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1.Take an integer as input from the user and determine whether the given number is positive or negative

```
num = int(input("enter a number "))
if(num>0):
  print("the number is positive")
elif(num<0):
  print("the number is negagive")
else:
  print("the number is 0")
```

```
enter a number 12
the number is positive
```

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2. Given 3 sides, check whether these 3 sides form a triangle. (sum of 2 sides greater than the remaining sides). Also for a triangle confirmation found, check if the triangle is isosceles.

```
s1=int(input("enter the first side"))
s2=int(input("enter the second side"))
s3=int(input("enter the third side"))

if(s1+s2>s3 and s1+s3>s2 and s2+s3>s1):
  print("triangle can be formed with these side lengths")
  if(s1==s2 or s2==s3 or s1==s3):
    print("the triangle is isoceles")
  else:
    print("the triangle is not isoceles")
else:
  print("triangle cannot be formed")
```

```
enter the first side1
enter the second side3
enter the third side5
triangle cannot be formed
```

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3. A company is giving a retirement bonus of their retirement amount to all their employees retiring this year. The retirement is based on the following table Service < 5 years, bonus = 0 Service >= 5 years , bonus = 5% Service >= 10 years, bonus = 10% Service >= 20 years, bonus = 20% Write a program to take retirement amount and year of service as input and return the final amount (retirement amount + bonus) as output.

```
amt = float(input('enter the amount'))
years = int(input("enter the number of years of serice"))
bonus = 0
if(years >= 20):
  bonus = 0.20 * amt
elif(years >= 10):
  bonus = 0.10 * amt
elif(years >= 5):
  bonus = 0.05 * amt

net_amt = amt + bonus;

print("the total amount = ",net_amt)
```

```
enter the amount1200000
enter the number of years of serice6
the total amount =  1260000.0
```

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4. Write a python program to take the marks of the user as input and determine the grade based on the table

```
marks = float(input("enter the maarks obained"))
if(marks>=0 and marks <=100):
  if(marks >=85):
    print("grade A")
  elif(marks >=60):
    print("grade = B")
  elif(marks>=40):
    print("grade C ")
  elif(marks>=30):
    print("grade D")
  else:
    print("grade F")
else:
  print("enter valid marks")
```

```
enter the maarks obained99
grade A
```

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5. Simple or Compound : Dia has borrowed Rs P from Ryan for T years and promised Ryan to pay the amountwith the interest.She must pay R% per year. Now she wants to calculate the total interest after five years. Write a python code to calculates the total amount Diamust pay to Ryandepending upon whethershe must pay “simple” or “compound” Interest, absence of these cases must produce “Invalid choice”. Note: For Compound interest the interest is applied half yearly.

```
print("enter the amiunt borrowed \n time period \n rate of interest\n type of interest(simple or compound)")
P = int(input())
T = int(input())
R = int(input())
int_type = input()
interest = 0

if(int_type == 'simple'):
  interest = (P*R*T)/100

if(int_type == 'compound'):
  interest = ((1+(R/100))**(2*T)) * P

print("the interest = ",interest);
```

```
enter the amiunt borrowed
 time period
 rate of interest
 type of interest(simple or compound)
1000
2
12
simple
the interest =  240.0
```

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6. Take a character as input from the user and determine whether the input character is in Uppercase, Lowercase, special character or a digit. (hint: ord())

```
for i in range(3) :
  char = input ('Enter a character :')
  if ord(char)>=65 and ord(char) <=90 :
    print ('Upper case character')
  elif ord(char) >=97 and ord(char)<=122 :
    print ('Lower case character')
  else :
    print ('Special character')
```

```
Enter a character :2
Special character
Enter a character :4
Special character
Enter a character :e
Lower case character
```

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7. Given y as a function of x where, y = ax^2 - bx + c (x > k),

y = 0 (x=k), y = ax^2 + bx + c (x<k) Write a program to read all the values and return the final answer of y Order of inputs (a,b,c,x,k)

```
a= int(input('Enter the value of a :'))
b= int(input('Enter the value of b :'))
c= int(input('Enter the value of c :'))
for i in range(3) :
  x= int(input('Enter the value of x :'))
  k= int(input('Enter the value of k :'))
  if x>k :
    y= a*(x*x) -b*x +c
  elif x==k :
    y = 0
  else :
    y= a*(x*x) +b*x +c
  print (y,'\n')
```

```
Enter the value of a :1
Enter the value of b :3
Enter the value of c :2
Enter the value of x :5
Enter the value of k :6
42

Enter the value of x :2
Enter the value of k :4
12

Enter the value of x :1
Enter the value of k :7
6
```

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8. A cab company charges according to the following table. Distance Charges

1-50 7 Rs./Km

51-100 10 Rs./Km

> 100 15 Rs/Km

Write a program to take distance as input and calculate charges.

```
dist = int (input('Enter distance travelled :'))
amt =0
i = int(dist/100)
if (dist >100) :
  amt = (dist - 100)*15
  dist = 100
if (dist>=51) :
  amt = amt + (dist -50)*10
  dist = dist - 50
if (dist >0):
  amt = amt +(dist)*7
  print ('The cost is',amt)
```

```
Enter distance travelled :12
The cost is 84
```

9. 'Write a python program to take the type of flight, type of payment and the weight of the baggage as input and calculate the final amount to be paid by the user for their baggage.

```
flight = input ('Enter type of flight :')
payment = input ('Enter type of payment :')
wt = int(input ('Enter weight of luggage :'))
if (flight == 'domestic') :
  if (payment == 'prepaid') :
    if(wt <=3) :
       amt = 1350
    elif(wt <= 5) :
       amt = 2250
    elif (wt <= 10) :
      amt = 4500
    elif (wt <= 15) :
      amt = 6750
    elif (wt <= 20) :
      amt = 9000
    else :
      amt = 13500
  elif (payment == 'at airport') :
    amt = wt *550
elif (flight == 'international'):
  if (payment == 'prepaid') :
    if (wt <=5) :
      amt = 2760
    elif (wt <= 10) :
      amt = 5520
    elif (wt <= 15) :
      amt = 8280
    elif (wt <= 20) :
      amt = 11040
    else :
      amt = 16560
  elif payment == 'at airport' : amt = wt *600
print (amt)
```

```
Enter type of flight :domestic
Enter type of payment :prepaid
Enter weight of luggage :12
6750
```

10. An car dealership has the following rates for different types of Car brands: a. Toyota – 25000 b. Honda – 35000 c. Hyundai – 45000 d. Suzuki – 60000 e. Tata – 80000 They are giving a 10% discount for online booking and an 8% discount for advance booking and no discount is given for spot/window booking. a. Ask the user to enter the booking type like online, advance, or window booking. b. Ask the user to select the Brand. c. Compute the amount

```
book = input ('Enter the booking type like online, advance, or window booking. :')
brand = input ('Select the Brand from Toyota, Honda, Hyundai, Suzuki, Tata :')
if brand == 'Toyota' : brand = 25000
elif brand == 'Honda' : brand = 35000
elif brand == 'Hyundai' : brand = 45000
elif brand == 'Suzuki' : brand = 60000
elif brand == 'Tata' : brand = 80000
# print (brand)
if book == 'online' : amt = (brand*10)/100
elif book == 'advance' :amt = (brand *8)/100
elif book == 'window booking': amt = brand
else : print ('Invaid Input')
print ("The amount is :", brand - amt)
```

```
Enter the booking type like online, advance, or window booking. :online
Select the Brand from Toyota, Honda, Hyundai, Suzuki, Tata :Honda
The amount is : 31500.0
```