

PROGRAMMING LANGUAGE

Data Object

DEF 1 :- A Data object represents a container for data values, a place where data values may be stored and later retrieved.

DEF 2 : A runtime grouping of one or more pieces of data in a virtual computer.

DEF 3 : A location in memory with an assigned name in the actual computer.

DATA OBJECTS CAN BE

At Program Execution

Programmer-Defined
|
Eg.

Variables, Constant,
Arrays, files etc.

Not directly accessible to Programmer

System Defined
|

Runtime - Storage,
Stacks, file buffers
free-space-lists.

Data Values Can be

Single Numbers

Pointers to
Other objects

Characters

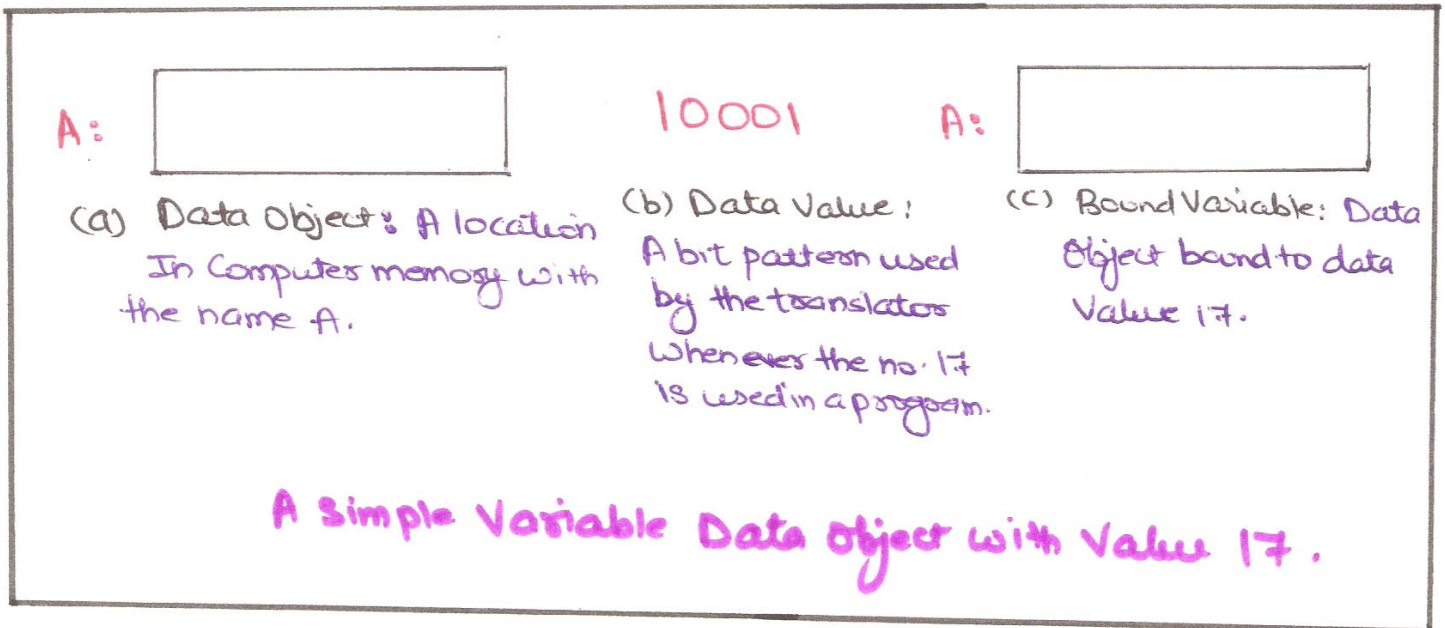
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A Data Object is usually represented as storage in computer memory and a data value is represented by a pattern of bits.

So we can represent the relation between Data object and Data value



A data object is Elementary if it contains a data value that is always manipulated as a unit.

A data object is **data structure** if it is an aggregate of the data objects.

Binding & Attributes of Data object: - Binding is an association of Data values & entity.

➤ **Type**: This associates the data object with the set of data values that the object may take.

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- 2) **Location** : This associates the binding of a storage location in memory where the data object is represented. Only storage management routines can only change the data object in the virtual computer.
- 3) **Value** : This binding is usually the result of an assignment operation.
- 4) **Name** : The binding to one or more names by which the object may be referenced during program execution is usually setup by declaration and modified by subprogram calls and returns.
- 6) **Component** :- The binding of a data object to one or more data objects of which it is a component is often represented by a pointer value. And may be modified by a change in pointer.

