**Task 6: User Documentation**

**The operating system required to run the software application**

The operating system required to run this software application is Linux Mint.

Other system systems this software application can run on is MacOS and also Windows OS.

**The commands to run the software application**

The user must use the command bash Subnetting.sh – which is the name of the file, and it must be done in the terminal on Linux Mint which will then open Gedit or nano text file.

The user must enter the number 1 on the menu screen for option 1 which will then display the subnetting details and this will then allow the user to enter the number of subnets based on their decision and it will show user all related information based on subnets.

**The values that can be entered in the software application**

The values that can be entered within the software application are 1 to 64.

**The output displayed for each value entered in the software application**

**Option 1:** Display subnetting details

**Valid inputs:**

* User must enter number 1 for where it says, ‘Enter Option’.
* It will then say, “Enter number of subnets” which will allow user to enter numbers 1 to 64
* Then the user will see all the subnet details of the number they picked

When user enters number 1 for number of subnets, the following details will appear on the screen.

**Output displayed below:**

Bits Borrowed: 0

Subnets needed: 1

Address per subnet: 256

Hosts per subnet: 254

Subnet Mask: 255.255.255.0

Prefix: /24

When user enters number 2 for number of subnets, the following details will appear on the screen.

**Output displayed below:**

Bits Borrowed: 1

Subnets needed: 2

Address per subnet: 128

Hosts per subnet: 126

Subnet Mask: 255.255.255.128

Prefix: /25

When user enters numbers 3 or 4 for number of subnets, the following details will appear on the screen.

**Output displayed below:**

Bits Borrowed: 2

Subnets needed: 4

Address per subnet: 64

Hosts per subnet: 62

Subnet Mask: 255.255.255.192

Prefix: /26

When user enters numbers from 9-16 for number of subnets, the following details will appear on the screen.

**Output displayed below:**

Bits Borrowed: 3

Subnets needed: 8

Address per subnet: 32

Hosts per subnet: 30

Subnet Mask: 255.255.255.224

Prefix: /27

When user enters the numbers from 17-32 for number of subnets, the following details will appear on the screen.

**Output displayed below:**

Bits Borrowed: 4

Subnets needed: 16

Address per subnet: 16

Hosts per subnet: 14

Subnet Mask: 255.255.255.240

Prefix: /28

When user enters numbers from 33-64 for number of subnets, the following details will appear on the screen.

**Output displayed below:**

Bits Borrowed: 6

Subnets needed: 64

Address per subnet: 4

Hosts per subnet: 2

Subnet Mask: 255.255.255.252

Prefix: /30

**Option 2:** Exit

**Valid inputs:**

* User must enter number 2 to be able to exit the application.

**Error messages displayed for invalid values entered in the software**

**Program Menu** – User will be required to enter either options 1 to display subnetting details or option 2 to Exit.

* If a user enters a number less than 1 or more than 2 an error message will be displayed saying “Invalid selection pick a number between 1 and 2. Try again!!!”.
* If user enters a special character, uppercase or lowercase letter an error message will still get displayed saying “Non numerical characters cannot be entered, please try again.”

**Enter number of subnets** – User will be required to enter numbers from 1 to 64 to display subnet information.

* If user enters numbers below 1 or more than 64 a error message will get displayed saying “Invalid input, number enter is outside of the subnet range”.

**The commands to close the software application**

The user must enter the number 2 on the menu screen for option 2 which will exit the program.