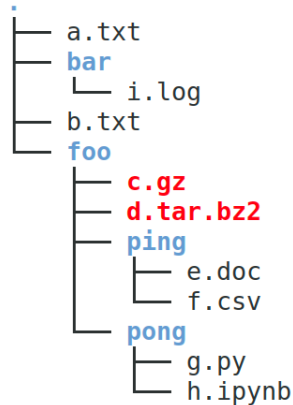


I. Multiple Choice

For items in this part, encircle the letter corresponding to the best answer.

For the next number, consider the directory tree of a Linux-based system below. Assume that the root of the tree is the user's home directory and the required commands are issued at the root of the tree.



1. Which of the following commands will include the contents of directory `bar` in the output?
 - a. `ls`
 - b. `ls -R`
 - c. `ls foo/ping`
 - d. `ls ~/foo/ping`
 - e. `ls */**/*`
2. Which of the following commands will make the current directory a git repository?
 - a. `git clone`
 - b. `git clone https://example.com/foo/bar.git`
 - c. `git init`
 - d. `git init https://example.com/foo/bar.git`
 - e. `git init https://example.com/foo/bar.git .`

For the next number, assume that the following statement was previously called: `import numpy as np`

3. Let `arr` be a two-dimensional `ndarray`. Which of the following expressions will give the number of columns in `arr`?
 - a. `len(arr)`
 - b. `arr.len()`
 - c. `arr.columns`
 - d. `arr.shape[0]`
 - e. `arr.shape[1]`

For the next question, assume that the following statement was called: `import pandas as pd`

4. Let `df` be a `DataFrame` with index given by `['hello', 'world', 'bar', 'foo']`. Which of the following expressions will select the row labeled `bar`?
 - a. `df.iloc[2]`
 - b. `df.iloc[3]`
 - c. `df.iloc['bar']`
 - d. `df['bar',:]`
 - e. `df[:, 'bar']`