 == 0 or num1 == 1:
        k=1
for i in range(2,num1):
        if num1%i == 0:
        k = 1
if k==1:
         print("number is not prime")
else:
        print("number is prime")
```

30.

Write a program to check a character is vowel or not.

Solution:

```
ch=input("Enter any character")
vow="aeiouAEIOU"
if ch in vow:
    print("Entered character is vowel")
else:
    print("Entered character is not vowel")
```

31.
Accept the following from the user and calculate the percentage of class attended:
a. Total number of working days
b. Total number of days for absent
After calculating percentage show that, If the percentage is less than 75, than student will not be able to sit in exam.

Solution:

```
nd = int(input("Enter total number of working days"))
na = int(input("Enter number of days absent"))
per=(nd-na)/nd*100
print("Your attendance is ",per)
if per <75 :
    print("You are not eligible for exams")
else:
    print("You are eligible for writing exam")
```

32.

Accept the percentage from the user and display the grade according to the following criteria:

- Below 25 —- D
- 25 to 45 —- C
- 45 to 50 —- B
- 50 to 60 — B+
- 60 to 80 — A
- Above 80 –- A+

Solution:

```
per = int(input("Enter percentage"))
```

```
if per> 80:
        print("Grade is A+")
elif per >60 and per <=80:
        print("Grade is A")
elif per > 50 and per <=60:
        print("Grade is B+")
elif per > 45 and per <=50:
         print("Grade is B")
elif per > 25 and per <=45:
        print("Grade is C")
elif per <25:
        print("Grade is D")
```

33.
A company decided to give bonus to employee according to following criteria:

Time period of Service	Bonus
More than 10 years	10%
>=6 and <=10	8%
Less than 6 years	5%

Ask user for their salary and years of service and print the net bonus amount.

Solution:

```
ser=int(input("Enter the time period of service"))
sal =int(input("Enter your salary"))
if ser > 10:
        b=10/100*sal
if ser >=6 and ser <=10:
        b = 8/100*sal
if ser < 6:
        b = 5/100*sal
print("Bonus is ", b)
```

34.

Accept the marked price from the user and calculate the Net amount as(Marked Price – Discount) to pay according to following criteria:

Marked Price	Discount
>10000	20%
>7000 and <=10000	15%
<=7000	10%

Solution:

```
na=0 d=0
mp=int(input("Enter marked price"))
if mp > 10000:
        d = 20/100*mp
if mp > 7000 and mp <= 10000:
        d = 15/100*mp
if mp <= 7000:
        d = 10/100*mp
na = mp-d
print("Net amount to pay ", na)
```

35.

Write a program to accept percentage and display the Category according to the following criteria :

Percentage	Category
< 40	Failed
>=40 & <55	Fair
>=55 & <65	Good
>=65	Excellent

Solution:

```
pr = int(input("Enter the percentage"))
if pr < 40:
        print("Your Category is: Failed")
elif pr >= 40 and pr < 55:
```

```
        print("Your Category is: Fair")
elif pr >=55 and pr < 65:
        print("Your Category is: Good")
elif pr >= 65 and pr<=100:
        print("Your Category is: Excellent")
elif pr >100:
        print("Please enter correct percentage")
```

36.

Write a program to accept two numbers and mathematical operators and perform operation accordingly.

Like:

```
Enter First Number: 7
Enter Second Number : 9
Enter operator : +
Your Answer is : 16
```

Solution:

```
num1=int(input("Enter first number"))
num2=int(input("Enter second number"))
op=input("Enter mathematical operator")
if op=='+':
        print("Result is ", num1+num2)
if op=='-':
        print("Result is ", num1-num2)
if op=='*':
        print("Result is ", num1*num2)
if op=='/':
        print("Result is ", num1/num2)
if op=='%':
        print("Result is ", num1%num2)
if op=='**':
        print("Result is ", num1**num2)
if op=='//':
        print("Result is ", num1//num2)
```

37.

Accept the age, sex (‘M’, ‘F’), number of days and display the wages accordingly

Age	Sex	Wage/day
>=18 and <30	M	700
	F	750
>=30 and <=40	M	800
	F	850

If age does not fall in any range then display the following message: “Enter appropriate age”

Solution:

```
age=int(input("Enter your age"))
sex=input("Enter sex(M/F) ")
nd = int(input("Enter number of days"))
if age >=18 and age < 30 and sex.upper( ) == 'M':
        amt = nd*700
        print("Total wages is : ", amt)
elif age >=18 and age < 30 and sex.upper( ) == 'F':
        amt = nd*750
        print("Total wages is : ", amt)
elif age >=30 and age <= 40 and sex.upper( ) == 'M':
        amt = nd * 800
        print("Total wages is : ", amt)
elif age >=30 and age <= 40 and sex.upper( ) == 'F':
        amt = nd * 850
        print("Total wages is : ", amt)
else:
        print("Enter appropriate age")
```

**********Happy Programming !!! **********