Tutorial

CPSC 217

List

- What is a List?
  - A collection of elements (same type or different types)
  - Each element has an index (0 to No_of_elements - 1)
  - A list is one type of data structure

- Creating list

```
low_temps = [1.4, -1.8, 0.7, 0.9, 1.2, -2.2, -0.3]
names = [“Diana”, “Bruce”, “Clark”]
stuff = [1, “ICT”, 3.14]
empty = []
```

List

- Accessing list elements
  - Each list element has a unique index
    – Values range from 0 to length of the list – 1
  - To access one element, use the name of the list, followed by the index of that element in square brackets
  - Example:

```
print(stuff[0])
```

List

- Individual elements in a list can be changed without impacting the rest of the list

  stuff[1] = “UofC”

- Len function return the length of the list

  len(stuff) will return 3

- Loops and list

```
for ele in stuff:
        print(ele, end = ' ')

 for ind in range(0,len(stuff),1):
    print(stuff[ind], end = ' ')
```

List

- Insert:

```
num = [11,12,13,14,15,16,17,17]
num.append(18) # add 18 at the end of the list
print(num)

num.insert(4,50) # insert 50 at the index 4 of the list
print(num)
```

List

- Search:

```
if 17 in num:
        print("Found")
else:
        print("Not Found")

print(num.index(17)) # Print the index of 17
```

List

- Remove:

```
num.remove(17) # Remove an element
print(num)

print(num.pop(5)) # Remove the element at index 5
print(num.pop()) # Remove the last element
print(num)
```

List

- Sorting:

```
num = [6,5,2,1,7,8,2,1,1,0,4,9,2]
print(num)
sort_num = sorted(num)
print(sort_num)
print(num)

num.sort()
print(num)
```

Task

- Write program that takes inputs (floating point number) from user until a blank space provided in the input. Create a list containing those numbers.
  - Find the maximum and minimum among them

My PPT slides

- You can find my created PPT slides at the following link:

https://sites.google.com/site/samicsemist/cpsc217win16