NAME:_____

COLLABORATOR(S):_____

1. What are three guiding principles of the Unix design philosophy?

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2. Explain how the following pipeline meets those principles:

   **cat sample-db.csv | grep PA | head -5**

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3. What are the primary purpose for standard input, output, and error for different programs?

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4. Consider the following command line with redirects

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   **grep PA < sample-db.csv 2> oops > sample-db.PA.csv**

   a) What is the output file?

   b) What is the input file?

   C) What is the error file?

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5. Why is it necessary to have both standard error and standard out, with respect to the Unix design philosophy?

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6. For the following command, where does the final output of the head command get written? That is, to what output file does the first 20 lines get written? Explain.

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  **cat datafile | head -20 2> foo | cat > bar | cat > baz**

8. Consider a situation where you want to include error output on a pipeline. You can do that using a redirect **>**, fill in the redirect below such that standard error is piped to **cat**'s standard input to produce the output below.

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#>head -3 BAD_FILENAME [ ] | cat BeatArmy.txt – GoNavy.txt

Go Navy!
head: BAD_FILENAME: No such file or directory
Beat Army!

*(Hint: Note that **2>** redirects the file descriptor **2**, which is standard error, to a file, but **>** can also redirect to a file descriptor number by placing an **&** in front of the descriptor number.)*

7. What does the following commands write to the output file **file**?

  a) **cat < /dev/null > file**

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  b) **cat < file > /dev/null**

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  c) **head -c 20 /dev/urandom > file**

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8. Run ic221-up and navigate to the **hws/02/prob08** directory.
Describe the output of the following **ls** commands and how the glob
affects what is listed:

  a) **ls  chapter.\*b**

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  b) **ls chapter.?**

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  c) **ls chapter.?[ab]**

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9. Produce a **ls** command with a glob that will only list the
following files: **chapter.ab chapter.ac chatper.ad chapter.ae
chapter.bb chapter.bc chapter.bd** and **chapter.be.**

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10. Navigate into the **hws/02/prob10** directory. Write a glob that
will match the following output:

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base.a/dir.a/sub.a/file.5   base.a/dir.b/sub.a/file.5
base.b/dir.a/sub.a/file.5   base.b/dir.b/sub.a/file.5
base.c/dir.a/sub.a/file.5   base.c/dir.b/sub.a/file.5
base.a/dir.a/sub.a/file.a   base.a/dir.b/sub.a/file.a
base.b/dir.a/sub.a/file.a   base.b/dir.b/sub.a/file.a
base.c/dir.a/sub.a/file.a   base.c/dir.b/sub.a/file.a
base.a/dir.a/sub.a/file.b   base.a/dir.b/sub.a/file.b
base.b/dir.a/sub.a/file.b   base.b/dir.b/sub.a/file.b
base.c/dir.a/sub.a/file.b   base.c/dir.b/sub.a/file.b
```

  (hint: remember, globs expand across directories,
      like **ls \*/\*/file.a** lists file.a two directories down)

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11. Label the permission string below with the user, group, and all.

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|---|---|---|

rwx r-w r-w
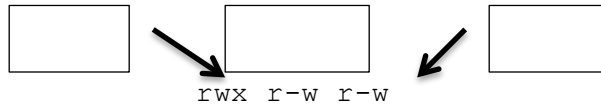
3/2/1/0

12. Convert the following permission states into an octet:

    a) User: read and write; Group: read; Global: read

3/1/0

    b) User: read and execute; Group execute; Global: none

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13. Change into the hws/02/prob13 directory. Change the permissions of the program **runme**. What is the command you used and what is the output of execution?

command                                        output

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14 List the directory  ~aviv/ic221/hw02/ where you will find binary called  **secret**. Explain how you can still execute this program and describe its output.

12/7/5/0

15. In what configuration file are userid's and usernames defined?

2/0

16. In what configuration file are groupid's and groupnames defined?

2/0

17. What are not all group members listed in the group configuration file?

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