Name:			
(as it would appear on official course roster)			
Umail address:		@umail.ucsb.edu	section 4, 5, or 6
Optional: name you wish to be called if different from name above.			
Optional: name of "homework buddy" (leaving this blank signifies "I worked alone"			

You may collaborate on this homework with AT MOST one person, an optional "homework buddy".

H17: Due Thursday, 02.18 in Lab

Threads (HFJ Ch 15, sections on threads)
Assigned: Mon 02.08   Total Points: 50

MAY ONLY BE TURNED IN IN THE LECTURE/LAB LISTED ABOVE AS THE DUE DATE,
OR IF APPLICABLE, SUBMITTED ON GRADESCOPE. There is NO MAKEUP for missed assignments;
in place of that, we drop the five lowest scores (if you have zeros, those are the five lowest scores.)

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.

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1. (5 pts) Fill in the homework header properly—this helps us keep the grading pipeline flowing so that you get credit for your work and get feedback more quickly.

   - writing **either 4, 5, or 6** to indicate your **discussion section (lab)** meeting time

   - entering BOTH your name AND your umail address EVERY time.

   Paper submissions: One sheet of 8.5x11 paper double sided, or two DISCONNECTED SHEETS with your name on EACH. Please: **NO STAPLES, NO PAPERCLIPS, NO TAPE, NO ATTACHMENT OF ANY KIND**. These damage the document scanner.

   Scanned submission: When submitting by PDF upload: scan your pages legibly and **SCAN IN THE CORRECT ORDER**. Page 1 first, then Page 2, in the correct orientation. Failure to scan properly may result in zero credit, meaning you "use up" one of your five "drop the lowest grade" slots.

2. (5 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 at HFJ:Chapter_15---linked to from the online version of this Homework assignment.)

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

   a. (5 pts) an IP address

   b. (5 pts) a port number

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

   a. (5 pts) What is the range of numbers that you should always avoid?

   b. (5 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 128.111.41.26 (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. **Note:** if that IP address doesn't work, type this at the Unix prompt and see what IP address comes up:

   `telnet www.cs.ucsb.edu 80`

   Use `^]` to get back to a `telnet>` prompt, and type `quit` to quit.