Due: Feb 15, Monday

1. This is a bonus program. Due at the beginning of the class with the same submission requirement. No late work will be accepted.

2. Make directory ~/IT279/Bonus1/ on your Unix account for this Bonus1, where ~ denotes your home directory.

3. Write a C++ program name `lis.cpp` that can find a longest increasing subsequence as follows. After successful compiled using g++ with default name for object file, i.e., `a.out`, and `./a.out n` will generate n random `int` between 0 and $n-1$ (including 0 and $n-1$) in an array, and find a longest increasing subsequence. For example,

   `./a.out 15` should print out:

   ```
   Sequence length:15
   9, 2, 7, 1, 2, 9, 5, 9, 9, 12, 1, 1, 8, 12, 2
   Longest increasing subsequence, length:5
   1, 2, 5, 9, 12
   ```

   If the sequence (either the original sequence or longest increasing subsequence) is longer than 25, just print the first 25 number in the sequence. For example,

   ```
   Sequence length:100
   73, 8, 53, 70, 59, 25, 43, 10, 61, 21, 21, 63, 83, 36, 57, 46, 41, 23,
   52, 35, 53, 77, 95, 90, .....
   Longest increasing sequence, length:16
   8, 10, 21, 36, 46, 52, 53, 59, 61, 64, 67, 69, 73, 77, 80, 84
   ```

Secret directory under `public`

Same as before, after you've finished your work, or have decided that what you have is the final version for me to grade, you have to copy all your programs to a secret directory under your `public/IT279myWork` so I can grade them (i.e., compile, run, and check the codes). Select a secret name, say "`peekapoo`" as an example (you should chose your own), and that will be the secret directory.

You can simply copy my `/home/cli2/public/IT279/copy279all.sh` and use the following command line to run it. (You can put `copyall.sh` in any directory.)

```
bash copy279all.sh peekapoo
```

Final Words:

You have to follow the submission guidelines, i.e., cover page (that contains assignment number, student's names, student **ULID**, and secret directory), summary, source code(optional), output, folder, and so on. **No late work will be accepted.**