Handout 7

Credit: Sara Mathieson

Question 1. Consider searching for the value x in the sorted list ls shown below.

```
ls = ["bear", "bird", "bug", "cat", "cow", "dog", "fish, "lion"]
index   0        1      2      3      4      5      6      7
```

(a). How many steps does it take to search for the value "cow" in the list using linear search?

(b). How many steps does it take to search for the value "cow" in the list using binary search? Show the steps in the chart below:

```
low    mid    high    ls[mid]
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```

(c). How many steps does it take to search for the value "bear" in the list using binary search? Show the steps in the chart below:

```
low    mid    high    ls[mid]
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---    ---    ---       ---

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```

(d). How many steps does it take to search for the value "elephant" in the list using binary search? Show the steps in the chart below:

```
low    mid    high    ls[mid]
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```