Assignment 117: What purpose do the functions getpid( ), getppid( )getpppid( ) serve?

The functions getpid(), getppid(), and getppgrp() serve different purposes in the context of process management in Unix-like operating systems.

1. getpid(): This function returns the process ID (PID) of the current process. A process ID is a unique identifier assigned to a process by the kernel. It helps in distinguishing one process from another and allows the kernel to manage and schedule processes efficiently. Developers often use this function to track their application's processes or to communicate with other processes.

2. getppid(): This function returns the Parent Process ID (PPID) of the current process. PPID refers to the PID of the process that created or spawned the current process. It helps in understanding the process hierarchy and tracing the lineage of a process. By knowing the PPID, a process can determine its place in the process tree and establish communication with its parent or ancestors if needed.

3. getppgrp(): This function returns the process group ID (PGID) of the current process. A process group is a collection of related processes that are managed as a single unit. The PGID is a unique identifier assigned by the kernel to group related processes together. The getppgrp() function helps in managing and controlling a group of processes as a whole. For example, you can send signals to all processes in a group or change the terminal attributes for the entire group.

In summary, getpid() helps identify a process, getppid() provides information about the parent process, and getppgrp() gives insights into the process group a process belongs to. These functions play crucial roles in process management, debugging, and communication within a process hierarchy or group.