



FACULTY OF ENGINEERING & TECHNOLOGY

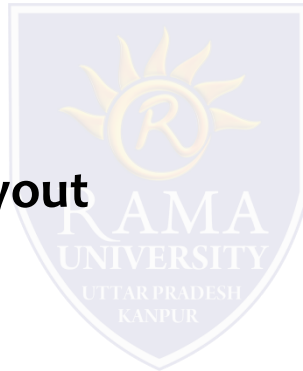
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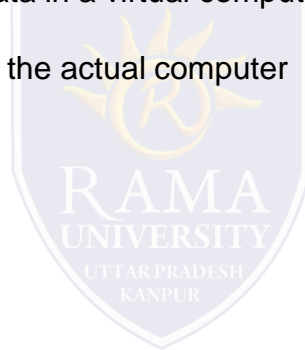
Topics Covered

Elementary Data Types
Structured Data Types
Structure Size And Memory Layout



Elementary Data Types

- A run-time grouping of one or more pieces of data in a virtual computer
- A location in memory with an assigned name in the actual computer
 - Programmer defined data objects
 - System defined data objects



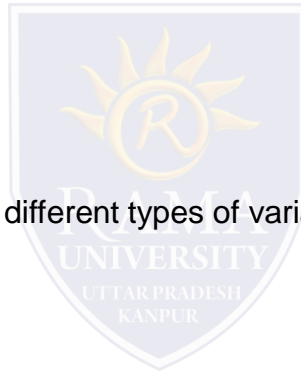
Structured Data Types

- A structured data type is a compound data type which falls under user-defined category and used for grouping simple data types or other compound data types.

```
struct < struct name >
{
    < type > < member >;
};
```

- There are some situations when we need to group different types of variables in one group.

```
unsigned int student_roll;
char student_name [MAX_STRING];
unsigned int student_age;
```



Structure Size And Memory Layout

- Structure is user defined type to group of different type of variables of either compiler defined legacy types or other user defined types or mixed
- Members inside a structure are placed sequentially next to next in the memory layout
- minimum size of a structure is the sum total of all sizes of members, with considering padding.

```
struct <name> {  
    <type> <member name 1>;  
    <type> <member name 2>;  
    ...  
    <type> <member name N>;  
};
```

