

shell takes commands from the user and executes kernel's functions.

Utilities – Utility programs that provide the user most of the functionalities of an operating systems.

A program is a piece of code which may be a single line or millions of lines. A computer program is usually written by a computer programmer in a programming language. For example, here is a simple program written in C programming language –

```
#include <stdio.h>
```

```
int main() {  
printf("Hello, World!  
");  
return 0;  
}
```

A computer program is a collection of instructions that performs a specific task when executed by a computer. When we compare a program with a process, we can conclude that a process is a dynamic instance of a computer program.

A part of a computer program that performs a well-defined task is known as an algorithm. A collection of computer programs, libraries and related data are referred to as a software.

Process Life Cycle

When a process executes, it passes through different states. These stages may differ in different operating systems, and the names of these states are also not standardized.

In general, a process can have one of the following five states at a time.

| S.N. | State & Description |
|------|---------------------|
| 1 | Start |
| 2 | Ready |
| | The proce |