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# **Fusion Data Framework Documentation**

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CONTENTS

<b>1</b>	<b>About FDF</b>	<b>2</b>
<b>2</b>	<b>User Guide</b>	<b>3</b>
<b>3</b>	<b>Code Reference</b>	<b>4</b>
3.1	Class Machine . . . . .	4
3.2	Class Shot . . . . .	4
3.3	Class Logbook . . . . .	4
3.4	Class Signal . . . . .	4
<b>4</b>	<b>License</b>	<b>5</b>
<b>5</b>	<b>Indices and tables</b>	<b>6</b>
	<b>Index</b>	<b>7</b>



Fusion Data Framework (FDF) is a data access, management, and visualization framework for magnetic fusion experiments.

Repository: <https://github.com/Fusion-Data-Framework/fdf>

Documentation: [PDF](#)

## ABOUT FDF

Fusion Data Framework (FDF) is a data access, management, and visualization framework for magnetic fusion experiments.

Repository: <https://github.com/Fusion-Data-Framework/fdf>

Documentation: [HTML](#) or [PDF](#)

Submit bugs or feature requests: <https://github.com/Fusion-Data-Framework/fdf/issues>

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To contribute to the FDF project, please contact John, David, Kevin, or Howard.

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CHAPTER  
**TWO**

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**USER GUIDE**

## CODE REFERENCE

### 3.1 Class Machine

**class** `factory.Machine` (*name='nstx', shotlist=[], xp=[], date=[]*)

Factory root class that contains shot objects and MDS access methods.

Basic class initialization is performed as follows: `>>>nstx = Machine(name='nstx')`

the Machine class contains a model shot object: `nstx.s0`

shot data can be accessed directly through the Machine class: `>>> nstx.s141398 >>> nstx.s141399`

alternatively, a list of shot #'s may be provided during initialization: `>>>nstx = Machine(name='nstx', shotlist=[141398, 141399])`

or added later using the addshot method: `>>>nstx.addshot([141398, 141399])`

### 3.2 Class Shot

**class** `factory.Shot` (*shot, root=None, parent=None*)

### 3.3 Class Logbook

**class** `factory.Logbook` (*name='nstx', root=None*)

### 3.4 Class Signal

**class** `fdf_signal.Signal` (*\*\*kwargs*)

`sig=fdf.Signal(signal_ndarray, units='m/s', axes=['radius','time'], axes_values=[ax1_1Darray, ax2_1Darray], axes_units=['s','cm'])`

e.g.: `mds.Signal(np.arange((20*10)).reshape((10,20)), units='keV', axes=['radius','time'], axes_values=[100+np.arange(10)*5, np.arange(20)*0.1], axes_units=['s','cm'])`

or an empty signal: `s=mds.Signal() default axes order=[time, space] sig=fdf.Signal(units='m/s', axes=['radius','time'], axes_values=[radiusSignal, timeSignal])`

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## INDICES AND TABLES

- `genindex`
- `modindex`
- `search`

## L

Logbook (class in factory), [4](#)

## M

Machine (class in factory), [4](#)

## S

Shot (class in factory), [4](#)

Signal (class in fdf\_signal), [4](#)