**Day-5 (Assignment-3) (LINUX)**

# Q)Explain Absolute And Relative Path In Linux

## **Absolute Path**

An absolute path in Linux specifies the exact location of a file or directory from the root directory (/). It provides a complete path starting from the root and includes all intermediate directories down to the specific file or directory.

### **Characteristics of Absolute Paths:**

* Always start with a forward slash (/).
* Provides an unambiguous and fixed location of a file or directory.
* Useful for referencing files and directories anywhere in the file system regardless of the current working directory.
* Example: /home/user/documents/file.txt

#### In the example above:

* **/**  represents the root directory.
* **home** is a directory within the root directory.
* **user** is a subdirectory within **home**.
* **documents** is a subdirectory within **user**.
* **file.txt** is the file located within the **documents** directory.

## **Relative Path**

A relative path in Linux specifies the location of a file or directory relative to the current working directory. It does not start with a forward slash (/) and relies on the current directory as a starting point.

### **Characteristics of Relative Paths:**

* Do not start with a forward slash (/); instead, they begin with directory names or special symbols like ‘.’ (current directory) or ‘..’ (parent directory).
* Provide a path relative to the current working directory.
* Useful for referencing files and directories within the same branch of the directory tree.
* Example: ‘documents/file.txt’

#### In the example above:

* If the current working directory is /home/user/, then documents/file.txt refers to the file.txt located within the documents directory, which is a subdirectory of the current directory (/home/user/).

### **Key Differences**

* **Starting Point**: Absolute paths start from the root directory (/), providing an exact location from the top of the file system. Relative paths start from the current working directory, making them context-dependent.
* **Usage**: Absolute paths are used to specify a fixed location of files and directories throughout the file system. Relative paths are used to navigate within the current directory or its subdirectories.
* **Flexibility**: Absolute paths remain constant regardless of the current working directory, while relative paths change based on where the user or script is located within the file system.

### **Practical Use Cases**

* **Absolute Paths**: Useful when referencing critical system files, configuration files, or when writing scripts that need consistent file references.
* **Relative Paths**: Handy for navigating project directories, accessing files within a directory structure, or writing scripts that need to manipulate files relative to their execution location.