**OOP  
(Dr. Humera Tariq)**

**Static arrays** are allocated memory at compile-time and the memory is allocated on the stack.

int array[5];

**Dynamic arrays** are allocated memory at the runtime and the memory is allocated from the heap.

int\* array = new int[5];

**Shallow Copy:** When we do a copy of some entity to create two or more two entities such that changes in one entity are reflected in the other entities as well, then we can say we have done a shallow copy. In shallow copy, new memory allocation never happens for the other entities, and the only reference is copied to the other entities.

**Deep Copy:**

When we do a copy of some entity to create two or more two entities such that changes in one entity are not reflected in the other entities, then we can say we have done a deep copy. In the deep copy, a new memory allocation happens for the other entities, and reference is not copied to the other entities. Each entity has its own independent reference. The following example demonstrates the same.

**Q. Who is responsible for the memory allocation of main() in RAM?**

Ans: *Operating System*.

* The data type of a memory address is a pointer, which is denoted by the type that it points to, followed by an asterisk ( \* ).