Worksheet 3

General Instructions: Do not copy-paste from this file to terminal. If you have doubts, contact the instructors or TAs. And **do not panic**!

- The first three tasks in this worksheet require you to use Python3 shell. You need to copy paste your work (commands and outputs) to a file using gedit or nano.
- The last two problems in this worksheet will require you to write a program.
- You should keep all your files in `CS1101/ws03` folder.
- Use `gedit` or `nano` to type your programs.
- The name of the programs should be `prob-n.py` for n^{th} problem.
- Save the output of your program in a text file `prob-n-output.txt`.
- After you finish, create an archive of the folder `ws03` with name `ws03-idnumber.tgz` and upload in `WeLearn`.

- Open `gedit`.
- Open a terminal and start the python shell.
- Complete the next three tasks given below in the python shell in your terminal.
- You will copy-paste the `python` commands and the corresponding outputs in `gedit` and save the file as `prob-N.txt` where `N` is the number of the task. For each task you need to save one file.
- Task 1: *Exploring lists*
  1. Type `python` to start a python shell
  2. Create a list of integers from `0` to `9` and store the list in variable `x`
  3. Create a list of integers from `3` to `13` and store the list in variable `y`
  4. Using a single `print` command print the list in `x` in reverse
  5. Using a single `print` command print the list of odd entries in `x` and then the list of even entries in `x`
  6. Check whether the fourth item of `x` is same as the first item of `y`
  7. Check whether the number `10` is in the list `x`
  8. Check whether the number `9` is in the list `y`
  9. Get a combined list (added) of the items of `x` and `y`
  10. Save the `gedit` contents as `prob-1.txt`
- Task 2: *Strings are lists*
  1. Store a string ”The quick brown fox jumps over the lazy dog” in a variable `x`

2. Check whether the word `fox` is in this sentence
3. Print the sentence in reverse order
4. Print every third character of the above sentence
5. Print every fourth character of the above sentence
6. Find how many characters are there in the sentence (including spaces)
7. Print every second character of the sentence starting from the last character in reverse order
8. Store the first four character of `x` in a variable `y` and the last three letters in a variable `z`. Check the output of `y + z`
9. Check the output of `y*10`
10. Save the `gedit` contents as `prob-2.txt`

- Task 3: *Numbers*

1. Store 1.2 in a variable `x`
2. Store 12 in a variable `y`
3. Store 24 in a variable `z`
4. Check the output of `x/y`, `y/z` and `z/x`. Are all of them float?
5. Find 6^{th} power of 3
6. Check whether `2.0**4` is equal to `16.0`
7. Compare outputs of `y+z` and `str(y)+str(z)`
8. Save the `gedit` contents as `prob-3.txt` and close `gedit`

---

4. Write a program which finds the largest number in a given list. To test your program, use the follwing list: `[0, 3, 1, 2, 8, 7, 9, 0, 4, 7]`
5. Write a program which finds the largest and the smallest numbers and their respective positions in the above list.
6. Write a program that sorts the above list in ascending order.
7. Repeat the above exercise with the following list `[-1, -3, 7, 9,-4, 3, 8, 9, -2]`