CSIT113
Problem Solving

Workshop - Week 9

Sorting Practice

- Consider the following list of numbers:

9	11	8	9	13	18	3	10

- Sort it using:
  1. Selection sort
  2. Insertion sort
  3. Bubble sort
- Count the number of operations each time.
- Which is the best sort?

Sorting Practice

- Consider the following list of numbers:

5	6	7	8	4	12	15	17

- Sort it using:
  1. Selection sort
  2. Insertion sort
  3. Bubble sort
- Count the number of operations each time.
- Does this change the best sort?

Sorting Practice

- Consider the following list of numbers:

15	13	12	11	8	5	3	1

- Sort it using:
  1. Selection sort
  2. Insertion sort
  3. Bubble sort
- Count the number of operations each time.
- Does this change the best sort?

Ball breaking.

- We have two bowling balls and a multi storey building.
- We know that if we drop a ball from a sufficiently high window it will break.
- Let us define a *test* as the process of dropping a ball from a specific floor.
- Our aim is to find out which is the lowest floor from which dropping a ball breaks it. Let’s call this the *critical* floor.
- We also want to do this with the smallest number of tests.

The questions.

- What is the maximum number of tests that I need to conduct to find the critical floor in a 100 floor building?
- What order should I test the floors in?
- What is the highest floor you can reach with *n* tests?