

```
In [1]: def print_grades(grades):
        for grade in grades:
            print(grade)
            if grade >= 90:
                print("Excellent")
            elif grade >= 80:
                print("Good")
            elif grade >= 70:
                print("Average")
            elif grade >= 60:
                print("Pass")
            else:
                print("Fail")
        grades = [95, 87, 73, 65, 59]
        print_grades(grades)

95
Excellent
87
Good
73
Average
65
Pass
59
Fail
```

```
In [2]: #Simple Calcy#

a=int(input("Enter a :"))
b=int(input("Enter b :"))
c=(input("Enter operator :"))
if(c=="+"):
    print("Result:",(a+b))
elif(c=="-"):
    print("Result:",(a-b))
elif(c=="*"):
    print("Result:",(a*b))
elif(c=="/"):
    print("Result:",(a/b))
else:
    print("Invalid operator")

Enter a :7
Enter b :3
Enter operator :*
Result: 21
```

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In [ ]: #Largest#

a=int(input("Enter a :"))
b=int(input("Enter b :"))
c=int(input("Enter c :"))
if(a>b):
    if(a>c):
        print(a,"is bigger")
    else:
        print(c,"is bigger")
else:
    if(b>c):
        print(b,"is bigger")
    else:
        print(c,"is bigger")
```

```
In [9]: # Armstrong

num = int(input("Enter a number: "))
l=len(str(num))
sum = 0
temp = num
while temp > 0:
    digit = temp % 10
    sum = sum+(digit**l)
    temp //= 10

if num == sum:
    print(num,"is an Armstrong number")
else:
    print(num,"is not an Armstrong number")

Enter a number: 1634
1634 is an Armstrong number
```

```
In [ ]: #Quadratic Eqn.

import cmath

a = float(input('Enter a: '))
b = float(input('Enter b: '))
c = float(input('Enter c: '))

if a == 0:
    print("Input correct quadratic equation")

else:
    d=(b**2)-(4*a*c)
    sqrt_val = cmath.sqrt(abs(d))

    if d > 0:
        print(" real and different roots ")
        print((-b + sqrt_val) / (2 * a))
        print((-b - sqrt_val) / (2 * a))

    elif d == 0:
        print(" Real and same roots")
        print(-b / (2 * a))

    else:
        print("Complex Roots")
        print(- b / (2 * a), " + i", sqrt_val)
        print(- b / (2 * a), " - i", sqrt_val)
```

```
In [12]: # Prime

num = int(input("Enter a number: "))
if num > 1:

    for i in range(2, int(num/2)+1):

        if (num % i) == 0:
            print(num, "is not a prime number")
            break
        else:
            print(num, "is a prime number")
else:
    print(num, "is not a prime number")

Enter a number: 7
7 is a prime number
```

```
In [28]: # Python program to display all the prime numbers within an interval

lower_value = int(input ("Please, Enter the Lowest Range Value: "))
upper_value = int(input ("Please, Enter the Upper Range Value: "))

print ("The Prime Numbers in the range are: ")
for number in range (lower_value, upper_value + 1):
    if number > 1:
        for i in range (2, number):
            if (number % i) == 0:
                break
            else:
                print (number)

Please, Enter the Lowest Range Value: 10
Please, Enter the Upper Range Value: 21
The Prime Numbers in the range are:
11
13
17
19
```

```
In [13]: def factorial(n):
        return 1 if (n==1 or n==0) else n * factorial(n - 1)

        num = int(input("Enter a number: "))
        print("Factorial of",num,"is",factorial(num))

Enter a number: 4
Factorial of 4 is 24
```

```
In [15]: # celsius to fahrenheit

celsius = float(input("Enter celsius temp: "))
fahrenheit = (celsius * 1.8) + 32
print('%0.1f degree Celsius is equal to %0.1f degree Fahrenheit' %(celsius,fahrenheit))

Enter celsius temp: 37.5
37.5 degree Celsius is equal to 99.5 degree Fahrenheit
```

```
In [ ]: #Positive, Negative or 0#

a=int(input("Enter a :"))
if(a>0):
    print("Positive")
elif(a<0):
    print("Negative")
else:
    print("0")
```

```
In [16]: #Leap year

n=int(input("Enter year :"))

if(n%400 == 0):
    print("Leap year!!")
elif((n%4==0)and(n%100!=0)):
    print("Leap year!!")
else :
    print("Not a Leap year!!")

Enter year :2020
Leap year!!
```

State Language Code Karnataka Kannada KA Telangana Telugu TS Tamil Nadu Tamil TN

```
In [31]: number = int(input ("Enter the number of which the user wants to print the multiplication table: "))

print ("The Multiplication Table of: ", number)
for count in range(1, 11):
    print (number,'x',count,'=',number*count)

Enter the number of which the user wants to print the multiplication table: 4
The Multiplication Table of: 4
4 x 1 = 4
4 x 2 = 8
4 x 3 = 12
4 x 4 = 16
4 x 5 = 20
4 x 6 = 24
4 x 7 = 28
4 x 8 = 32
4 x 9 = 36
4 x 10 = 40
```

```
In [2]: import re

def match_characters(string):
    pattern = r'[abc]'
```

```
    matches = re.findall(pattern, string)
    return matches

# Example usage:
input_string = "The quick brown fox jumps over the lazy dog"
matched_characters = match_characters(input_string)
print(matched_characters)

['c', 'b', 'a']
```

```
In [3]: import re

def match_subpattern(string):
    pattern = r'\bname\b' # \b ensures matching "name" as a whole word
    matches = re.findall(pattern, string)
    return matches

# Example usage:
input_string = "My name is John. His nickname is Superman."
matched_subpattern = match_subpattern(input_string)
print(matched_subpattern)

['name']
```

```
In [6]: import re

def match_decimal_digits(string):
    pattern = r'\d'
```

```
    matches = re.findall(pattern, string)
    return matches

# Example usage:
input_string = "The number is 12345"
matched_digits = match_decimal_digits(input_string)
print(matched_digits)

['1', '2', '3', '4', '5']
```

```
In [10]: import re

def match_chars(string):
    pattern = r'\w'
```

```
    matches = re.findall(pattern, string)
    return matches

# Example usage:
input_string = "Hello_World...123"
matched_chars = match_chars(input_string)
print(matched_chars)

['H', 'e', 'l', 'l', 'o', '_', 'W', 'o', 'r', 'l', 'd', '1', '2', '3']
```

```
In [21]: #cells using the cell name

from openpyxl import load_workbook

workbook = load_workbook('demo.xlsx')
worksheet = workbook['Language']
cell_names = ['A1', 'B2', 'C3']

for name in cell_names:
    cell_value = worksheet[name].value
    print(f'{name}: {cell_value}')

workbook.close()

A1: State
B2: Kannada
C3: TS
```

```
In [1]: text_file = open('C:\\Users\\venka\\ph.txt','w')

word_list= []

for i in range (1, 5):
    print("Please enter data: ")
    line = input() #take input
    word_list.append(line) #append to the list

text_file.writelines(word_list)
text_file.close()

Please enter data:
Gokulnath.V
Please enter data:
21
Please enter data:
Hello
Please enter data:
Ganesha bappa
```

```
In [9]: import re

def match_letter_digit_underscore(string):
    pattern = "[a-zA-Z0-9_]"
    return bool(re.search(pattern, string))

match_letter_digit_underscore("Hello, world!")
match_letter_digit_underscore("1234567890")

Out[9]: True
```

```
In [ ]: file1 = open("myfile.txt","w")
L = ["This is Delhi \n","This is Paris \n","This is London \n"]

# \n is placed to indicate EOL (End of Line)
file1.write("Hello \n")
file1.writelines(L)
file1.close() #to change file access modes

file1 = open("myfile.txt","r+")

print("Output of Read function is ")
print(file1.read())
print()

# seek(n) takes the file handle to the nth
# byte from the beginning.
file1.seek(0)

print( "Output of Readline function is ")
print(file1.readline())
print()
```

```
In [ ]: file1 = open("myfile.txt","w")
L = ["This is Delhi \n","This is Paris \n","This is London \n"]
file1.writelines(L)
file1.close()

# Append-adds at last
file1 = open("myfile.txt","a")#append mode
file1.write("Today \n")
file1.close()

file1 = open("myfile.txt","r")
print("Output of Readlines after appending")
print(file1.readlines())
print()
file1.close()

# Write-Overwrites
file1 = open("myfile.txt","w")#write mode
file1.write("Tomorrow \n")
file1.close()

file1 = open("myfile.txt","r")
```

```
print("Output of Readlines after writing")
print(file1.readlines())
print()
file1.close()
```