BE – Discussion #7, 2020-10-16

## Announcements

- Homework #3 will be posted today → must be done individually as it will get you ready for the C portion of the course
- Exam #2 is two weeks from today! → Friday, 10/30
- Quiz #4 is this afternoon 4^40 pm (Boston Time); tomorrow @ 7am for other time zones
  - → 15 min, 5 min to upload
  - → due by 5 pm

## Review Last Week's Quiz #3

## Additional Notes for This Week

- the + operator cannot be used to concatenate 2 character vectors
- iscellstr() is determining whether or not a cell array contains only character vectors, not strings (old function. ignore name)
- When creating structures using struct(), as of version R2018b, strings can be used for field names (before they could only be char. vectors)
- make sure you know how structs are displayed (field name: value on separate lines)

## Review of Material

- cell arrays
- structures
- when to use cell array vs. structures
- vector of structures
- nested structures
- text manipulation

## Cell arrays + Structures

- examples of calling in Devin's example
- see attached .m file

## Text Manipulation

sports = ["baseball" "football" "track and field"]

1x1 string scalar

string array

*not sequential commands

```
>> sports(1:2)
   1 x 2 string array
"baseball" "football"

>> sports{1:2}
ans =
    "baseball"
ans =
    "football"

>> sports(2) = []
   1 x 2 string array
"baseball" "track and field"

>> sports{2} = []
   1 x 3 string array
"baseball" <missing> "track and field"

>> "I love " + sports
["I love baseball" "I love football" etc...]

>> sports{2}(1:3)
'foo'

also work:
sports(2){1}(1:3)

>> sports(3)
"track and field"
```

↑ 1x1 string scalar

## Text Manipulation Functions

### strtok()

ex. strtok(strvar, delimiter)

note that default delimiter is always a space

ex. example = 'Well hello'
[f l] = strtok(example)
f =
'Well'
l =
' hello'

note that l includes the delimiter (which in this case is a space)

### strcat()

ex. strcat(var1, var2)

ex. strcat('Well', 'hello')
ans =
'Wellhello'

ex. strcat('Well', ' hello')
ans =
'Well hello'

### strrep()

ex. strrep(string, oldstring, newstring)

ex. strrep('hello', 'lo', 'p!')
ans =
'help!'

→ strrep('hello', 'lo', 'lp me!')
ans =
'help me!'

### sprintf()

ex. var = sprintf( )

* like fprintf() but can save to variable
* useful for titling (plots, labels, etc) and user inputs

Functions need to know that work on strings but not char. vectors

+ strings( ) strjoin( ) strsplit( ) join( )