

# MATLAB Coding style and guidelines

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## 1 Introduction

This document will try and sum up all the relevant guidelines for a uniform MATLAB code. It is strongly advised to follow the guidelines presented here but not in every case mandatory where stepping away from some guidelines would produce easier to read code and/or better implementation.

Contained here is a distilled and modified version of *MATLAB Style Guidelines* by *Richard Johnson*.

## 2 Naming Conventions

### 2.1 Variables

Names of variables should document their meaning or use and therefore :

**Write variable names in mixed case starting with lower case**

Example:

```
1 inputFiles = {'file1.txt', 'file2.txt'};
2 firstFile = inputFiles{1};
3 firstName = strrep(firstFile, '.txt', '');
```

Next are some more detailed cases regarding the naming convention for variables.

- **Variables with larger scope should have meaningful names regardless of length. Variables with small scope can have short names.**
- **Use prefix *n* for variables representing the number of objects.**  
nFiles, nObjects, nColumns
- **Follow a consistent convention on pluralization**

```

1 % scalar variable :
2 point
3
4 % bad plural naming convention :
5 points
6
7 % good naming conventions :
8 pointArray
9 pointList

```

- Use suffix *No*, *Num* or prefix *i* in a variable name representing a single entity number

```

1 tableNo , rowNum
2
3 % To be used for iteration also :
4
5 for iFile = 1:nFiles
6     :
7 end

```

- Avoid negated boolean variables

```

1 % Avoid :
2 isNotFound
3
4 % Use :
5 isFound , ~isFound

```

- Use prefixes *vec*, *mat* for Variables denoting a vector or matrix respectively

```

1 vecVoltages , vecSolution
2
3 matWeights , matConfusion

```

- Use prefix *h* for Variables denoting a handle

```

1 hFig = figure(1);
2
3 hExpFun = @(x) exp(x)

```

## 2.2 Constants

As MATLAB doesn't have true constants it is advised to name and define them in a standard practice way to avoid unintentionally changing them.

- Constant names should be all uppercase using underscore to separate words.

```
1 MAX_ITERATIONS = 100
2 ERR_INPUT = 2
```

- Prefix constants by a common type

```
1 ERR_INPUT = 2
2 ERR_PRINT = 3
```

## 2.3 Structures and Classes

- Structure and Class names should begin with a capital letter
- Do not include the structure name in the field names

```
1 % Structure name :
2 Region = struct()
3
4 % Structure fields :
5 Region.identifier
6 Region.nElements
```

## 2.4 Functions

Most important rule is that function names should document their use.

- Write function names in mixed case, first lower letter
- Reserve `get/set` for functions that access an object or property
- Use prefix *is* for boolean functions