**Assignment 9**

**Q1. To what does a relative path refer?**

**Ans:** A relative path is a path that is relative to the current working directory or another known location. It specifies the location of a file or directory with respect to the current location of the program or user. Relative paths do not start with the root directory and are typically shorter and simpler than absolute paths. They can be useful when referring to files or directories within the same project or directory structure.

**Q2. What does an absolute path start with your operating system?**

**Ans:** An absolute path starts with the root directory of the operating system. In Windows, an absolute path starts with a drive letter followed by a colon, such as "C:" for the C drive.

**Q3. What do the functions os.getcwd() and os.chdir() do?**

**Ans:** The ‘os’ module, ‘os.getcwd()’ returns the current working directory as a string, and **os.chdir(path)** changes the current working directory to the specified **path**.

**Q4. What are the ‘.’ and ‘..’ folders?**

**Ans:** In a file system, ‘**.’** refers to the current directory and ‘**..’** refers to the parent directory.

**Q5. In C:\bacon\eggs\spam.txt, which part is the dir name, and which part is the base name?**

**Ans:** In **C:\bacon\eggs\spam.txt**, the directory name is **C:\bacon\eggs**, and the base name is **spam.txt**.

**Q6. What are the three “mode” arguments that can be passed to the open () function?**

**Ans:** The three "mode" arguments that can be passed to the **open ()** function are:

1. **"r"** - read mode, for reading files.
2. **"w"** - write mode, for writing to files. This mode truncates the file if it already exists or creates a new file if it does not exist.
3. **"a"** - append mode, for adding content to files. This mode does not truncate the file and instead adds new content to the end of the file.

**Q7. What happens if an existing file is opened in write mode?**

**Ans:** If an existing file is opened in write mode using the **open ()** function, the file is truncated to zero length i.e., all its contents are deleted. The file is then ready to be written with new data. If the file doesn't exist, a new file is created. Therefore, it is recommended to be cautious while opening a file in write mode to avoid data loss.

**Q8. How do you tell the difference between read () and readlines ()?**

**Ans:** The **read ()** method returns the entire contents of the file as a single string, whereas the **readlines ()** method returns a list of strings where each string is a line from the file. **read ()** reads the whole file at once and returns the string, while **readlines ()** reads the file line by line and returns a list where each line is an element.

**Q9. What data structure does a shelf value resemble?**

**Ans:** A shelf value resembles a dictionary. It has keys and values, and it is persistent, meaning that it can be stored to disk and retrieved later. However, unlike a dictionary, its values are stored on disk, rather than in memory, which allows it to handle larger amounts of data that might not fit in memory. Shelf values are part of the shelve module in Python.