OREO OS

User Manual | Version 1.0

Course Information

- *7th February 2020*
- *Dr. Camille Hayhurst*
- *CS 450 - Operating Systems Structure*

Team Members

- *Christine Fryling*
- *Jacquelyn von Staden*
- *Liye Yang*
- *Raneem AlGhawi*

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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 choose any command by entering the number that is associated with the command, it has to be within the range of 1-8.

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
.........................................................
User's Manual
Commands that can be selected
sdvSD
 1. Help
 When 1 is entered into the system, an explanation of each command will be displayed. The information wi
ll consist of what each command will perform and how to select the command.
 2. Get Date
 When 2 is entered into the system, the command get date is selected. This command will return the date.
3. Set date
When 3 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 4 is entered into the system, the command get time is selected. This command will return the time.
5. Set time
When 5 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 6 is entered into the system, the command version is selected. This command will display the curren
t version the system s on and the date that it was completed.
7. Shutdown
When 7 is entered into the system, the command shutdown is selected. This command will then question if
the user really wants to shutdown and if yes, will then proceed to shutdown and if not will return user
to menu.
 Run menu again? Yes or no.
```

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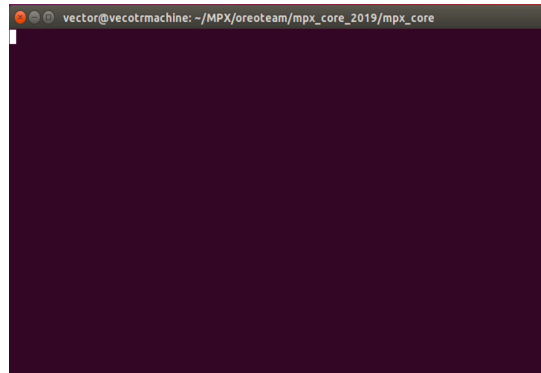
```
                Oreo OS
-----------------------------------------
                Main Menu
1. Help
2. Get Date
3. Set Date
4. Get Time
5. Set Time
6. Version
7. Shutdown
8. Change color
```
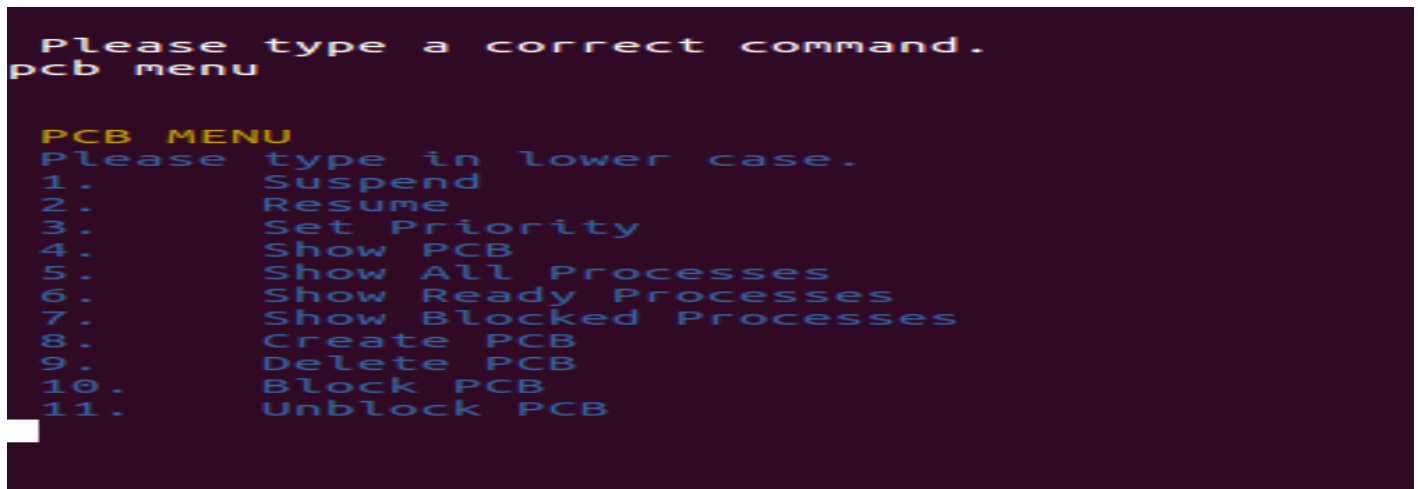
Clear

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

Process Control Block Menu can be launched by typing pcb from the main menu, its going to show a list of options that can be chosen.

Suspend

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

Resume

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

Set Priority

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

Show PCB

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

Show All Processes

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

Show Ready Processes

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

Show Blocked Processes

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

Create PCB

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

Delete PCB

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

Block PCB

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

Unblock PCB

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

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.

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.

Run tests

Run tests command can be launched by typing run tests all in lowercase from the main menu, its purpose is to run a number of tests to ensure the program has a good functionality.