Storage Classes in C

What is a Local Variable?
- Local variable is a variable which is recognized only within a single function.
- Normally local variables do not retain their value once control has been transferred out of the function.

What is a global variable?
- Global variables can be recognized in two or more functions.
- Global variables retain their value until the program terminates.

Storage Classes:
- Storage classes are used to define the scope (visibility) and lifetime of variables and/or functions in a program.
- Scope refers to the portion of the program over which the variable is recognized.
- There are 4 different storage classes in C
  1. Automatic Variable
  2. External Variable
  3. Static Variable+
  4. Register Variable

1. Automatic Variable:
- Always declared within a function and are local to the function in which they are declared.
- The keyword is `auto`.
- Example:
  ```c
  main()
  {
    auto int a,b,c;
    
    fun1();
  }
  ```
- The default storage class is auto. So if we declare `int x;` it refers to `auto int x;`
- Automatic variables defined in different functions will be independent of one another even though they have the same name

<table>
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<th>Automatic Variable Example</th>
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<tr>
<td>main()</td>
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<tr>
<td>{</td>
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<tr>
<td>auto int a,b,c;</td>
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<td>fun1();</td>
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In the above example the variables a, b, c declared in the main function is available only to the main function and the variables declared in the function fun1() is local to the function.

- Automatic variables can be initialized during the variable declaration or explicit assignment statement.
  Example:
  auto int x=10; is same as auto int x;
  x=10;

- If the variable is not initialized its initial value will be unpredictable.
- The assigned value will be reassigned each time the function is reentered.
- An automatic variable does not retain its value once control is transferred out of its defining function.

Source:
http://datastructuresprogramming.blogspot.in/2010/10/storage-classes-in-c.html