



Variables & Data Type

variables in Matlab

- The variables, created in MATLAB code are handled by its workspace and used to define memory locations and store values assigned to each respective variable.
- Each variable is treated as a matrix or an array irrespective of their data types.

Data type

In MATLAB, there are several data types that you can use to store and manipulate different kinds of data. The following are some commonly used data types in MATLAB:

1 Numeric Data Types:

double: Can be used to store double-precision floating-point numbers.

Example:

```
x = 3.14;
```

int32: Can be used to store signed 32-bit integers.

Example:

```
n = int32(10);
```

logical: Can be used to store logical values (true/false).

Example:

```
flag = true;
```

Character Data

Type:

2 char: Can be used to store character strings.

Example:

```
name = 'John Doe';
```

4 Cell Data Type:

cell: Can be used to store a variety of data types, including arrays, strings, and numbers.

Example:

```
data = {1, 'Hello', [2 4 6]};
```

3 Structure Data Type:

struct: Can be used to store a collection of fields associated with values.

Example:

```
person.name = 'John Doe';  
person.age = 30;
```

5 Function Handle Data Type:

function_handle: Can be used to store a reference to a function.

Example:

```
myFunc = @sin;
```

6 Arrays:

Arrays can be used to store and process data.

Example

```
A = [1 2 3; 4 5 6; 7 8 9];
```

7 Tables:

Tables can be used to organize data in a tabular format with different columns and data types.

Example:

```
T = table([1; 2; 3], {'A'; 'B'; 'C'}, logical([1; 0; 1]),  
'VariableNames', {'ID', 'Name', 'Flag'});
```