

# Structures and Databases

## Structures and databases

D2000 system defines the term **structure** as particular number of named items, to which it is possible to specify the properties as value type, start value, saving start value, limits. Structure in the system is defined by an object [Structure definition](#), so a specific name is assigned to it. Structure definition (holds no value) represents particular model, which is used (by the form of reference) in definition of other objects:

- [Structured variable](#)
- [Database](#)

Object of [Structured variable](#) type is closely associated with an object of [Structure definition](#) type. It defines non-zero number of rows of values. Structure of each row is given by an object of [Structure definition](#) type. A value matrix is created:

### Example:

The object SD.PersonDef of [Structure definition](#) contains the following items:

Item name	Item type
Name	Text
Age	Integer
Born	Absolute time
Children	Integer

The object SV.Persons is [Structured variable](#) type and contains five (5) rows. Rows of this objects are defined by the object SD.PersonDef. Object value includes of twenty (20) values [5 x 4] of various types, arrangement of which is shown in the following table:

Row/Column	Name	Age	Born	Children
1				
2				
3				
4				
5				

Each item represents one value, for which there are defined (and especially for each value) all usual properties in D2000 system (start value, limits, status bits etc.). Individual values can be displayed in pictures, used in expressions (SV.Persons[3]^Age), in eval tags or events.

Using an object of [Database](#) type, it is possible to access a SQL database (via the interface ODBC), structure of which (names and types of columns) corresponds to an object of [Structure definition](#) type.

For each column (item) at the level of an object of [Structure definition](#) it is possible to define the following attributes:

- Name\*
- Description\*
- Value type\*
- Status text (for displaying)
- Limits
- Start value
- Index of transformation palette

These properties are used (or they are not, according to configuration) for columns in object of [Structured variable](#) and [Database](#) types. For object of [Structured variable](#) type, these properties can be configured for each item (value) individually.

\* Attribute is defined at the level of object of [Structure definition](#) type and cannot be changed.