**What is multiprocessing?**

Multiprocessing refers to the ability of a system to support more than one processor at the same time. Applications in a multiprocessing system are broken to smaller routines that run independently. The operating system allocates these threads to the processors improving performance of the system.

**Why multiprocessing?**

Consider a computer system with a single processor. If it is assigned several processes at the same time, it will have to interrupt each task and switch briefly to another, to keep all of the processes going.  
This situation is just like a chef working in a kitchen alone. He has to do several tasks like baking, stirring, kneading dough, etc.

**Multiprocessing: Running more than one process on a single processor**

**parallel processing: running a process on more than one processor.**

**import multiprocessing**

**def print\_cube(num):**

**print("Cube of a number is",num \* num \* num)**

**def print\_square(num):**

**print("squre of a number is",num \* num)**

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

**# creating processes**

**p1 = multiprocessing.Process(target=print\_square, args=(10, ))**

**p2 = multiprocessing.Process(target=print\_cube, args=(10, ))**

**# starting process 1**

**p1.start()**

**# starting process 2**

**p2.start()**

**# wait until process 1 is finished**

**p1.join()**

**# wait until process 2 is finished**

**p2.join()**

**# both processes finished**

**print("Done!")**

**Program2:**

**# importing the multiprocessing module**

**import multiprocessing**

**import os**

**def f1():**

**print("p1\_id: ",os.getpid())**

**def f2():**

**print("p2\_id: ",os.getpid())**

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

**# printing main program process id**

**print("main process id",os.getpid())**

**# creating processes**

**p1 = multiprocessing.Process(target=f1)**

**p2 = multiprocessing.Process(target=f2)**

**# starting processes**

**p1.start()**

**p2.start()**

**# wait until processes are finished**

**p1.join()**

**p2.join()**

**# both processes finished**

**print("Both processes finished execution!")**

**# check if processes are alive**

**print("p1 status is alive?:",p1.is\_alive())**

**print("p2 status is alive?:",p2.is\_alive())**