

COL100: Lab 4

January 23, 2017

Part 1: Search

1. Write a Python program to search a given element in a List using Linear search.
2. Write a Python program to search a given element in a Sorted List using Binary search.
3. Write a program to guess a number. The program should randomly choose a number between 1 and 100. Then it should ask the user to guess the number. In return the program should tell if the guess is less, equal to or more than the number. If it is less, the program should output 'l', and prompt the user for new guess. Similarly, if it is more, the program should output 'm', and prompt the user for new guess. This should continue till the user guesses the correct number. When the guess is correct, the program should terminate, and print the number of guesses he/she took.

Test your code with multiple test cases. Use python trace to debug your program.

```
python -m trace -t test.py
```

Reference: <https://docs.python.org/2/library/trace.html>

Part2: Practice Questions

Write a program to guess a number

1. **Human chooses, program guesses:** The program should prompt the user, to choose a number of his choice between 1 and 100. Once the user has chosen, the program should make a guess and print on the screen. The user should be prompted to tell if the guess is correct by typing 'c', less by typing 'l', more by typing 'm'. Depending upon user's response, the computer should guess again. This is repeated till when the computer correctly guesses the number. A simple approach would be to start from 1 and keep on incrementing till the number is reached.
2. Can you make the program in the above part more intelligent, to reduce the number of attempts to make the right guess?