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Write a program accept empno, ename, job, Salary and calculate bonus based on the following conditions ? (20% on annual salary)

input block
Processing block (calculate)
output block

* default format is String

```
empno = int(input("Enter employee number : "))
ename = input("Enter employee name : ")
ejob = input("Enter employee job : ")
esal = float(input("Enter employee salary : "))

ann-sal = esal * 12
bonus = ann-sal * 20/100

Print("\t\t Employee Bonous Report")
Print("-" * 50)  # 50 times - - -
Print("\t Employee number :", empno)
Print("\t " " name :", ename)
Print("\t " " job :", ejob)
Print("\t " " salary", esal)
Print("\t Annual " " ", ann-sal)
Print("\t employee bonous", bonous)
Print("-" * 50)
```

Operators:-

1. Arithemic operators.

+ , - , * , / , % Reminder
// → floor division
** → exponentiation (This has higher Preference than Division)

PEDMAS

R-L L-R

2.5

① Print(10+8) = 18
Print(10-8) = 2
Print(10*8) = 80

② 10/4 = 2.5
10/6 = 1.6666
10/5 = 2.0
10.4/4.0 = 2.5

10//4 = 2 → Value or floor division
10//6 = 1
10//5 = 2
10.4//4.0 = 2

Reminder

③ 10%3 = 1
10%6 = 4
10%5 = 0

④ 2**3 = 2^3 = 8
8**0 = 8^0 = 1

(5) $8**1/3 = 8^{1/3} = 2/3 = 2.66666$

$8**(1/3) = 8^{1/3} = \sqrt[3]{8} = 2$

(6) $2**3**2 = 2**3^{2} \Rightarrow 2**9 = 2^{9} = 512$

$\leftarrow$ R $\rightarrow$ L

$(2**3)**2 = 2^{3}**2 = 8**2 = 64$

Relational operators

<, >, <=, >=, ==, !=

== equal operator

(1) $10 > 3 \Rightarrow T$

$10 < 3 \Rightarrow F$

(2) $10 == 10 \Rightarrow T$

$10 != 10 \Rightarrow F$

(3) "tecno" == "tecno" $\Rightarrow T$

"tecno" == "Techo" $\Rightarrow F$ (case sensitive)

(4) "tecno" > "harika" $\Rightarrow T$

strings checks if one by one character

if first character is big then it will give result and if same then it will go ahead for checking next character like this.

(1)

(2)

ASCII Values

0 - 9 → 48 - 57
A - Z → 65 - 90
a - z → 97 - 122

x = '8'
print(ord(x))
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Logical operators

and, or, not

exp1	exp2	and	Or
T	T	T	T
T	F	F	T
F	T	F	T
F	F	F	F

Not True ⇒ False
not False ⇒ True

Assigment operator (=)

(1) a=100 b=2.35 C='Python'

or

a, b, C = 100, 2.35, 'Python'

(2) a, b, C = 10, 20, 30

a, b, C = 10, 20, 30, 40 ✗

a, b, C = 10, 20 ✗

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⑧ a=10
b=10
c=10
or a=b=c=10

Short hand of assignment operators

+= a=10
-= a=a+5
*= or a+=5
/= ⇒ total_marks=530
%= // =total_marks+10
//= or // .+ =10
**=

membership operators

(1) in
(2) not in
x="Python is simple and easy to learn"

(1) "easy" in x ⇒ T
"hard" in x ⇒ F
"on" in x ⇒ T
"a" in x ⇒ T
"Unix" not in x ⇒ T

Note⇒ It will check char by character in continuously.

⑦ Identity operators

(1) is (2) is not

a=10, b=10 c=a d=20

Print(id(a), id(b), id(c), id(d))

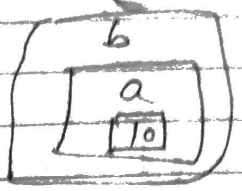
a is b ⇒ T

a is c ⇒ T

a is d ⇒ F

b=18

a is b ⇒ F



in memory

* ~~Alignment~~ Alignment is very important in Python.

None is used in Python.

Null is used in shell script.

Data types in python are divided into 2 categories.

1. Immutable data types → values can not be changed.
2. Mutable data types → values can be changed.

Immutable data types:-

(a) Numbers

(b) Strings

(c) Tuple

Mutable Data types:-

(a) List

(b) Dictionaries

(c) Sets

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Control statements :-

⇒ Decission control statements.
⇒ Looping control statements.

Decission C.S (if)

1. Simple if
2. if ... else
3. if ..... elif
4. Nested if ... else
5. Single if statement

Simple if

minimum 4 TAB spaces are required in a block.

if condition:
    here minimum 4 spaces ⟹ blocks or suite

(2) if ... else

if condition:

else:

(3) if .. elif

if condition1:

elif condition2:

elif condition n:

else:

Nested if...else

if condition:
    if condition:
        if condition:
            statement
        else:
    else:
else:

if checking more than one conditions and all are true then it is nested if

Single if statement

if condition: statement1 (in a single line)

WAP accept integer number & check the given number is even or odd.

```
n=(int(input("Enter number:")))
if n%2==0:
    Print("n," is an even number")
else:
    print("n," is an odd number")
```

WAP accept integer number and check the given number is 3 digit number or not.

⇒ abs(-n) takes -ve number and output is +ve nos.

if n>=100 and n<=999

⇒ if abs(n)//100 and abs(n)<=999:
    Print(n," n is a 3 digit number")
else:
    Print(n," is not a 3 digit number")

Truncate decimal using int()

```
import (random)
# WAP accept a string and a character and check
the given character exists in the given string
or not.
str = (input ("Enter a string:") # Technosoft
ch = input ("Enter character to find:") #S
of ch in str:
    Print ("Given char ", ch, " Present in",
           str, " string")
else:
    print(" Given Character", ch," not present
          in "; str, " string")
```

Login program.

```
uname = input("Enter username:")
Pwd = input ("Enter password:")
if uname == "techno" and Pwd = "sofg99,@":
    Print ("welcome to technosoft")
else:
    Print("invalid username or Password")
```

```
# WAP accept a value and check the value is
Palindrome or not
# 424, 121 Madam
x = input(" Enter number/string to check
                    Palindrome:")
if x == x[::-1]:
    Print (x," is a Palindrome")
else: Print (x, " is not a Palindrome")
```

WAP accept a number and check the given number is Perfect Square or not.

```
x=int(input("Enter number:"))
n= int (x**(1/2))
if x==n*n:
    Print (x," is a Perfect Square")
else:
    Print (x, "is not a Perfect Square")
```

Guess number

```
import random
n= random.randint(1,10)   # including
x= int(input("Take a guess [1-10]:"))
if x==n:
    Print("wow! Congrats, You guessed my number correctly...")
else: Print("Sorry, your guess was Wrong, I was thinking...",n)
```

WAP accept 2 nos and find greatest number.

```
a= int(input("Enter no. number 1:"))
b= int(input("Enter number 2:"))
if a!=b:
    if a>b:
        print(a,"is a big")
    else: print(b, "is a big")
else: print("Both nos. numbers are same")
```

WAP accept employee number, name, Job and salary and calculate bonus based on the following conditions

'''

Job	Bonus
Manager	20% on ann-sal
Analyst	15% "
Programmer	12% "
Salesman	10% "
others	5% "

'''

```
empno = int(input("Enter employee number:"))
ename = input("Enter employee name:")
ejob = input("Enter employee Job:")
esal = float(input("Enter employee salary"))
ann_sal = esal*12

if ejob="manager": bonous=ann_sal*20/100
elif ejob="analyst": bonous=ann_sal*15/100
elif ejob="programmer": bonous=ann_sal*12/100
elif ejob="salesman": bonous=ann_sal*10/100
print("\t\t Employee bonous report")
print("-"*50)
print("\t employee number:", empno)
print("\t  " "name:", ename)
print("\t  " "Job:", ejob)
print("\t  " "Salary:" %i esal)
print("\t Annual " ":", ann_sal)
print("\t employee Bonous:", bonous)
print("-"*50)
```

#1 if ... else assignments

1. WAP accept a string and check 'a' character exists in the given string are not

2. Write a script accept 2 no's and find greatest number

3. WAP accept a integer and check the given number is +ve or -ve no.

4. WAP accept a number and check the given number is multiple of 5 or not.

5. WAP accept a ~~set~~ integer ~~two~~ numbers and find greatest no.

#2 if elif Assignment

6 #1 WAP accept a number and check the given number is 1 digit or 2 digit or 3 digit or 4 digit number.

7 #1 WAP accept a character and check the given character is digit or vowel or consonant or special character

8 #1 WAP accept student, roll number, name and 3 subject marks and calculate result (pass marks 40), total marks, avg marks, grade based on following conditions and prepare progress report.

avg marks	Grade
7=90	A
7=80 and <90	B
7=70 and <80	C
7=60 and <70	D
7=50 and <60	E
<50	No grade

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WAP accept product no, Pname, Price, qty of Calculate total, discount based on the following conditions and net amount and prepare bill.

Total	Disc
>=10000	20% on total
>=5000 and <10000	10% on total
>=3000 and <5000	8% on tal
>=1000 and <3000	5% on total
<1000	3% on total

Prod_no = int(input("product no:"))
Prd_name = input("product name:")

#1
```
stri = input("Enter a string:")
ch = input("Enter a character:")
if ch in stri:
    Print(ch," is exist in the String:", Stri)
else:
    print(ch," is not exist in the given string:",stri)
```

#2
```
a = int(input("Enter the 1st no:"))
b = int(input("Enter the 2nd no:"))
if a>b:
    Print("1st no:",a," is greater than 2nd no:", b)
else:
    print("2nd no:", b," is greater than 1st no:",a)
```

#3
```
a = int(input("Enter a no:"))
if a>0:
    print("",a," is a +ve no.")
else: print("",a," is a -ve no.")
```

#4
```
a = int(input("Enter a no:"))
if a%5==0
    print("Entered no ",a," is a multiple of 5.")
else: print("Entered no ",a," is not multiple of 5")
```

#5
```
x = int(input("Enter 1st no:"))
y = int(input("Enter 2nd no"))
z = int(input("Enter 3rd no"))
if x>y:
    if x>z:
        print(x," is the greatest no amongst",x,y
              and",z)
    else:
        print(z," is the greatest no amongst",x,y,"
              and",z)
```

```
else:
    if y>z:
        print(y," is the greatest no among",x,y,"and",z)
    else:
        print(z," is the greatest no among",x,y,"and",z)
```

#6
```
x=int(input("Enter a no:"))
if x<10:
    Print(x," is a 1 digit no.")
elif x<100:
    Print(x," is a 2 digit no")
elif x<1000:
    print(x," is a 3 digit no")
else:
    Print(x," is a 4 digit no.")
```

#7
```
x=input("Enter a single char")
if len(x)>1:
    Print(x," is more than 1 char so Pls enter single char")
elif ord(x)>=48 and ord(x)<=57:
    Print(x," is a digit")
elif x=='A' or x=='E' or x=='I' or x=='O' or x=='U' or x=='a' or x=='e' or x=='i' or x=='o' or x=='u':
    Print(x," is a vowel")
elif ord(x)>=65 and ord(x)<=90:
    print(x," is a consonant")
elif ord(x)>=97 and ord(x)<=122:
    Print(x," is a consonant")
else: Print(x," is a special char")
```

* for loop works for list of values
  while loop works on condition : if condition is true, it will execute the statement otherwise it will terminate
* for variable in (→ this is keyword) (list of values):
  ≡
* while condition:
  (F ≡
  → Terminate
* for ... else: This is in Python
* while .... else:
* range(01, 10)
  including → Excluding
* Default lower limit is zero(0).
* range(start, end, step)
* for loop works on index based
  for i in ("Python")
  0 1 2 3 4 5
  Print(i)

  P
  y
  t
  h
  o
  n

* Print(i, end="")
  Print it HORizon like Python

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for i in 7489:
    it will give error as for loop works on Index
for in '7489': → it will work

# Print numbers fm 1 to 10
i=1
while i<=10:
    Print(i)
    i=i+1

# for i in (1,2,3,4,5,...10):
    Print(i)

# for i in range(1,11):
    Print(i)

# Print odd nos fm 1 to 100
i=1
while i<=100:
    Print(i)
    i=i+2

# for i in range(1,100,2):
    Print(i)

# for i in (345, 358, 458):
    Print(i)

# for i in ("Python", "unix", "oracle", "Django"):
    Print(i)

# for i in "Python":
    Print(i)

```
# for i in "python":
    Print(i, end=" ")

# for i in 7698:
    Print(i, end=" ")  # x TypeError.

# for i in "7698":
    print(i)
```

WAP Accept string and print string n times of its length.

```
x = input("Enter String:")
for i in x:
    Print(x)

x = input("Enter string:")
for i in x:
    Print(i, ":", x)
```

WAP Accept a string and find length without using length function.

```
x = input("Enter string:")
Cnt = 0
for i in x:
    cnt = cnt + 1  # cnt += 1
Print("length:", cnt)
```