**Python basic programs**

Python | Declare different types of variables, print their values, types and Ids

Here, we are going to learn all about the **different types of the variables in python**. We will **declare the variables; print their data types, ids (unique identification number) and value**.  
Submitted by [Pankaj Singh](https://www.includehelp.com/Members/Pankaj-Singh.aspx), on September 29, 2018

**Declare different types of variables; print their types, ids and variables in Python.**

There are two inbuilt functions are using in the program:

1. **type()** - its returns the **data type** of the variable/object.
2. **id()** - it returns the **unique identification number (id)** of created object/variable.

**Program:**

**print**("Numbers")

**print**("---------------------------------")

a=10

**print**(type(a),id(a),a)

a=23.7

**print**(type(a),id(a),a)

a=2+6j

**print**(type(a),id(a),a)

## **Python numbers**

There are three types of numbers in python:

1. Integer number
2. Float number
3. Complex number

In the below-given program, we are creating different variables to store the numbers and printing their types and values.

### **Python code to create number variables, print types and values**

# Python code to create number variables,

# print types and values

# creating number variables and assigning values

a = 10 # integer

b = 10.23 # float

c = 10+2j # complex

# printing types

**print**("type(a): ", type(a))

**print**("type(b): ", type(b))

**print**("type(c): ", type(c))

# printing values

**print**("value of a: ", a)

**print**("value of b: ", b)

**print**("value of c: ", c)

# Create integer variable by assigning binary value in Python

Here, we are going to learn **how to create an integer variable by assigning value in binary format in Python?**  
Submitted by **IncludeHelp**, on April 26, 2019

The task is to **create integer variables and assign values in binary format**.

## **Binary value assignment**

To assign value in binary format to a variable, we use 0b suffix. It tells to the compiler that the value (suffixed with 0b) is a binary value and assigns it to the variable.

**Syntax to assign a binary value to the variable**

x = 0b111011

### **Python code to create variable by assigning binary value**

In this program, we are declaring some of the variables by assigning the values in binary format, printing their types, values in decimal format and binary format.

**Note:** To print value in binary format, we use [bin() function](https://www.includehelp.com/python/bin-function-with-example.aspx).

# Python code to create variable

# by assigning binary value

# creating number variable

# and, assigning binary value

a = 0b1010

b = 0b00000000

c = 0b11111111

d = 0b11110000

e = 0b10101010

# printing types

**print**("type of the variables...")

**print**("type of a: ", type(a))

**print**("type of b: ", type(b))

**print**("type of c: ", type(c))

**print**("type of d: ", type(d))

**print**("type of e: ", type(e))

# printing values in decimal format

**print**("value of the variables in decimal format...")

**print**("value of a: ", a)

**print**("value of b: ", b)

**print**("value of c: ", c)

**print**("value of d: ", d)

**print**("value of e: ", e)

# printing values in binary format

**print**("value of the variables in binary format...")

**print**("value of a: ", bin(a))

**print**("value of b: ", bin(b))

**print**("value of c: ", bin(c))

**print**("value of d: ", bin(d))

**print**("value of e: ", bin(e))

# Create integer variable by assigning octal value in Python

Here, we are going to learn **how to create an integer variable by assigning value in octal format in Python?**  
Submitted by **IncludeHelp**, on April 26, 2019

The task is to **create integer variables and assign values in octal format**.

## **Octal value assignment**

To assign value in octal format to a variable, we use 0o suffix. It tells to the compiler that the value (suffixed with 0o) is an octal value and assigns it to the variable.

**Syntax to assign an octal value to the variable**

x = 0o12345678

### **Python code to create variable by assigning octal value**

In this program, we are declaring some of the variables by assigning the values in octal format, printing their types, values in decimal format and octal format.

**Note:** To print value in octal format, we use [oct() function](https://www.includehelp.com/python/oct-function-with-example.aspx).

# Python code to create variable

# by assigning octal value

# creating number variable

# and, assigning octal value

a = 0o1234567

b = 0o7654321

c = 0o1745

d = 0o100

e = 0o123

# printing types

**print**("type of the variables...")

**print**("type of a: ", type(a))

**print**("type of b: ", type(b))

**print**("type of c: ", type(c))

**print**("type of d: ", type(d))

**print**("type of e: ", type(e))

# printing values in decimal format

**print**("value of the variables in decimal format...")

**print**("value of a: ", a)

**print**("value of b: ", b)

**print**("value of c: ", c)

**print**("value of d: ", d)

**print**("value of e: ", e)

# printing values in octal format

**print**("value of the variables in octal format...")

**print**("value of a: ", oct(a))

**print**("value of b: ", oct(b))

**print**("value of c: ", oct(c))

**print**("value of d: ", oct(d))

**print**("value of e: ", oct(e))

# Create integer variable by assigning hexadecimal value in Python

Here, we are going to learn **how to create an integer variable by assigning value in hexadecimal format in Python?**  
Submitted by **IncludeHelp**, on April 26, 2019

The task is to **create integer variables and assign values in hexadecimal format**.

## **Hexadecimal value assignment**

To assign value in hexadecimal format to a variable, we use 0x or 0X suffix. It tells to the compiler that the value (suffixed with 0x or 0X) is a hexadecimal value and assigns it to the variable.

**Syntax to assign an hexadecimal value to the variable**

x = 0x123AF

y = 0X1FADCB

### **Python code to create variable by assigning hexadecimal value**

In this program, we are declaring some of the variables by assigning the values in hexadecimal format, printing their types, values in decimal format and hexadecimal format.

**Note:** To print value in hexadecimal format, we use [hex() function](https://www.includehelp.com/python/hex-function-with-example.aspx).

# Python code to create variable

# by assigning hexadecimal value

# creating number variable

# and, assigning hexadecimal value

a = 0x123

b = 0X123

c = 0xAFAF

d = 0Xafaf

e = 0x7890abcdef

# printing types

**print**("type of the variables...")

**print**("type of a: ", type(a))

**print**("type of b: ", type(b))

**print**("type of c: ", type(c))

**print**("type of d: ", type(d))

**print**("type of e: ", type(e))

# printing values in decimal format

**print**("value of the variables in decimal format...")

**print**("value of a: ", a)

**print**("value of b: ", b)

**print**("value of c: ", c)

**print**("value of d: ", d)

**print**("value of e: ", e)

# printing values in hexadecimal format

**print**("value of the variables in hexadecimal format...")

**print**("value of a: ", hex(a))

**print**("value of b: ", hex(b))

**print**("value of c: ", hex(c))

**print**("value of d: ", hex(d))

**print**("value of e: ", hex(e))

# Python | Typecasting Input to Integer, Float

Here, we are going to learn **how to typecast given input to integer, float in Python**?  
Submitted by **IncludeHelp**, on September 08, 2018

To input any value, we use input() function - which is an inbuilt function.

### **Typecasting input to integer**

**Syntax:**

int(input())

**Example:**

# input a number

num = int(input("Input a value: "))

# printing input value

**print** "num = ", num

**Output**

Input a value: 10

num = 10

### **Typecasting Input to float**

**Syntax:**

float(input())

**Example:**

# input a number

num = float(input("Input a value: "))

# printing input value

**print** "num = ", num

**Output**

Input a value: 10.23

num = 10.23

# Python program to print ASCII value of a character

Here, we are going to learn **how to print the ASCII value of a given character in Python**?  
Submitted by **IncludeHelp**, on March 30, 2019

**Given a character, and we have to find its ASCII code.**

## **ASCII value of character in Python**

In python, to get an ASCII code of a character, we use ord() function. ord() accepts a character and returns the ASCII value of it.

**Syntax:**

ord(character);

**Example:**

Input:

char\_var = 'A'

Function call:

ord(char\_var)

Output:

65

**Python code to find ASCII value of a character**

# python program to print ASCII

# value of a given character

# Assigning character to a variable

char\_var = 'A'

# printing ASCII code

**print**("ASCII value of " + char\_var + " is = ", ord(char\_var))

char\_var = 'x'

# printing ASCII code

**print**("ASCII value of " + char\_var + " is = ", ord(char\_var))

char\_var = '9'

# printing ASCII code

**print**("ASCII value of " + char\_var + " is = ", ord(char\_var))

**Output**

ASCII value of A is = 65

ASCII value of x is = 120

ASCII value of 9 is = 57

# Python program for simple interest

**Find simple interest program in Python**: Here, we are going to learn **how to find the simple interest in Python** when principle amount, rate of interest and time is given?   
Submitted by **IncludeHelp**, on May 25, 2019

Given principle amount, rate and time and we have to **find the simple interest in Python**.

## **Calculate simple interest**

To calculate simple interest, we use the following formula,

**(P \* R \* T) / 100**

Where,

* **P** – Principle amount
* **R** – Rate of the interest, and
* **T** – Time in the years

**Example:**

Input:

p = 250000

r = 36

t = 1

# formula

si = (p\*r\*t)/100

print(si)

Output:

90000

## **Python program to find simple interest**

# Python program to find simple interest

p = float(input("Enter the principle amount : "))

r = float(input("Enter the rate of interest : "))

t = float(input("Enter the time in the years: "))

# calculating simple interest

si = (p\*r\*t)/100

# printing the values

**print**("Principle amount: ", p)

**print**("Interest rate : ", r)

**print**("Time in years : ", t)

**print**("Simple Interest : ", si)

**Output**

First run:

Enter the principle amount : 10000

Enter the rate of interest : 3.5

Enter the time in the years: 1

Principle amount: 10000.0

Interest rate : 3.5

Time in years : 1.0

Simple Interest : 350.0

Second run:

Enter the principle amount : 250000

Enter the rate of interest : 36

Enter the time in the years: 1

Principle amount: 250000.0

Interest rate : 36.0

Time in years : 1.0

Simple Interest : 90000.0

# Python program for compound interest

**Find compound interest program in Python**: Here, we are going to learn **how to find the compound interest in Python** when principle amount, rate of interest and time is given?  
Submitted by **IncludeHelp**, on May 26, 2019

Given principle amount, rate and time and we have to **find the compound interest in Python**.

## **Calculate compound interest**

To calculate compound interest, we use the following formula,

**P(1 + R / 100)T**

Where,

* **P** – Principle amount
* **R** – Rate of the interest, and
* **T** – Time in the years

**Example:**

Input:

p = 250000

r = 36

t = 1

# formula

ci = p \* (pow((1 + r / 100), t))

print(ci)

Output:

339999.99999999994

## **Python program to find compound interest**

# Python program to find compound interest

p = float(input("Enter the principle amount : "))

r = float(input("Enter the rate of interest : "))

t = float(input("Enter the time in the years: "))

# calculating compound interest

ci = p \* (pow((1 + r / 100), t))

# printing the values

**print**("Principle amount : ", p)

**print**("Interest rate : ", r)

**print**("Time in years : ", t)

**print**("compound Interest : ", ci)

**Output**

First run:

Enter the principle amount : 10000

Enter the rate of interest : 3.5

Enter the time in the years: 1

Principle amount : 10000.0

Interest rate : 3.5

Time in years : 1.0

compound Interest : 10350.0

Second run:

Enter the principle amount : 250000

Enter the rate of interest : 36

Enter the time in the years: 1

Principle amount : 250000.0

Interest rate : 36.0

Time in years : 1.0

compound Interest : 339999.99999999994

# Simple pattern printing programs in Python

**Python pattern printing programs**: Here, we will find some of the **programs based on pattern printing in Python**.  
Submitted by [Anshuman Das](https://www.includehelp.com/Members/Anshuman-Das.aspx), on September 24, 2019

**Pattern 1:**

\*

\* \*

\* \* \*

\* \* \* \*

\* \* \* \* \*

**Code:**

**for** row **in** range (0,5):

**for** column **in** range (0, row+1):

**print** ("\*", end="")

# ending row

**print**('\r')

**Pattern 2:**

Now if we want to print numbers or alphabets in this pattern then we need to replace the **\*** with the desired number you want to replace. Like if we want pattern like,

1

1 1

1 1 1

1 1 1 1

1 1 1 1 1

**Code:**

#row operation

**for** row **in** range(0,5):

# column operation

**for** column **in** range(0,row+1):

**print**("1 ",end="")

# ending line

**print**('\r')

**Pattern 3:**

If want increasing numbers in this pattern like,

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

Here we need to declare a starting number from which the patter will start. In the above case the number is starting from 1. So, here we have to create a variable and assigns its value to 1 then we need to print only the value of variable.

As its value is increasing every row by 1, but starting value is always 1.

So, for that we have to declare the value of the starting number before column operation (second for loop) and need to increase it by 1 after the column operation section after the printing value.

**Code:**

#row operation

**for** row **in** range (0, 5):

n = 1

# column operation

**for** column **in** range (0, row+1):

**print**(n, end=" ")

n = n+1

# ending line

**print**('\r')

**Pattern 4:**

1

2 3

4 5 6

7 8 9 10

11 12 13 14

To get the above pattern only we have to declare the variable before the row operation. Follow the code below,

**Code:**

n = 1

#row operation

**for** row **in** range (0, 5):

# column operation

**for** column **in** range (0, row+1):

**print**(n, end=" ")

n = n+1

# ending line

**print**('\r')

**Pattern 5:**

A

A B

A B C

A B C D

A B C D E

The above pattern can also be another type.

For that should have the knowledge of [ASCII values](https://www.includehelp.com/ascii-table.aspx) of 'A'.

Its [ASCII value](https://www.includehelp.com/ascii-table.aspx) is 65.

In column operation We have to convert the ASCII value to character using [chr() function](https://www.includehelp.com/python/chr-function-with-example.aspx).

**Code:**

#row operation

**for** row **in** range (0, 5):

n = 65

# column operation

**for** column **in** range (0, row+1):

c = chr(n)

**print**(c, end=" ")

n = n+1

# ending line

**print**('\r')

# Python program to find power of a number using exponential operator

**Python exponential operator example**: Here, we are going to learn **how to find power of a number using exponential operator using exponential (\*\*) operator in Python?**  
Submitted by **IncludeHelp**, on April 12, 2019

Given two numbers a and b, we have to find a to the power b using exponential operator (\*\*).

**Example:**

Input:

a = 10

b = 3

# calculating power using exponential oprator (\*\*)

result = a\*\*b

print(result)

Output:

1000

**Finding power of integer values**

# python program to find the power of a number

a = 10

b = 3

# calculating power using exponential oprator (\*\*)

result = a\*\*b

**print** (a, " to the power of ", b, " is = ", result)

**Output**

10 to the power of 3 is = 1000

**Finding power of float values**

# python program to find the power of a number

a = 10.23

b = 3.2

# calculating power using exponential oprator (\*\*)

result = a\*\*b

**print** (a, " to the power of ", b, " is = ", result)

**Output**

10.23 to the power of 3.2 is = 1704.5197114724524

# Python program to find the power of a number using loop

**Finding power of a number in Python**: Here, we are going to learn **how to find the power of a number using loop in Python?**  
Submitted by [Anuj Singh](https://www.includehelp.com/Members/Anuj-Singh.aspx), on June 04, 2019

Here, we are going to **calculate the value of Nth power of a number without using power function**.

The idea is using loop. We will be multiplying a number (initially with value 1) by the number input by user (of which we have to find the value of **Nth power**) for **N times**. For multiplying it by N times, we need to run our loop N times. Since we know the number of times loop will execute, so we are using for loop.

**Example:**

Input:

base: 5, power: 4

Output:

625

### **Python code to find power of a number using loop**

num = int(input("Enter the number of which you have to find power: "))

pw = int(input("Enter the power: "))

kj = 1

**for** n **in** range(pw):

kj = kj\*num

**print**(kj)

**Output**

Enter the number of which you have to find power: 5

Enter the power: 4

625

# Python program to extract and print digits in reverse order of a number

**Extracting digits in Python**: Here, we are going to learn **how to extract and print the digits in reverse order of a number in Python?**  
Submitted by [Anuj Singh](https://www.includehelp.com/Members/Anuj-Singh.aspx), on June 04, 2019

Here, we are going to use some mathematical base while programming. The problem is, when you ask a number from the user, the user would give input as multiple digit number (considering integer only). So it is easy to find the type of number but it’s not easy to find the number of digits in the number.

So, in the following problem, we are going to use the mathematical trick of:

1. Subtracting the remainder after dividing it by 10 i.e. eliminating the last digit.
2. Dividing an integer by 10 gives up an integer in computer programming (the above statement is only true when the variables are initialized as int only).

**Example:**

Input: 12345

Output: 54321

### **Python code to extract and print digits of a number in reverse order**

num = int(input("Enter a number with multiple digit: "))

n=0

**while** num>0:

a = num%10

num = num - a

num = num/10

**print**(int(a),end="")

n = n + 1

**print**(n)

**Output**

Enter a number with multiple digit: 123456789

9876543219

Here we are first using a loop with condition num>0, and the last digit of the number is taken out by using simple % operator after that, the remainder term is subtracted from the num. Then number num is reduced to its 1/10th so that the last digit can be truncated.

The cycle repeats and prints the reverse of the number num.

# Python | Input age and check eligibility for voting

**Python | if else example:** Here, we are implementing a program, it will **read age from the user and check whether person is eligible for voting or not**.  
Submitted by [Pankaj Singh](https://www.includehelp.com/Members/Pankaj-Singh.aspx), on September 29, 2018

**Input age of the person and check whether a person is eligible for voting or not in Python.**

This is a simple if else example in the python - Here, we will read the age of the person by using input() function and convert the entered age value to the integer by using int() function. Then we will check the condition, whether age is greater than or equal to 18 or not - **if age is greater than or equal to 18, the person will be eligible for the voting**.

**Program:**

# input age

age = int(input("Enter Age : "))

# condition to check voting eligibility

**if** age>=18:

status="Eligible"

**else**:

status="Not Eligible"

**print**("You are ",status," for Vote.")

**Output**

Enter Age : 19

You are Eligible for Vote.

# Python | Find largest of three number using nested if else

**Python | Nested if else example:** Here, we are implement a program, it will **input three numbers and find the largest of three numbers**.  
Submitted by [Pankaj Singh](https://www.includehelp.com/Members/Pankaj-Singh.aspx), on October 04, 2018

**Input three integer numbers and find the largest of them using nested if else in python.**

**Example:**

Input:

Enter first number: 10

Enter second number: 20

Enter third number: 5

Output:

Largest number: 20

**Program:**

# input three integer numbers

a=int(input("Enter A: "))

b=int(input("Enter B: "))

c=int(input("Enter C: "))

# conditions to find largest

**if** a>b:

**if** a>c:

g=a

**else**:

g=c

**else**:

**if** b>c:

g=b

**else**:

g=c

# print the largest number

**print**("Greater = ",g)

**Output**

Enter A: 10

Enter B: 20

Enter C: 5

Greater = 20

# Python | Calculate discount based on the sale amount

**Python | if elif example**: Here, we are implementing a program, it will **input sale amount and calculate the discount based on input amount**.  
Submitted by [Pankaj Singh](https://www.includehelp.com/Members/Pankaj-Singh.aspx), on September 29, 2018

**Input same amount and calculate discount based on the amount and given discount rate in Python.**

The discount rates are:

Amount Discount

0-5000 5%

5000-15000 12%

15000-25000 20%

above 25000 30%

**Program:**

# input sale amount

amt = int(input("Enter Sale Amount: "))

# checking conditions and calculating discount

**if**(amt>0):

**if** amt<=5000:

disc = amt\*0.05

**elif** amt<=15000:

disc=amt\*0.12

**elif** amt<=25000:

disc=0.2 \* amt

**else**:

disc=0.3 \* amt

**print**("Discount : ",disc)

**print**("Net Pay : ",amt-disc)

**else**:

**print**("Invalid Amount")

**Output**

Enter Sale Amount: 30000

Discount : 9000.0

Net Pay : 21000.0

Python | Example of Ternary Operator

**Python Ternary Operator Example:** Here, we are implementing a program that will read age of a person and check whether person is eligible for voting or not using ternary operator.  
Submitted by [Pankaj Singh](https://www.includehelp.com/Members/Pankaj-Singh.aspx), on October 06, 2018

**Given age of a person and we have to check whether person is eligible for voting or not using Ternary operator.**

**Syntax:**

[on\_true] if [expression] else [on\_false]

**Here,**

* [on\_true] is the statement that will be execute if the given condition [expression] is true.
* [expression] is the conditional expression to be checked.
* [on\_false] is the statement that will be executed if the given condition [expression] is false.

**Example:**

Input:

Enter Age :21

Output:

You are Eligible for Vote.

**Program:**

# input age

age = int(input("Enter Age :"))

# condition

status = "Eligible" **if** age>=18 **else** "Not Eligible"

# print message

**print**("You are",status,"for Vote.")

**Output**

Enter Age :21

You are Eligible for Vote.

# Python | Design a simple calculator using if elif (just like switch case)

**Python if else example**: here, we are going to implement program to design a **simple calculator using if, elif statements in Python that will perform add, subtract, multiply and divide operations**.  
Submitted by [Pankaj Singh](https://www.includehelp.com/Members/Pankaj-Singh.aspx), on October 06, 2018

**Given two numbers and we have to design a calculator type application that will perform add, subtract, multiply and divide operations using Python.**

**Example:**

Message:

Calculator

1.Add

2.Substract

3.Multiply

4.Divide

Input:

Enter Choice(1-4): 3

Enter A:10

Enter B:20

Output:

Product = 200

**Program:**

# menus

**print**("Calculator")

**print**("1.Add")

**print**("2.Substract")

**print**("3.Multiply")

**print**("4.Divide")

# input choice

ch=int(input("Enter Choice(1-4): "))

**if** ch==1:

a=int(input("Enter A:"))

b=int(input("Enter B:"))

c=a+b

**print**("Sum = ",c)

**elif** ch==2:

a=int(input("Enter A:"))

b=int(input("Enter B:"))

c=a-b

**print**("Difference = ",c)

**elif** ch==3:

a=int(input("Enter A:"))

b=int(input("Enter B:"))

c=a\*b

**print**("Product = ",c)

**elif** ch==4:

a=int(input("Enter A:"))

b=int(input("Enter B:"))

c=a/b

**print**("Quotient = ",c)

**else**:

**print**("Invalid Choice")

**Output**

Calculator

1.Add

2.Substract

3.Multiply

4.Divide

Enter Choice(1-4): 3

Enter A:10

Enter B:20

Product = 200

# Python | Program to print numbers from N to 1 (use range() with reverse order)

Here, we will learn how to **print numbers in reverse order** i.e. how to use range() method in reverse order/ decreasing steps.  
Submitted by **IncludeHelp**, on July 29, 2018

**Given the value of N and we have to print numbers from N to 1 in Python.**

## **range() Method**

This method is used to iterate a range values.

Simply, we use range(start, stop)

Let’s understand by an example, if we want to iterate any loop till a to b, then range statement will be range(a, b+1).

**Iterate in reverse order**

To iterate range in reverse order, we use 3 parameters

1. Start – start value
2. Stop – end value
3. Step – Increment/Decrement to the value

**Examples:**

1) To print numbers from B to A

for i in range(B, A-1, -1)

print i

2) To print numbers from B to A by escaping one number between

for i in range(B, A-1, -2)

print i

## **Program to print numbers from N to 1 in Python**

# Python program to print numbers

# from n to 1

# input the value of n

n = int(input("Enter the value of n: "))

# check the input value

**if** (n<=1):

**print** "n should be greater than 1"

exit()

# print the value of n

**print** "value of n: ",n

# print the numbers from n to 1

# message

**print** "numbers from {0} to {1} are: ".format(n,1)

# loop to print numbers

**for** i **in** range(n,0,-1):

**print** i

**Output 1**

Enter the value of n: 10

value of n: 10

numbers from 10 to 1 are:

10

9

8

7

6

5

4

3

2

1

# BMI (Body Mass Index) calculator in Python

In this Python article, we are going to learn **how to create a BMI (stands for - Body Mass Index) calculator**?  
Submitted by [Anoop Nair](https://www.includehelp.com/Members/anoop-nair.aspx), on November 09, 2017

**Given weight and height of a person and we have to find the BMI (Body Mass Index) using Python.**

**Example:**

**Input:**

Height = 1.75

Weigth = 64

**Output:**

BMI is: 20.89 and you are: Healthy

The steps that we will follow are:

* We will first get input values from user using input() and convert it to float using float().
* We will use the BMI formula, which is weight/(height\*\*2).
* Then print the result using conditional statements.
* Here we have used elif because once we satisfy a condition we don’t want to check the rest of the statements.

## **Program to calculate BMI in Python**

# getting input from the user and assigning it to user

height = float(input("Enter height in meters: "))

weight = float(input("Enter weight in kg: "))

# the formula for calculating bmi

bmi = weight/(height\*\*2)

# \*\* is the power of operator i.e height\*height in this case

**print**("Your BMI is: {0} and you are: ".format(bmi), end='')

#conditions

**if** ( bmi < 16):

**print**("severely underweight")

**elif** ( bmi >= 16 **and** bmi < 18.5):

**print**("underweight")

**elif** ( bmi >= 18.5 **and** bmi < 25):

**print**("Healthy")

**elif** ( bmi >= 25 **and** bmi < 30):

**print**("overweight")

**elif** ( bmi >=30):

**print**("severely overweight")

**Output**

# Python | Program to print Odd and Even numbers from the list of integers

In this article, we are going to **find odd and even numbers from the given list of integers using Python program**.  
Submitted by [Anamika Gupta](https://www.includehelp.com/Members/anamika-gupta.aspx), on July 17, 2018

**Logic:** To do this, we will simply go through the list and check whether the number is divisible by 2 or not, if it is divisible by 2, then the number is EVEN otherwise it is ODD.

**Program:**

# Give number of elements present in list

n=int(input())

# list

l= list(map(int,input().strip().split(" ")))

# the number will be odd if on diving the number by 2

# its remainder is one otherwise number will be even

odd=[]

even=[]

**for** i **in** l:

**if**(i%2!=0):

odd.append(i)

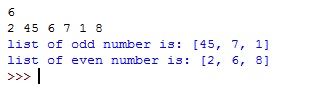
**else**:

even.append(i)

**print**("list of odd number is:",odd)

**print**("list of even number is:",even)

**Output**



# Python program to convert temperature from Celsius to Fahrenheit and vice-versa

In this Python program, we are going to learn **how to convert Fahrenheit to Celsius and Celsius to Fahrenheit?**  
Submitted by [Ankit Rai](https://www.includehelp.com/Members/Ankit-Rai.aspx), on June 06, 2019

**Formula used:**

**Celsius to Fahrenheit: °C= (5/9)\*(°F-32)**

**Fahrenheit to Celsius: °F= (9/5)\*(°C) + 32**

**Code:**

# Define a function to convert

# celsius temperature to Fahrenheit

**def** Celsius\_to\_Fahrenheit(c) :

f = (9/5)\*c + 32

**return** f

# Define a function to convert

# Fahrenheit temperature to Celsius

**def** Fahrenheit\_to\_Celsius(f) :

c = (5/9)\*(f - 32)

**return** c

# Driver Code

**if** \_\_name\_\_ == "\_\_main\_\_" :

c = 36

**print**(c, "degree celsius is equal to:",Celsius\_to\_Fahrenheit(c),"Fahrenheit")

f = 98

**print**(f,"Fahrenheit is equal to:",Fahrenheit\_to\_Celsius(f),"degree celsius")

**Output**

36 degree celsius is equal to: 96.8 Fahrenheit

98 Fahrenheit is equal to: 36.66666666666667 degree celsius

Python program for swapping the value of two integers

Here, we are going to learn **how to swap the value of two integers using third variable in Python?**  
Submitted by [Anuj Singh](https://www.includehelp.com/Members/Anuj-Singh.aspx), on June 25, 2019

In this article, we will learn **how to swap the value of two integers (or can be float)?**

The basic idea is:

* Storing the value of one variable (x) in a different variable (namely temporary - temp).
* Then changing the value of x by copying the value of y.
* Then changing the value of y by copying the value of temp.

Three simple steps, three simple variables and its all done.

So here is the code:

x = float(input('ENTER THE VALUE OF X: '))

y = float(input('ENTER THE VALUE OF Y: '))

temp = x

x = y

y = temp

**print**('X :', x,' Y :', y)

**Output:**

ENTER THE VALUE OF X: 10

ENTER THE VALUE OF Y: 20

X : 20.0 Y : 10.0

# Python program for swapping the value of two integers without third variable

Here, we are going to learn **how to swap the value of two integers without using third variable in Python?**  
Submitted by [Anuj Singh](https://www.includehelp.com/Members/Anuj-Singh.aspx), on June 24, 2019

In this article, we will learn **how to swap the value of two integers without using a different (third) variable**? In this problem, we are about to explore a new feature of the tuple in python.

One simple step, two different variables and it's all done.

So here is the code:

x = int(input("Enter the value of x :"))

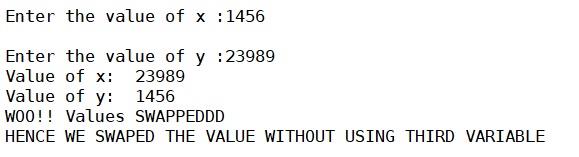
y = int(input("Enter the value of y :"))

(x,y) = (y,x)

**print**('Value of x: ', x, '\nValue of y: ', y, '\nWOO!! Values SWAPPEDDD')

**print**('HENCE WE SWAPED THE VALUE WITHOUT USING THIRD VARIABLE')

**Output:**



# Python program to convert meters into yards

**Meters to yards conversion**: Here, we are going to learn **how to convert meters into yards using python program?**  
Submitted by [Anuj Singh](https://www.includehelp.com/Members/Anuj-Singh.aspx), on July 11, 2019

There are many problems where we have to calculate the distance in yards at the end but initially, the measurements are given in meters. So for such type of problems, the solution is converting the initial parameters into yards and then performing operations on it and another option is to perform operations in meters and then convert the final answer from **meters to yards**.

So, here in this article, we are going to **write a Python code for converting the meters into yards**.

**Key:** 1 meter = 1.094 yards

**Example:**

Input:

Meters: 245

Output:

Yards: 268.03000000000003

**Python code to convert Meters to yards**

# Python program to convert Centimeter to Inches

# taking input

num = float(input("Enter the distance measured in centimeter : "))

# converting from cms to inches

""" 1 inch = 2.54 centimeters"""

inc = num/2.54

# printing the result

**print**("Distance in inch : ", inc)

# Python program to convert Centimeter to Inches

**Centimeter to Inches conversion**: Here, we are going to learn **how to convert centimeter to inches using python program?**  
Submitted by [Anuj Singh](https://www.includehelp.com/Members/Anuj-Singh.aspx), on July 11, 2019

There are many problems where we have to calculate the distance in inches at the end but initially, the measurements are given in centimeters. So for such type of problems, the solution is converting the initial parameters into inches and then performing operations on it and another option is to perform operations in centimeters and then convert the final answer from **centimeters to inches**.

So, here in this article, we are going to **write a Python code for converting the centimeters into inches**.

**Key:** 1 inch = 2.54 cms

**Example:**

Input:

Centimeter: 245

Output:

Inches: 96.45669291338582

**Python code to convert Centimeter to Inches**

# Python program to convert Centimeter to Inches

# taking input

num = float(input("Enter the distance measured in centimeter : "))

# converting from cms to inches

""" 1 inch = 2.54 centimeters"""

inc = num/2.54

# printing the result

**print**("Distance in inch : ", inc)

**Output**

First run:

Enter the distance measured in centimeter : 245

Distance in inch : 96.45669291338582

Second run:

Enter the distance measured in centimeter : 54

Distance in inch : 21.25984251968504

Third run:

Enter the distance measured in centimeter : 2.54

Distance in inch : 1.0

# Python program to find perfect number

**Checking perfect number**: What is perfect number? **How to check whether a given number is perfect number of not in Python?**  
Submitted by [Ankit Rai](https://www.includehelp.com/Members/Ankit-Rai.aspx), on July 25, 2019

Given an integer number and we have to check whether it is perfect number or not?

This Python program is used to find its all positive divisors excluding that number.

**Explanation:** For Example, 28 is a perfect number since divisors of 28 are 1, 2, 4,7,14 then sum of its divisor is 1 + 2 + 4 + 7 + 14 = 28.

**Note:** A perfect number is a positive integer that is equal to the sum of its proper positive divisors.

### **Python code to find perfect number**

**if** \_\_name\_\_ == "\_\_main\_\_" :

# initialisation

i = 2;sum = 1;

# take input from user and typecast into integer

n = int(input("Enter a number: "))

# iterating till n//2 value

**while**(i <= n//2 ) :

# if proper divisor then add it.

**if** (n % i == 0) :

sum += i

i += 1

# check sum equal to n or not

**if** sum == n :

**print**(n,"is a perfect number")

**else** :

**print**(n,"is not a perfect number")

**Output**

First run:

Enter a number: 28

28 is a perfect number

Second run:

Enter a number: 14

14 is not a perfect number

# importing the module

**import** calendar

# input the year

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

# printing the calendar

**print**("The calenar is...")

**print**(calendar.calendar(year))