

EECS10 Discussion Week6

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Recap

Declaration	Definition
<code>int f(int);</code>	<code>int f(int a) {return a;}</code>
Multiple function declarations are allowed (if they match).	A function must be defined exactly once in a program.
A function must be declared before it can be called .	A function definition is an implicit function declaration.

- Let's do some experiments!

Arrays

- A data structure consisting of a collection of elements
- Array of int : `int A[100]`
- Fixed number of elements at compile time (e.g. 100 elements)
- Element access by index (array[index] e.g. `A[42]`)
- Array indexing starts counting from 0
- Initialize an array e.g. `int A[5] = {0,1,2,3,4};`
- Multidimensional array: array of an array
e.g. `int color_array[4][6]`



BuggyandBuddy.com

Passing Arguments to Functions

- Pass by Value
- Pass by Reference
- In ANSI C, ...
 - ... basic types are passed by value
 - ... arrays are passed by reference



Check the animation [here](#)

Character Arrays: Strings

- Text is represented by character arrays aka strings
 - Strings are null-terminated arrays of characters
- To input string, use scanf() format specifier: “%Ns”
 - where N specifies maximum field width = array size - 1
 - address argument can be **&string[0]** or simply **string**

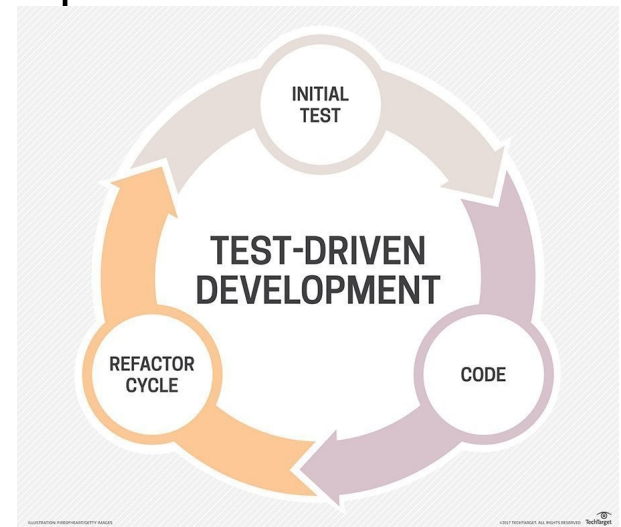
Assignment 6

- Complex number calculator
- Design a user menu
- Define functions for different complex operations
- Use global values to store complex number



Assignment 6

- Two-week assignment
 - Plan your work or simply said ***start early, finish early!***
 - **Week 1:**
 - Design the user menu
 - Build skeleton for the program and code empty functions
 - Handle the representation and simplification of numbers
 - **Week 2:**
 - Fill in the body of the functions
 - Add error handling and try the bonus part
- Practice short cycle of coding and testing!



For curious minds!

- If you ever wondered what **e** means and why it's 2.718... , read:

[An Intuitive Guide To Exponential Functions & e](#)

- If you ever wondered what could possibly mean if someone raise **i** to the power of **i** (i^i) or even (i^{i^i}), read:

[Intuitive Understanding Of Euler's Formula](#)

**please take a moment to
consider the beauty of
this formula**

$$e^{i\pi} + 1 = 0$$