In this document is a list of every function ever implemented in the MPX project, and how to use them correctly. In order to use each function type in exactly what is specified in the bolded text, press enter, and follow the on-screen instructions.

**help:** upon entering “help” a list of all active commands should be displayed.

**version:** upon entering “version” the current version number of the MPX project should be displayed.

**getDate:** upon entering “getDate” the current date that the MPX OS is set to will be displayed in dd/mm/yyyy format.

**setDate:** upon entering “setDate” the system will ask you to enter the year in the format yyyy, then the month in the format mm, and finally the day in the format dd.

**getTime:** upon entering “getTime” the current time that the MPX OS is set to will be displayed in the format hh:mm:ss.

**setTime:** upon entering “setTime” the will ask you to enter the hour in the format hh, then the minutes in the format mm, and finally the seconds in the format ss.

**createPCB (cannot be used):** upon entering “createPCB” the system will ask you to enter a name for the PCB that is no longer than 20 characters, the system will then ask you to enter the class for the PCB (either ‘a’ or ‘s’), and finally the system will then ask you to enter a priority for the PCB that is between 0 and 9, including both 0 and 9.

**deletePCB (cannot be used):** upon entering “deletePCB” the system will then ask for the name of the PCB you wish to delete, which must be no more than 20 characters long.

**blockPCB (cannot be used):** upon entering “blockPCB”, the system will for the name of the PCB to block. Enter the PCB name and press enter. The name must be no more than 20 characters long.

**unblockPCB (cannot be used):** upon entering “unblockPCB” the system will ask for the name of the PCB that you would like to unblock, which must be no more than 20 characters long.

**suspendPCB:** upon entering “suspendPCB” the system will ask for the name of the PCB to suspend, which must be no more than 20 characters long.

**resumePCB:** upon entering “resumePCB” the system will ask for the name of the PCB to unsuspend, which must be no more than 20 characters long.

**setPCBPriority:** upon entering “setPCBPriority” the system will ask for a new priority, which is a number from 0 to 9 (including 0 and 9).

**showPCB:** upon entering “showPCB” the system will ask for the name of the PCB to show. Enter the name, which must be no longer than 20 characters in length.

**showReady:** upon entering “showReady” the system will display every PCB that currently resides in the ready queue.

**showSuspendedReady:** upon entering “showSuspendedReady” the system will display every PCB that currently resides in the suspended ready queue.

**showSuspendedBlocked:** upon entering “showSuspendedBlocked” the system will display every PCB that currently resides in the suspended blocked queue.

**showBlocked:** upon entering “showBlocked” the system will display every PCB that currently resides in the blocked queue. This

**showAll:** upon entering “showAll” all processes will be shown, with their priority, their state, and their status.

**yield (cannot be used):** upon entering “yield” the commhand function will give the CPU up to the next process.

**loadr3:** upon entering “loadr3” the system will create 5 new processes “Process1”, “Process2”, “Process3”, “Process4”, and “Process5” all in the suspended ready state. In order for any of these processes to be executed, they must be resumed one at a time using the “resumePCB” function. These processes will then interleave their execution with the command handler(“Commhand”) and the “Idle” process.

**infinitePCB:** upon entering “infinitePCB” the system will create a PCB named “infinite” that will execute indefinitely.

**allocateMemory (cannot be used):** upon entering “allocateMemory” the system will ask for an amount of memory to allocate. The system will then allocate that amount of memory in bytes, as well as any extra memory it needs to keep track of the memory block.

**freeMemory (cannot be used):** upon entering “freeMemory” the system will ask for the address of the block of memory that the user would like to free. The system will then free the memory allocated at that memory location and merge that block with any other contiguous blocks of free memory.

**isEmpty (cannot be used):** upon entering “isEmpty” will let the user know if the allocatedMemory list is empty.

**showFreeMemory:** upon entering “showFreeMemory” the system will show the free memory in the heap.

**showAllocatedMemory:** upon entering “showAllocatedMemory” the system will show the allocated memory in the heap.

**Quit:** upon entering “quit” the system will ask for the user to confirm the quit process by either entering “y” for yes(shutdown) or “n” for no(cancel). Upon entering “y” MPX OS will shutdown gracefully.