# Pointer Basics

* A variable which stores memory addresses
* How to declare? Type of pointer?
* How to assign memory address to the pointer?
  + Using the address of an existing variable (used for call by reference, accessing arrays with pointers)
  + Request OS to allocate some memory for us and then get address of that memory (‎Section 2- Dynamic Memory Allocation)
* Pointer is pointing to some memory location/address
  + What does that mean? Show graphically.
  + Dereferencing: How to access memory pointed to by the pointer?
  + Pointer arithmetic
  + Constant pointer vs Pointer to a constant
* Function call by reference
  + Using reference variable (revisit)
  + Using pointers
* Arrays and Pointers
  + Relationship of arrays and pointers
  + Accessing array using pointer (using pointer notation, using array notation)
  + Passing 1D array to function
  + Passing 2D array to function

# Dynamic Memory Allocation

* Dynamically create a variable
  + Request OS to allocate enough memory to store some data (type matters)
  + Get address of that memory
  + Store that address in a pointer (what should be the type of pointer?)
  + Use that memory store/place using pointer.
  + Deallocate the memory when its not required anymore
  + Undangle the pointer.
* Dynamically create an 1D array
  + Same as above except change in the syntax to get full array
  + Pass 1D to function
* Dynamically create a 2D array
  + How it looks like? Show graphically.
  + Allocate and deallocate details
  + Accessing dynamic array elements: using pointer notation + using array notation
  + Pass 2D array to function