CN208
Introductory Computer Programming

Week 11:- Character Strings

By

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Character Strings

- **Character String Concept**
- Character in MATLAB
  - Format Conversion Functions
  - Character String Operations
  - Arrays of Strings

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Character Strings

- **Mapping** defines a relationship between two entities
  - E.g. graphical form to a numerical internal code

- **Casting** is the process of changing the way a language views a piece of data without actually changing the data value.
  - E.g. force presentation of set data in the specific form

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Character Strings

```
>>char (100)
  ans =
    d
>> Char ([97 98 99 100 101])
  ans =
   abcde
>>  next = fred + 1
  next =
    71 115 102 101
>> unint8('A')  % unit8 is an integer data type 0 -255
  ans =
   65
```

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Character Strings

```
>>first = 'Fred'
first =
Fred
>> last = 'Jones'
last =
Jones
>> name = [first, ' ' , last]
name =
Fred Jones
>> name (1:2:end)
ans =
  Fe  oe
>> name (end:-1:1)
ans =
senoJ derF
```

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Character Strings

```
>> fred = 'Fred';
>> n = input (' Enter a number: ')
   Enter a number : 5
   n =
     5
>> n = input (' Enter a number: ')
   Enter a number : fred
   n =
     Fred
>> n = input (' Enter a number: ')
   Enter a number : lsdf
   ??? Lsdf
   Error: Missing MATLAB operator.
```

Character Strings

```
>> n = input (' Enter a number: ')
    Enter a number : char(fred -2)
    n =
      Dpcd
>> n = input (' Enter a number: ')
    Enter a number : 'ABCD'
    n =
      ABCD
```

Character Strings

```
>> a = 4;
>> disp (a)
    4
>> disp(['the answer is ', a])
The answer is  ⬚
>>disp(['the answer is ', int2str(a)])
The answer is 4
```

Character Strings

```
>> a = 39
>> b = 'hi';
>> n = fprintf(' out put is %d\n and %s', a, b)
 out put is 39
 and hi
n =
    22
>> s = sprintf(' out put is %d\n and %s', a, b)
s =
 out put is 39
 and hi
```
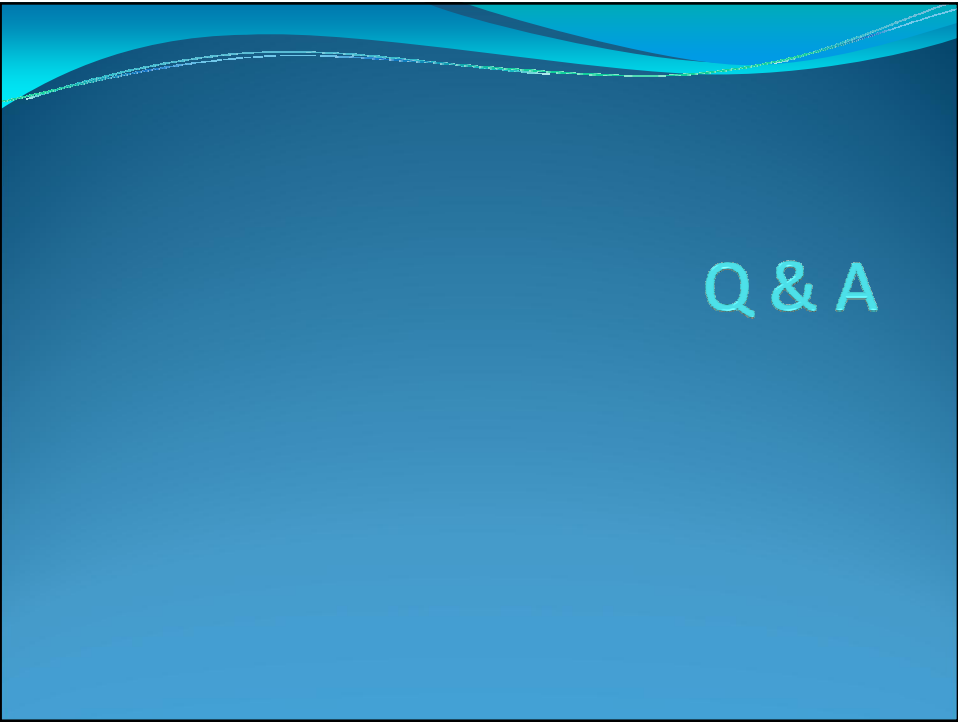
Character Strings

```
>> s = '2.7183  3.1416';
>>A = sscanf(s,'%f')
A =
   2.7183
   3.1416
```

Character Strings

```
strcmp('Yes', 'No') =
   0
strcmp('Yes', 'Yes') =
   1
A = {'MATLAB', 'SIMULINK';            ...
   'Toolboxes', 'The MathWorks'};
B = {'Handle Graphics', 'Real Time Workshop';   ...
   'Toolboxes', 'The MathWorks'};
C = {'Signal Processing', 'Image Processing';   ...
   'MATLAB', 'SIMULINK'};
strcmp(A, B)
ans =
   0   0
   1   1
strcmp(A, C)
ans =
   0   0
   0   0
```

Recursive

```
function result = fib(n)
if n== 1
    result = 1;
end
if n == 2
   result = 1;
end
if n >= 3
    result = fib(n-1) + fib(n-2);
end
```