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| **You should save/rename this document using the naming convention HW2-MUid.docx (example: HW2-johnsok9.docx).**  **Objective**: The objective of this exercise is to:   1. Work with sockets 2. Understand the socket communication process in Linux tools   **Submit**: working screen grabs showing tool operations  You **may** discuss the concepts with your fellow students  You **may** **not** show or share code with your fellow students  You **may** **not** show or share code with internet sources  You **may** discuss this with your instructor or TA. |

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| **Name:** | **Andrew Boothe** |

# Part #1: Socket Communications using Linux (ceclinux)

*Estimated time: 1 hour*

**Exercise:** Test the following protocol using telnet, netcat and curl on Linux. Note, we used telnet in the lab, but have NOT gone into these commands in depth. It is your job to review them and work out the usage. (hint: use the man command)

1. For each application (telnet, netcat, curl)
   1. Connect to **10.32.1.92** port 5001
   2. Send your muid followed by newline (‘\n’)
      1. **Note do not type backslash followed by n**
   3. Receive Greeting
   4. Send Formula (each line followed by newline)
      1. 10
      2. +
      3. 4
      4. =
   5. Receive Answer (14.00 + Checksum)
   6. Exit
2. **Make a screen grab for each showing the operation including command line and the correct output + your unique checksum**
3. Text

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Text

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# Part #2: Connecting to sockets on the internet

*Estimated time: 1-3 hours*

**Exercise:** Using the following website as your starting point, do the following first using a web browser, and then curl. Note, you will need to figure out how to get the requested data as the example given may not be exactly what you are looking for.

1. **Find the list of universities in the United States with the name Miami**
   1. [**https://github.com/Hipo/university-domains-list**](https://github.com/Hipo/university-domains-list)
   2. **Show example in Web browser and curl**
2. **Show your IP address**
   1. **Ipify.org**
   2. **Show example in web browser and some other language**
3. **Find the details of Miami university searching openstreetmap**
   1. [**https://nominatim.org/release-docs/latest/api/Search/**](https://nominatim.org/release-docs/latest/api/Search/)
   2. [**https://nominatim.org/release-docs/latest/api/Overview/**](https://nominatim.org/release-docs/latest/api/Overview/)
   3. **Show example in web browser and curl**

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**SUBMIT:** (15-60 minutes)

* Submit screen grabs (each one should show the command line or browser used along with output)

**1.**

**Web page**

Graphical user interface, text, application

Description automatically generated

**Command Line**

Text

Description automatically generated

1. **Web browser**

Graphical user interface, text, application

Description automatically generated

**Command Line (Powershell)**



**3.**

**Web Browser**

Text

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**Command Line**

A picture containing scatter chart

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