

User Manual

Software version: 6.0

For version 5.0 of the MPX Project, there are 25 user commands currently. These

commands are: "version", "help", "quit", "getDate", "setDate", "getTime", "setTime", "deletePCB", "suspendPCB", "resumePCB", "setPCBPRIORITY", "showPCB", "showReady", "showSuspendedReady", "showSuspendedBlocked", "showBlocked", "showAll", "loadr3", and "alarm", "initializeHeap", "allocateMemory", "freeMemory", "showFreeMemory", "showAllocatedMemory", "isEmpty"

Below will be an in-depth explanation about how to use each of these commands.

Commands:

help: The help command can be accessed by typing "help" into the terminal. This command

will provide a description of each available command.

version: This command will provide the current version of the software.

quit: This command will shut the system down. This command cannot be used until

setDate/setTime have been finished.

getDate: This command will provide the user with the date that the system currently has set.

setDate: This command allows the user to change the date that the system has set. The system

will prompt the user to first input the desired year in the format: yyyy. Next, the user is

prompted for the month in the format: mm. Finally, the system will prompt the user for

the day of month in the format: dd. Once all three values have been set, the system will

let the user know that the date has been set. The system will also let the user know

whether or not the year they input is a leap year or not.

getTime: This command will provide the user with the time that the system currently has set.

setTime: This command allows the user to change the time that the system has set. The user

will first be prompted for the hour input in the format: hh. The system will then prompt

the user for the minutes input in the format: mm. Finally, the user will be prompted for

the seconds input in the format: ss. Once all three values have been given to the system,

the system will let the user know that the time has been set.

createPCB(removed for R4): This command is used to create a process. To run the command, the user

types **createPCB**, and is prompted to enter process name, class, and priority.

suspendPCB: This command is used to suspend a process and add the process to the suspended queue. To run the command, user types **suspendPCB** and then the name of the process.

resumePCB: This command is used to resume a process and add the process to the resumed queue. To run the command, user types **resumePCB** and then the name of the process.

deletePCB: The command is used to delete a process in a queue. To run the command, type **deletePCB** and then enter a process name when prompted to delete the specified process.

blockPCB(removed for R4): The command is used to change the running state of a process to a blocked state. To block a process, simply type **blockPCB** and then enter the **process name** to block as prompted.

unblockPCB(removed for R4): This command is the opposite of blockPCB. Use this command to unblock a process.

setPCBPRIORITY: To change a process's priority, the user types **setPCBPRIORITY** and then the user is prompted to enter a priority number between 0 and 9 inclusive.

showPCB: This command displays a process's name, class, state, suspended status, and priority. Simply type **showPCB** to run the command, and enter the name of the process you wish to be shown when prompted.

showReady: This command displays the name, class, state, suspended status, and priority of all

processes in the ready queue. Simply type **showReady** to run the command.

showBlocked: This command displays the name, class, state, suspended status, and priority of all processes in the blocked queue. Simply type **show Blocked** to run the command.

showAll: This command displays the name, class, state, suspended status, and priority for all processes in all queues. Simply type **showAll** to run the command.

showSuspendedReady: This command displays the name, class, state, suspended status, and priority of all processes in the suspended ready queue. Simply type **showSuspendedReady** to run the command.

showSuspendedBlocked: This command displays the name, class, state, suspended status, and priority of all processes in the suspended blocked queue. Simply type **showSuspendedBlocked** to run the command.

loadr3: This command will load 5 processes into the suspended ready queue. Each process that is added to the queue must be resumed in order to execute. Simply type **loadr3** to run the command.

yield(removed for R4): This command will generate an interrupt to the interrupt handler. Simply type **yield** to run the command.

addAlarm: This command will allow the user to create an alarm, and will be able to track multiple alarms. This command will ask the user to enter a name and time for the alarm they wish to create. Simply type **addAlarm** to run the command.

initializeHeap: This command initializes the heap for the process. Type **initializeHeap** and press enter to

run the command. Then input size of the heap in bytes as prompted.

allocateMemory: This command allocates memory. To run the command, type **allocateMemory** and press enter. Input size of the memory as prompted.

freeMemory: This command frees memory. Simply type **freeMemory** and press enter to input memory address to free.

showFreeMemory: This command prints inoder free blocks of memory. Simply type **showFreeMemory** and press enter to run the command.

showAllocatedMemory: This command prints inoder allocated blocks of memory. Simply type **showAllocatedMemory** and press enter to run the command.

IsEmpty: This commands checks if there is no allocated memory. Type **isEmpty** and press enter to run the command.

All Module 6 functions are internal functions. Can't be run by user.