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Notebook

```
# Accept input from user and store it in variable and print the value
a=int(input("Enter the value"))
print(a)
```

```
Enter the value 89
89
```

```
# Use of print statements and use of (.format )for printing different data types.
price=150
quantity=3
item=1
name="Thumbsup"
myorder="I bought {3} with {0} having {1} and purchased {2}"
print(myorder.format(price,quantity,item,name))
```

```
I bought Thumbsup with 150 having 3 and purchased 1
```

```
import builtins
# Take 2 numbers as user input and add, multiply, divide, subtract, remainder and print the output using int
a=int(input("Enter the value"))
b=int(input("Enter the value"))
add=a+b
print(add)
subtract=a-b
print(subtract)
multiply=a*b
print(multiply )
divide=a/b
print(divide)
rem=a%b
print(rem)
```

```
Enter the value 67
Enter the value 89
156
-22
5963
0.7528089887640449
67
```

```
 #  Take 2 numbers as user input and add, multiply, divide, subtract, remainder and print the output using float
a=float(input("Enter the value"))
b=float(input("Enter the value"))
add=a+b
print(add)
subtract=a-b
print(subtract)
multiply=a*b
print(multiply )
divide=a/b
print(divide)
rem=a%b
print(rem)
```

```
Enter the value 88
Enter the value 66
154.0
22.0
5808.0
1.3333333333333333
22.0
```

```
#Conversion of one unit to another (such as hours to minutes, miles to km and etc)
a=float(input("enter hours"))
print("minutes are= ",a*60)
b=float(input("enter miles"))
print("km are= ",b*1.6)
```

```
enter hours5.0
minutes are=  300.0
enter miles6.0
km are=  9.600000000000001
```

Code Text

```
# Usage of mathematical functions in python like math.ceil, floor, fabs, fmod, trunc, pow, sqrt etc.
import math
my_int=4.5678
print(math.ceil(my_int))
my_int=4.5678
print(math.floor(my_int))
my_int=4.5678
print(math.fabs(my_int))
print(math.fmod(4.5678, 7.8976))
my_int=4.5678
print(math.trunc(my_int))
print(math.pow(4.5678, 7.8976))
my_int=4.5678
print(math.sqrt(my_int))
```

```
5
4
4.5678
4.5678
4
162219.3423504213
2.1372412124044398
```

```
# Building a mathematical calculator that can perform operations according to user input. Use decision making statement.
# This function adds two numbers
def add(x, y):
    return x + y

# This function subtracts two numbers
def subtract(x, y):
    return x - y

# This function multiplies two numbers
def multiply(x, y):
    return x * y

# This function divides two numbers
def divide(x, y):
    return x / y


print("Select operation.")
print("1.Add")
print("2.Subtract")
print("3.Multiply")
print("4.Divide")

while True:
    # take input from the user
    choice = input("Enter choice(1/2/3/4): ")

    # check if choice is one of the four options
    if choice in ('1', '2', '3', '4'):
        num1 = float(input("Enter first number: "))
        num2 = float(input("Enter second number: "))

        if choice == '1':
            print(num1, "+", num2, "=", add(num1, num2))

        elif choice == '2':
            print(num1, "-", num2, "=", subtract(num1, num2))

        elif choice == '3':
            print(num1, "*", num2, "=", multiply(num1, num2))

        elif choice == '4':
            print(num1, "/", num2, "=", divide(num1, num2))

        # check if user wants another calculation
        # break the while loop if answer is no
        next_calculation = input("Let's do next calculation? (yes/no): ")
        if next_calculation == "no":
          break

    else:
        print("Invalid Input")
```

```
Select operation.
1.Add
2.Subtract
3.Multiply
4.Divide
Enter choice(1/2/3/4):  4
Invalid Input
Enter choice(1/2/3/4): 4
Enter first number:  67
Enter second number:  78
67.0 / 78.0 = 0.8589743589743589
Let's do next calculation? (yes/no): No
Enter choice(1/2/3/4):  4
Invalid Input
Enter choice(1/2/3/4): 4
Enter first number: 67
Enter second number:  89
67.0 / 89.0 = 0.7528089887640449
Let's do next calculation? (yes/no): no
```

```
# Accepting 5 different subject marks from user and displaying the grade of the student
a=int(input("Enter the cse marks"))
b=int(input("Enter the maths marks"))
c=int(input("Enter the english marks"))
d=int(input("Enter the chemistry marks"))
e=int(input("Enter the physics marks"))
average=(a+b+c+d+e)/5
print(average)
if average>90:

  print("O grade")

elif 80<average<90:

  print("A grade")

elif 70<average<80:

  print("B grade")

elif 60<average<70:

  print("C grade")

elif 50<average<60:

  print("Pass")

else:

  print("Fail")
```

```
Enter the cse marks 89
Enter the maths marks 54
Enter the english marks 67
Enter the chemistry marks 32
Enter the physics marks 99
68.2
C grade
```

```
# Printing all even numbers, odd numbers, count of even numbers, count of odd numbers within a given range.
n=int(input("enter range "))
c=0
for i in range(1,n+1):
 if i%2==0:
   c+=1
   print(i)

print("even count is ",c)

d=0
for i in range(1,n+1):
  if i%2!=0:
    d+=1
    print(i)

print("odd count is ",d)
```

```
enter range 20
2
4
6
8
10
12
14
16
18
20
even count is  10
1
3
5
7
9
11
13
15
17
19
odd count is  10
```

```
# Compute the factorial of a given number.
n=int(input("enter a number "))
fac=1
for i in range(1,n+1):
  fac=fac*i

print(fac)
```

```
enter a number 6
720
```

```
# Compute GCD of two given
a=int(input("enter a number"))
b=int(input("enter a number"))
k=a if a<b else b
while True:
    if a%k==0 and b%k==0:
     break
    k -=1
print(k)
```

```
enter a number60
enter a number20
20
```

Code Text

```
# Check whether the given input is palindrome
def isPalindrome(s):
    return s==s[::-1]
s=input("enter the value")
ans=isPalindrome(s)
if ans:
    print("Yes")
else:
    print("No")
```

```
enter the value1002001
Yes
```

Code Text

```
#Check whether the given input is strong number
sum=0
num=int(input("Enter a number:"))
temp=num
while(num):
    i=1
    fact=1
    rem=num%10
    while(i<=rem):
        fact=fact*i
        i=i+1
    sum=sum+fact
    num=num//10
if(sum==temp):
    print("Given number is a strong number")
else:
    print("Given number is not a strong number")
```

```
Enter a number:2006
Given number is not a strong number
```

Code Text

```
#Check whether the given input is perfect number
n = int(input("Enter any number: "))
sum1 = 0
for i in range(1, n):
    if(n % i == 0):
        sum1 = sum1 + i
if (sum1 == n):
    print("The number is a Perfect number!")
else:
    print("The number is not a Perfect number!")
```

```
Enter any number: 275
The number is not a Perfect number!
```

Code Text

```
Enter the principle amount:100200
Enter the rate:1
Enter the number of years:3
103236.1602
```
