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| First name (color-in initial) | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | section (2,3,or 9) | first name initial | last name initial |
| Last name (color-in initial) | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | | | |

H15: Due Tue 03.06 in Lecture Total Points: 50

MAY ONLY BE TURNED IN DURING THE CLASS INDICATED ABOVE, or offered in person, for in person grading, during instructor or TAs office hours.

See the course syllabus at <https://foo.cs.ucsb.edu/56wiki/index.php/W12:Syllabus> for more details.

Reading Assignment:

- HFJ:Chapter_15, starting on p. 471 Networking and Threads: Make a Connection
- For this homework, focus on the part of the chapter about networking. The next homework will focus on the part about threads.
- If there are reading notes on the wiki, consult those too—sometimes they contain helpful hints.

(1) (10 pts) Fill in the information below. Also, fill in the A-Z header by

- **coloring in** the first letter of your first and last name (as it would appear in Gauchospace),
- writing **either 2, 3 or 9** to indicate your **discussion section** meeting time
- writing your **first and last initial** in large capital letters.

All of this helps us to manage the avalanche of paper that results from the daily homework.

| | |
|-----------------|------------------|
| name: | |
| uemail address: | @uemail.ucsb.edu |

(2) (4 pts) You are creating a socket by calling `new Socket("127.0.0.1",20000)` and you get a `BindException`. What does this mean, and what should you do to try to fix this? (Hint: see the reading notes too on the wiki---linked to from the online version of this Homework assignment at HFJ:Chapter_15.

(3) Briefly describe the role of each of these in setting up communication over the network between two running Java programs

(a) (4 pts) an IP address

(b) (4 pts) a port number

(4) Suppose you need to choosing a port number to listen for connections on.

(a) (4 pts) What is the range of numbers that you should always avoid?

(b) (4 pts) What is the highest number that a port number can possibly be?

(5) (20 pts) Read in Chapter 15 about how you read data from a Socket and write data to a Socket. Then, in the space below, write a class `rawPrintFromCSWebserver` with a main method that will:

- connect to IP address 128.111.41.37 (`www.cs.ucsb.edu`) on port 80 (the web server port)
- send the following text over the connection: `"GET /\n"` (don't include the quote marks)
- read 20 lines of text, and print each of them out on `System.out`
- close the connection

(Suggestion: try to write this by hand first, then type it in on the system and test it out. You should get the first 20 lines that show up if you did a "view source" on the CS dept. home page.)