

List Of Python Programs for Class XI, XII

CONDITIONAL STATEMENTS(IF-ELSE)

1. Program to find if a number(0-999) is 1/2/3 Digit number

```
num= int(input("Enter a number between 0 to 999"))
if num<0 or num>999:
    print("Invalid Number entered")
else:
    if num<10:
        print("Entered number 1 digit number")
    else:
        if num<100:
            print("Entered number 2 digit number")
        else:
            print("Entered number 3 digit number")
```

2. Program to find minimum, mid and maximum number out of 3 numbers

```
a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
c = int(input("Enter third number: "))
if a>b and a>c:
    max=a
    if b>c:
        mid= b
        min= c
    else:
        mid= c
        min= b
elif b>a and b>c:
    max= b
    if a>c:
        mid= a
        min= c
    else:
        mid= c
        min= a
else:
    max= c
    if a>b:
        mid= a
        min= b
    else:
        mid= b
        min= a
print("Max= ",max," Mid= ",mid, " Min= ",min)
```

ITERATIVE STATEMENTS(WHILE AND FOR LOOPS)

3. Using WHILE LOOP i.e. Conditional Loop

1. Simple Program to print numbers 1 to 14 using while loop

```
i=1  
  
while i<15:  
    print(i)  
    i += 1
```

2. Program to multiply 2 integers without using * operator using while loop

```
num1= int(input("Enter First Number"))  
num2= int(input("Enter Second Number"))
```

```
prod=0
```

```
while num2>0:  
    prod += num1  
    num2-=1
```

```
print("Product= ",prod)
```

3. Exit the loop when i is 3:

```
i = 1  
while i < 6:  
    print(i)  
    if i == 3:  
        break # Loop will end when value of i=3  
    i += 1
```

4. Continue to the next iteration if i is 3:

```
i = 0  
while i < 6:  
    i += 1  
    if i == 3:  
        continue # Next iteration will start  
    print(i)
```

5. Print a message once the condition is false:

```
i = 1
while i < 6:
    print(i)
    i += 1
else:
    print("i is no longer less than 6")
```

4. Using FOR LOOP i.e. Counting Loop

1. Print each fruit in a fruit List:

```
fruits = ["apple", "banana", "cherry"]
for x in fruits:
    print(x)
```

2. Loop through the letters in the String "abc":

```
for x in "abc":
    print(x)
```

3. Using the range() function:

```
for x in range(6):
    print(x)
```

4. Print all numbers from 0 to 5, and print a message when the loop has ended:

```
for x in range(6):
    print(x)
else:
    print("Finally finished!")
```

5. Nested Loop: Print each adjective for every fruit

```
adj = ["red", "big", "tasty"]
fruits = ["apple", "banana", "cherry"]
for x in adj:
    for y in fruits:
        print(x, y)
```

FUNCTIONS in Python

5. Simple program to demonstrate FUNCTIONS in Python

```
# Program to demonstrate FUNCTIONS in Python
# Define first function
def hi():
    print("Hi!")
    hru()          # Calls another function: hru()

# Define second function
def hru():
    print("How are you?")
    bye()          # Calls another function: bye()

# Define third function
def bye():
    print("Bye...")

# Now MAIN begins
print("MAIN STARTS")
hi()
print("MAIN ENDS")
```

6. Basic Calculator: With and Without Functions

1. Program to make a Calculator(+,-,/,*) of 2 numbers WITHOUT FUNCTION

```
n1= int(input("Enter Num 1: "))    # Input first number
n2= int(input("Enter Num 2: "))    # Input second number

print(n1+n2)                       # Print Sum
print(n1-n2)                       # Print Difference
print(n1/n2)                       # Print Quotient
print(n1*n2)                       # Print Product
```

2. Program to make a Calculator(+,-,/,*) of 2 numbers USING FUNCTION

Define a function to do calculations

```
def Calculator(num1,num2):
```

```
    if num2==0:
```

```
        return 0,0,0,0    # Incorrect Input as Division by 0 is Undefined
```

```
    a= num1+num2          # Calculate Sum
```

```
    s= num1-num2          # Calculate Difference
```

```
    d= num1/num2          # Calculate Quotient
```

```
    m= num1*num2          # Calculate Product
```

```
    return a,s,d,m        # Return multiple values
```

Now MAIN begins

```
n1= int(input("Enter Num 1: "))
```

```
n2= int(input("Enter Num 2: "))
```

```
add, sub, div, mul = Calculator(n1,n2) # store multiple returned values
```

```
print(add, sub, div, mul)
```

File Handling in Python

7. File Handling using open() function to create, read and write to a text file.

1. Program to create a New Text File in Python

```
myFile= open("poem.txt","x")  
myFile.write("Twinkle Twinkle Litte Star,")  
myFile.close()
```

2. Program to Read First 5 Characters from Text File, Then 5 Characters again

```
f= open("poem.txt","r")  
str= f.read(5)  
print(str)  
str= f.read(5)  
print(str)  
f.close()
```

3. Program to Read complete Text File in Python

```
f= open("poem.txt","r")  
str= f.read()  
print(str)  
f.close()
```

4. Program to write a line in an Existing Text File: Append Mode

```
fout= open("poem.txt","a")  
fout.write("How I wonder what you are?")  
fout.close()
```

```
fin= open("poem.txt","r")  
print(fin.read())  
fin.close()
```

5. Program to write a line in an Existing Text File: Write Mode

```
fout= open("poem.txt","w")  
fout.write("Up above the world so High,\n Like a diamond in the Sky!")  
fout.close()
```

```
fin= open("poem.txt","r")  
print(fin.read())  
fin.close()
```

8. File Handling using WITH statement

Program to create a New Text File in Python

```
with open("poem2.txt","x")as myFile:  
    myFile.write("Twinkle Twinkle Litte Star,")
```

Program to Read First 5 Characters from Text File, Then 5 Characters again

```
with open("poem2.txt","r") as f:  
    str= f.read(5)  
    print(str)  
    str= f.read(5)  
    print(str)
```

9. CSV File Handling

Program to Create, Read, Write and Append to a CSV File in Python

#1. Import CSV Module, it has functions like reader(),writer(), writerow() etc...

```
import csv
```

#2. Create a new CSV File names "student1.csv" to store ID and Names of students

```
with open("student1.csv","x") as myFile:  
    print("New file is created")
```

```
print("Printing the file contents")
```

#3. Read and print data in CSV File

```
with open("student1.csv","r") as myData:  
    dataRows = csv.reader(myData)  
    for eachRow in dataRows:    # Blank File because No Data is written till now  
        print(eachRow)
```

```
print("Now writing into the file")
```


#4. Write details of 3 students to a CSV File

with open("student1.csv","w",newline=") as myData:

```
data= csv.writer(myData)
data.writerow([1,"Rita"]) # Row 1
data.writerow([2,"Rohan"]) # Row 2
data.writerow([3,"Tarun"]) # Row 3
```

print("Now printing the file contents again after writing")

#5. Read and print contents of a CSV File

with open("student1.csv","r") as myData:

```
dataRows = csv.reader(myData)
for eachRow in dataRows: # 3 rows will be printed
    print(eachRow)
```

print("Appending 2 new rows into student1.csv")

#6. Append 2 new rows into the file

with open("student1.csv","a",newline=") as f:

```
newrow = csv.writer(f)
newrow.writerow([4,"Anuj"]) # Row 4
newrow.writerow([5,"Anita"]) # Row 5
```

print("Printing all the rows in student1.csv File")

#7. Read and print contents of CSV File

with open("student1.csv","r") as myData:

```
dataRows = csv.reader(myData)
for eachRow in dataRows:
    print(eachRow)
```