
User's Manual

This is the user manual for the MPX OS, documentation for various versions are supplemented below

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Author's Notes

The manual serves as a reference for beginners in order to operate the system -See

Programmers manual for a more detailed insight

Name

Shutdown

SYNTAX

Int sht_dwn(void)

DESCRIPTION

Allows for the user to exit the command handler and quit the OS

EXAMPLES

Please select one of the options below

1) Help
2) Version
3) Date & Time
4) Processes [1]/[2]
5) Processes [2]/[2]
6) LoadR3PCB
7) Allocate Memory
8) Free Memory
9) Show Allocated Memory
10) Show Free Memory
11) Shutdown

-> 11

Are you sure?

1) Yes
2) No

->1

Shutting down…

->2

Displays commhand again

SEE ALSO

shutdown

Name

Help

SYNTAX

help_command(void)

DESCRIPTION

Writes what each command does to the screen

EXAMPLES

Please select one of the options below

1) Help
2) Version
3) Date & Time
4) Processes
5) Shutdown

Which command do you need help with?

1) Version
2) Date & Time Commands
3) Process commands [1]/[2]
4) Process commands [2]/[2]
5) Shutdown

-> 1

This command will get you the version of the OS you are currently using

-> 2

-> 1 Get Time

This command will get you the time that is currently set

-> 2 Set Time

This command will allow you to set the time of the clock

-> 3 Get Date

This command will get you the date that is currently set

-> 4 Set Date

This command will allow you to set the date of the clock

-> 5 Set Alarm

This command will allow you to set an alarm

-> 6

Allows user to go back a page

-> 3

-> 1 Delete Process

This command will delete a process

-> 2 Block Process

This command will put the specified process in the blocked state

-> 3 Unblock Process

This command moves a process from the blocked state to the unblocked state

-> 4 Suspend Process

This command will put a process in the suspended state

-> 5 Resume Process

This command will move a suspended process into the unsuspended state

-> 6 Set Process Priority

This command will delete a process

-> 7 Go Back

This command will delete a process

-> 8 Go to next Page

This command will delete a process

-> 4

->1 Show Specific Process

This command will show a specific process when given the name

->2 Show All Ready Processes

This command will show all the processes currently in the queue

->3 Show All Blocked Processes

This command will show all the processes currently in this blocked queue

->4 Show All Processes

This command will show all processes

NAME

version

SYNTAX

get_version(void)

DESCRIPTION

Shows what version user is currently working with and the compiled date

EXAMPLES

Please select one of the options below

1) Help
2) Version
3) Date & Time
4) Processes [1]/[2]
5) Processes [2]/[2]
6) LoadR3PCB
7) Allocate Memory
8) Free Memory
9) Show Allocated Memory
10) Show Free Memory
11) Shutdown

->2

Current version is: R5

Compiled on: mm-dd-yy

NAME

Get Time

SYNTAX

get_time(void)

DESCRIPTION

Reads the current time for the user and prints it out

EXAMPLES

Please select one of the options below

1) Help
2) Version
3) Date & Time

4) Processes [1]/[2]
5) Processes [2]/[2]
6) LoadR3PCB
7) Allocate Memory
8) Free Memory
9) Show Allocated Memory
10) Show Free Memory
11) Shutdown

-> 3

Date & Time commands below:

1) Get Time
2) Set Time
3) Get Date
4) Set Date
5) Set Alarm
6) Go Back

-> 1

Prints time in format HH:MM:SS

NAME

Set Time

SYNTAX

set_time(void)

DESCRIPTION

Reads the current time for the user and prints it out

EXAMPLES

Please select one of the options below

1) Help
2) Version
3) Date & Time
4) Processes [1]/[2]
5) Processes [2]/[2]
6) LoadR3PCB
7) Allocate Memory
8) Free Memory
9) Show Allocated Memory

10) Show Free Memory
11) Shutdown

-> 3

Date & Time commands below:

1) Get Time
2) Set Time
3) Get Date
4) Set Date
5) Set Alarm
6) Go Back

->2

Please enter the hour

->8

Please enter the minutes

->39

Please enter the seconds

->50

The time has successfully changed

NAME

Get Date

SYNTAX

get_date(void)

DESCRIPTION

Displays the current date for the user in format DD:MM:YY

EXAMPLES

Please select one of the options below

1) Help
2) Version
3) Date & Time
4) Processes [1]/[2]

5) Processes [2]/[2]
6) LoadR3PCB
7) Allocate Memory
8) Free Memory
9) Show Allocated Memory
10) Show Free Memory
11) Shutdown
-> 3

Date & Time commands below:

1) Get Time
2) Set Time
3) Get Date
4) Set Date
5) Set Alarm
6) Go Back

->3

2-23-23 (Displays current date)

NAME

Set Date

SYNTAX

set_date(void)

DESCRIPTION

Allows the user to set whichever date they want but for the year it only takes the last two figures so *23* for *2023*

EXAMPLES

Please select one of the options below

1) Help
2) Version
3) Date & Time
4) Processes [1]/[2]
5) Processes [2]/[2]
6) LoadR3PCB
7) Allocate Memory
8) Free Memory
9) Show Allocated Memory
10) Show Free Memory

11) Shutdown

Date & Time commands below:

1) Get Time
2) Set Time
3) Get Date
4) Set Date
5) Set Alarm
6) Go Back

->4

Please input the day

->5
Day successfully entered

Please input the month

->6

Month successfully entered

Please input the year

->20

Then returns to commhand and user can choose get date option to retrieve their desired date

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NAME

Set Alarm

SYNTAX

set_alarm(void)

DESCRIPTION

Sets an alarm that generates an interrupt whenever the desired time is reached

Please Input the Message for the alarm

->alarm1

*Please input the hour(s) value

->20

*Please input the minute(s) value

->13

*Please input the second(s) value

->40

NAME

Delete PCB

SYNTAX

delete_pcb(char* pcb_name)

DESCRIPTION

Allows the user to enter the name of the process to delete.

EXAMPLES

->4 Processes [1]/[2]
1) Delete Process
2) Block Process
3) Unblock Process
4) Suspend Process
5) Resume Process
6) Set Process Priority
7) Go Back

->1

Please enter the name of the process to delete

->PCB1

NAME

Block PCB

SYNTAX

block_pcb(char* pcb_name)

DESCRIPTION

Allows the user to enter the name of the process to block

EXAMPLES

->4 Processes [1]/[2]
1) Delete Process
2) Block Process
3) Unblock Process
4) Suspend Process
5) Resume Process
6) Set Process Priority
7) Go Back

->2

Please enter the name of the process to block

->PCB1

NAME

Unblock PCB

SYNTAX

unblock_pcb(char* pcb_name)

DESCRIPTION

Allows the user to enter the name of the process to unblock

EXAMPLES

->4 Processes [1]/[2]
1) Delete Process
2) Block Process
3) Unblock Process
4) Suspend Process
5) Resume Process
6) Set Process Priority

7) Go Back

->3

Please enter the name of the process to unblock

->PCB1

NAME

Suspend PCB

SYNTAX

suspend_pcb(char* pcb_name)

DESCRIPTION

Allows the user to enter the name of the process to suspended

EXAMPLES

->4 Processes [1]/[2]
1) Delete Process
2) Block Process
3) Unblock Process
4) Suspend Process
5) Resume Process
6) Set Process Priority
7) Go Back

->4

Please enter the name of the process to suspend

->PCB1

NAME

Resume PCB

SYNTAX

resume_pcb(char* pcb_name)

DESCRIPTION

Allows the user to enter the name of a process to unsuspend

EXAMPLES

->4 Processes [1]/[2]
1) Delete Process
2) Block Process
3) Unblock Process
4) Suspend Process
5) Resume Process
6) Set Process Priority
7) Go Back

->5

Please enter the name of the process to unsuspend

->PCB1

NAME

Set Process Priority

SYNTAX

set_pcb_prio(*char pcb_name, int priority)

DESCRIPTION

Allows the user to change the priority of a created process

EXAMPLES

->4 Processes [1]/[2]
1) Delete Process
2) Block Process
3) Unblock Process
4) Suspend Process
5) Resume Process
6) Set Process Priority
7) Go Back

->6

Please enter the name of the process to change priority:

->PCB1

Please enter an integer for the new priority, ranging from [0] to [9]:

->4

NAME

Show Specific Process

SYNTAX

show _pcb(char* pcb_name)

DESCRIPTION

Allows the user to enter the process name to show

EXAMPLES

->5 Processes [2]/[2]

1) Show Specific Processes
2) Show Ready Processes
3) Show Blocked Processes
4) Show All Processes
5) Go Back

->1

->PCB2

PCB2

NAME

Show Ready Process

SYNTAX

show _ready()

DESCRIPTION

Allows the user to see the readied process

EXAMPLES

->5 Processes [2]/[2]

1) Show Specific Processes
2) Show Ready Processes
3) Show Blocked Processes
4) Show All Processes
5) Go Back

->2

PCB2

NAME

Show Blocked Process

SYNTAX

show _blocked()

DESCRIPTION

Allows the user to see the blocked process

EXAMPLES

->5 Processes [2]/[2]

1) Show Specific Processes
2) Show Ready Processes
3) Show Blocked Processes
4) Show All Processes
5) Go Back

->3

PCB3

NAME

Show All Process

SYNTAX

show _all()

DESCRIPTION

Allows the user to see all process

EXAMPLES

->5 Processes [2]/[2]

1) Show Specific Processes
2) Show Ready Processes
3) Show Blocked Processes
4) Show All Processes
5) Go Back

->4

PCB2 PCB3

Name

Load R3 PCBs

Syntax

LoadR3();

LoadR3PCBs();

Description

Loads the tests processes in R3, R4 passes them automatically to the cpu to yield the CPU to each process

Examples

1) Help
2) Version
3) Date & Time
4) Processes [1]/[2]
5) Processes [2]/[2]
6) LoadR3PCB
7) Allocate Memory
8) Free Memory
9) Show Allocated Memory
10) Show Free Memory
11) Shutdown

->6 Load R3PBs

Name

Allocate Memory

Syntax

Memory_alloc();

Description

Allocates a user specified block of memory in the heap

Examples

1) Help
2) Version
3) Date & Time
4) Processes [1]/[2]
5) Processes [2]/[2]
6) LoadR3PCB
7) Allocate Memory
8) Free Memory
9) Show Allocated Memory
10) Show Free Memory
11) Shutdown

->7
*How much memory would you like to allocate
->11
Memory Allocated successfully!
The address of the previousl allocated memory is:d000014

Name

Free Memory

Syntax

memory_free();

Description

Frees a user specified block of memory in the heap

Examples

1) Help
2) Version
3) Date & Time
4) Processes [1]/[2]
5) Processes [2]/[2]
6) LoadR3PCB
7) Allocate Memory
8) Free Memory
9) Show Allocated Memory
10) Show Free Memory
11) Shutdown

->8
Please enter the address of the memory block you would like to free
-> d000014
Memory freed successfully!

Name

Show Allocated Memory

Syntax

Show_alloc_mem();

Description

Shows the allocated memory block

Examples

1) Help
2) Version
3) Date & Time
4) Processes [1]/[2]
5) Processes [2]/[2]
6) LoadR3PCB
7) Allocate Memory
8) Free Memory
9) Show Allocated Memory
10) Show Free Memory

11) Shutdown

->9
*Allocated Memory: *
Memory Address: d000014
Memory Size: 11

Name

Show Free Memory

Syntax

Show_free_mem();

Description

Shows the allocated memory block

Examples

1) Help
2) Version
3) Date & Time
4) Processes [1]/[2]
5) Processes [2]/[2]
6) LoadR3PCB
7) Allocate Memory
8) Free Memory
9) Show Allocated Memory
10) Show Free Memory
11) Shutdown

->10
*Free Memory: *
*Allocated Memory: *
Memory Address: d000033
Memory Size: 49969
