



# 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