OREO OS

User Manual | Version 1.0

Course Information

- *7th February 2020*
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- *CS 450 - Operating Systems Structure*

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Introduction

Oreo OS is a software project that is responsible for Memory Protection Extension (MPX) featuring. The team handled designing a user interface to let the user communicate with the system via using virtual serial port and to let the user accomplish some basic tasks such as getting time, date and time modification, get version, get help and lastly shut down the system. The team developed the system to be able to interact with the user easily and to be functional.

Main Menu

The OREO OS starts the system by showing the main menu, which has some commands that the user can choose from depending on what they would like to do. The user could type the name of the command in lower case.

```
                          Oreo   OS
                          Main Menu
        ----------------------------------------------------------
        1. help              10. loadr3           19. create pcb
        2. get date          11. yield            20. delete pcb
        3. set date          12. suspend          21. block pcb
        4. get time          13. resume           22. unblock pcb
        5. set time          14. set priority
        6. version           15. show pcb
        7. shutdown          16. show all processes
        8. change color      17. show ready processes
        9. clear             18. show blocked processes
Please type exact command seen above (include spaces) in all lowercase:
```

Available Commands

Help

Help command can be launched by choosing number 1 from the main menu. It has an explanation of every command and its functionality. As it also provides the user the instructions of using Oreo OS and ask the user if they want to run the menu again.

```
.....................................................
               Welcome to Oreo Operating System
.....................................................
 NOTE: all commands are lowercase, include spaces for some.
 If you'd like to see the commands only, type: menu
User's Manual
Commands that can be selected
sdvSD
 1. Help
When help is entered into the system, an explanation of each command will be displayed. The information wil
l consist of what each command will perform and how to select the command.
 2. Get Date
When getdate or get date is entered into the system, the command get date is selected. This command will re
turn the date.
 3. Set date
When setdate or set date is entered into the system, the command set date is selected. This command allows
the user to set a value for the date
 4. Get Time
When gettime or get time is entered into the system, the command get time is selected. This command will re
turn the time.
 5. Set time
When settime or set time is entered into the system, the command set time is selected. This command allows
the user to set a value for the time
 The Date Format:
 YEAR       __ 2 digit 00-99
 MONTH      __ 2 digit 01-12
 DAY is     __ 2 digit 01-31
 HOUR is    __ 2 digit 00-23
 MINUTES    __ 2 digit 00-59
 SECONDS    __ 2 digit 00-59
 6. Version
When version is entered into the system, the command version is selected. This command will display the cur
rent version the system s on and the date that it was completed.
 7. Shutdown
When shutdown is entered into the system, the command shutdown is selected. This command will then question
```

Get Date

Get Date command can be launched by choosing number 2, its purpose is to show the current Date.

```
                    Oreo OS
--------------------------------------------------
                    Main Menu
1. Help
2. Get Date
3. Set Date
4. Get Time
5. Set Time
6. Version
7. Shutdown
8. Change color
2

Date is Feb-6-2020
 Run menu again? Yes or no.
```

Set Date

Set Date command can be launched by choosing number 3 from the main menu, its purpose is to receive an input from the user for year, month and day.

```
                    Oreo OS
--------------------------------------------------
                  Main Menu
1.  Help
2.  Get Date
3.  Set Date
4.  Get Time
5.  Set Time
6.  Version
7.  Shutdown
8.  Change color
3

Enter year 00-99                  20

20
Enter Month 01-12        12

12
Enter DAY 01-31         01

1
Date is Dec-1-2020
 Run menu again? Yes or no.
```

Get Time

Get Time command can be launched by choosing number 4 from the main menu, its purpose Is to show the current time.

```
                    Oreo OS
--------------------------------------------------
                  Main Menu
1.  Help
2.  Get Date
3.  Set Date
4.  Get Time
5.  Set Time
6.  Version
7.  Shutdown
8.  Change color
4

Time is 1 :22 :04    am
 Run menu again? Yes or no.
```

Set Time

Set Time command can be launched by choosing number 5 from the main menu, its purpose is to receive an input from the user for hour, minutes and seconds.

```
                    Oreo OS
--------------------------------------------------
                    Main Menu
1.  Help
2.  Get Date
3.  Set Date
4.  Get Time
5.  Set Time
6.  Version
7.  Shutdown
8.  Change color
5

Enter Hours 00-23                          02

2
Enter Minutes 00-59          12

12
Enter Second 00-59                         12

12
Time is 2 :12 :12    am
 Run menu again? Yes or no.█
```

Version

Get Version command can be launched by choosing number 6 from the main menu, its purpose is to show the release version of OREO OS

```
                    Oreo OS
--------------------------------------------------
                    Main Menu
1.  Help
2.  Get Date
3.  Set Date
4.  Get Time
5.  Set Time
6.  Version
7.  Shutdown
8.  Change color
6


Oreo Operating System 1.0
 Run menu again? Yes or no.█
```

ShutDown

ShutDown command can be launched by choosing number 7 from the main menu, its purpose is to exit from OREO OS once receiving a confirmation from the user.

```
               Oreo OS
-----------------------------------------
               Main Menu
1. Help
2. Get Date
3. Set Date
4. Get Time
5. Set Time
6. Version
7. Shutdown
8. Change color
7


Are you sure to shut down the system?  (yes/y,no/n)y

klogv: Starting system shutdown procedure...
klogv: Shutdown complete. You may now turn off the machine. (QEMU: C-a x)

```

Change Color

Change Color command can be launched by choosing number 78from the main menu, its purpose is to show the user some color options provided and choose in which color they want the OREO OS to perform in.

```
               Oreo OS
-----------------------------------------
               Main Menu
1. Help
2. Get Date
3. Set Date
4. Get Time
5. Set Time
6. Version
7. Shutdown
8. Change color
8

What color would you like?1. Blue2. Red3. Green4. Yellow5. Reset color
```
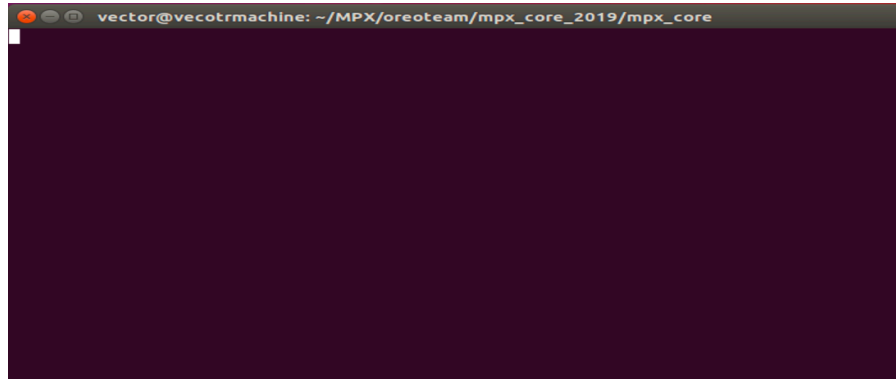
```
               Oreo OS
-----------------------------------------
               Main Menu
1. Help
2. Get Date
3. Set Date
4. Get Time
5. Set Time
6. Version
7. Shutdown
8. Change color
```

Clear

Clear command can be launched by typing clear all in lowercase from the main menu, its purpose is to clear all the history of commands executed.

PCB Menu

Suspend

Suspend command can be launched by typing suspend in lowercase , its purpose is to allow the user to suspend a PCB


```
 Please type a correct command.
suspend


please enter the name of process you want to suspend
proc1


 Error: incorrect name
```

Resume

Resume command can be launched by typing resume in lowercase, its purpose is to allow the user to resume a PCB

```
 Please type a correct command.
resume

please enter the name of process you want to resume
proc1

 Error: incorrect name.█
```

Set Priority

Set Priority command can be launched by typing set priority in lowercase, its purpose is to allow the user to set the priority of a pcb

```
 Please type a correct command.
set priority

please enter the name of process you want to set priority
proc1

please enter the new priority of the process(must be integer from 0 to 9)
1
```

Show PCB

Show PCB command can be launched by typing show pcb all in lowercase, its purpose is to show a PCB

```
 Please type a correct command.
show pcb


please enter the name of process you want to show
process 4



 Name: process 4
 Class: 101
 State: 1
 Suspended Status: 0
 Priority: 4
```

Show All Processes

Show all Processes command can be launched by typing show all processes all in lowercase, its purpose is to show all processes whether they are blocked or ready.

```
 Please type a correct command.
show all processes

the detials of all processes in both ready and block queue are:

 Ready Queue:
 Name: process 4
 Class: 101
 State: 1
 Suspended Status: 0
 Priority: 1
 Blocked Queue:
 No PCB in blocked queue.
```

Show Ready Processes

Show Ready Processes command can be launched by typing show ready processes all in lowercase, its purpose is to show all ready processes

```
 Please type a correct command.
show ready processes


the processes in ready queue are:

 Name: process 4
 Class: 101
 State: 1
 Suspended Status: 0
 Priority: 4
```

Show Blocked Processes

Show Blocked Processes command can be launched by typing show blocked processes all in lowercase, its purpose is to show all blocked processes

```
 Please type a correct command.
show blocked processes


the processes in blocked queue are:

 No PCB in blocked queue.
```

Create PCB

Create PCB command can be launched by typing create pcb all in lowercase, its purpose is to allow the user to create a new PCB

```
 Please type a correct command.
create pcb

please enter the name of the new process you want to create
process 6

please enter the priority of the new process you want to create(must be 0-9)
5

please enter the class of the new process you want to create(100 is system, 101 is user)
101

allocate the process sucessfully
Process created successfully
```

Delete PCB

Delete PCB command can be launched by typing delete pcb all in lowercase , its purpose is to allow the user to delete an existing PCB

```
 Please type a correct command.
delete pcb

please enter the name of process you want to delete
process 4

delete process successful
```

Block PCB

Block PCB command can be launched by typing block pcb all in lowercase , its purpose is to block a PCB

```
 Please type a correct command.
block pcb


please enter the name of process you want to block
process 6
```

Unblock PCB

unblock PCB command can be launched by typing unblock pcb all in lowercase , its purpose is to allow the user to unblock a blocked PCB.

```
 Please type a correct command.
unblock pcb

please enter the name of process you want to unblock
process 6
```

YIELD

YIELD command can be launched by typing yield all in lowercase from the main menu, its purpose is to cause command to yield to other processes.

```
 Please type a correct command.
yield

proc1 dispatchedproc2 dispatchedproc3 dispatchedproc4 dispatchedproc2 dispatchedproc3 dispatchedproc4 dispa
tchedproc3 dispatchedproc4 dispatchedproc4 dispatched
```

LOADR3

LoadR3 command can be launched by typing loadr3 all in lowercase from the main menu, its purpose is to load all r3 process into memory in a suspended ready state at any priority.

```
 Please type a correct command.
loadr3

allocate the process sucessfully
Process created successfully

allocate the process sucessfully
Process created successfully

allocate the process sucessfully
Process created successfully

allocate the process sucessfully
Process created successfully

 Process already exists.
```