



MATLAB for Finance

6 Other Data Type



String of characters

String constant

```
'testo costante'
```

```
'felicita'''
```

String variable

```
s = 'testo costante'
```

```
double(s)
```

```
char(116)
```

```
q = 'Hello'
```

```
[q ' world']
```

```
[q; 'world']
```

```
disp(['Risultato ' num2str(x)])
```

```
disp(['Risultato ' int2str(x)])
```

△ They must have the same length, otherwise use:

char(q, 'world!')



Functions for strings

- ✚ char
- ✚ isstrprop
- ✚ strread
- ✚ strcmp, strcmpi
- ✚ findstr (instead of strfind)
- ✚ strrep
- ✚ strtrim
- ✚ deblank
- ✚ num2str, str2num
- ✚ int2str

```
mys = '    12/12/2016 12.3 IT00034512    '  
[dd mm yy p n ]= strread( mys , '%d/%d/%d %f %s')
```



Dates

- ❖ MATLAB represents date and time information in either of three formats:
 - ❖ date strings: `'02-Oct-1996', '15:45:17',`
`'31-Oct-2003 15:45:17',`
`'10/31/03', '03:45:17 PM'`
 - ❖ serial date numbers (from January 1, 0000): `729300`
 - ❖ date vectors (year, month, day, hour, minute, second):
`[1996 10 2 0 0 0]`
- ❖ If you work with more than one date and time format you need to convert from a format to another (e.g., from a string to a serial date number) using the **conversion functions**



Conversions Between Date Formats

❖ **datetime** Convert a date string to a serial date number:

```
Number = datetime(Vector)
```

```
Number = datetime(String, Format)
```

❖ **datestr** Convert a serial date number to a date string:

```
String = datestr(Vector)
```

```
String = datestr(Number)
```

❖ **datevec** Split a date number or date string into individual date elements

```
Vector = datevec(Number)
```

```
Vector = datevec(String, Format)
```



Other Functions

✚ x2mdate

✚ m2xdate



Input Date Formats

- MATLAB supports the following date-string formats for time series applications

Date-String Format	Usage Example
dd-mmm-yyyy HH:MM:SS	01-Mar-2000 15:45:17
dd-mmm-yyyy	01-Mar-2000
mm/dd/yy	03/01/00
mm/dd	03/01
HH:MM:SS	15:45:17
HH:MM:SS PM	3:45:17 PM
HH:MM	15:45
HH:MM PM	3:45 PM
mmm.dd, yyyy HH:MM:SS	Mar.01,2000 15:45:17
mmm.dd, yyyy	Mar.01,2000
mm/dd/yyyy	03/01/2000



Output Date Formats

✚ The format used in datestr function must one of the follows:

dateform	Format	Description
0	01-Mar-1996 15:45:17	day-month-year hour:minute:second
1	01-Mar-1996	day-month-year
2	03/01/96	month/day/year
3	Mar	month, three letters
4	M	month, single letter
5	3	month
6	03/01	month/day
7	1	day of month
8	Wed	day of week, three letters
9	W	day of week, single letter
10	1996	year, four digits
11	96	year, two digits
12	Mar96	month year
13	15:45:17	hour:minute:second
14	03:45:17 PM	hour:minute:second AM or PM
15	15:45	hour:minute
16	03:45 PM	hour:minute AM or PM
17	Q1-96	calendar quarter-year
18	Q1	calendar quarter

Exercise

- ✚ Download from finance.yahoo.com and from google/finance the last year prices of Ryanair Airlines (RYAAY)
- ✚ Create two arrays containing dates (in serial number) and settlement prices, one for each provider
- ✚ Create a matrix of both settlement prices that have the same dates