

Creating a DataFrame/Loading Data

```
using namespace hmdf;
using MyDataFrame = StdDataFrame<...>;

df.load_index(...);
df.load_column(...);
df.load_data(...);
df.read<...>(...);
```

Getting Data

```
df.get_index();
df.get_column<...>(...);
df.get_row<...>(...);
```

Slicing Data

Reshaping Data

```
df.bucketize<...>(...);
df.groupby<...>(...);
df.concat<...>(...);
df.combine<...>(...);
df.join<...>(...);
df.sort<...>(...)
... more
```

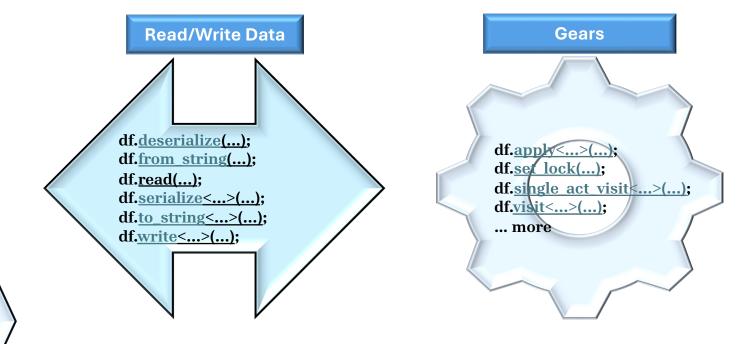
Getting Information About Data

```
df.canon_corr<...>(...);
df.compact_svd<...>(...);
df.covariance_matrix<...>(...);
df.difference<...>(...);
df.fast_ica<...>(...);
df.load_indicators<...>(...);
df.get_col_unique_values<...>(...);
df.inversion_count<...>(...);
df.knn<...>(...);
df.mask<...>(...);
df.MC_station_dist<...>(...);
df.pattern_match<...>(...);
df.peaks<...>(...);
df.peaks<...>(...);
... more
```

```
df.get above quantile data<...>(...);
df.get top n data<...>(...);
df.get data before times<...>(...);
df.get data by affin<...>(...);
df.get data by dbscan<...>(...);
df.get data by kmeans<...>(...);
df.get data by like<...>(...);
df.get data by loc<...>(...);
df.get data by mshift<...>(...);
df.get data by rand<...>(...);
df.get data by sel<...>(...);
df.get data by stdev<...>(...);
df.get data by stdev<...>(...);
df.get top n data<...>(...);
... more
```

Altering Data

```
df.change freq<...>(...);
df.detect and change<...>(...);
df.drop_missing<...>(...);
df.fill missing<...>(...);
df.make stationary<...>(...);
df.remove above quantile data<...>(...);
df.remove bottom n data<...>(...);
df.remove column<...>(...);
df.remove data by fft<...>(...);
df.remove data by igr<...>(...);
df.remove data by hampel<...>(...);
df.remove data by like<...>(...);
df.remove data by loc<...>(...);
df.remove data by sel<...>(...);
df.remove duplicates<...>(...);
df.replace<...>(...);
df.shuffle<...>(...);
... more
```



Some of Statistical Analysis done on Columns

```
ExponentiallyWeightedMeanVisitor<...> ewmvisitor(...);
MeanVisitor<...> mvisitor(...);
                                              df.single_act_visit<...>(...);
df.single act visit<...>(...);
std::cout << mvisitor.get result();</pre>
                                              std::cout << ewmvisitor.get_result();</pre>
StdVisitor<...> svisitor(...);
                                              <u>CumMaxVisitor<...></u> <u>cmvisitor(...);</u>
df.single_act_visit<...>(...);
                                              df.single act visit<...>(...);
std::cout << svisitor.get result();</pre>
                                              std::cout << cmvisitor.get_result();</pre>
MeadianVisitor<...>
                         mvisitor(...);
                                              QuantileVisitor<...> qvisitor(...);
df.single_act_visit<...>(...);
                                              df.single act visit<...>(...);
std::cout << mvisitor.get result();</pre>
                                              std::cout << qvisitor.get result();
```

Some of Artificial Intelligence Analysis done on Columns

```
EntropyVisitor<...> evisitor(...);

df.single_act_visit<...>(...);
std::cout << evisitor.get_result()[0];

FastFourierTransVisitor<...> fftvisitor(...);

df.single_act_visit<...>(...);
std::cout << fftvisitor.get_result()[0];
...more

PolicyLearningLossVisitor<...> pllvisitor(...);

df.single_act_visit<...>(...);
std::cout << pllvisitor.get_result()[0];</pre>
```

```
SigmoidVisitor<...> svisitor(...);

df.single_act_visit<...>(...);
std::cout << svisitor.get_result()[0];

AnomalyDetectByIQRVisitor<...> iqrvisitor(...);

df.single_act_visit<...>(...);
std::cout << iqrvisitor.get_result()[0];

SpectralClusteringVisitor<...> scvisitor(...);

df.single_act_visit<...>(...);
std::cout << scvisitor.get_result()[0];
... more
```



Some of Financial Indicators done on Columns

Hello World is Here

Full Documentation with Code Samples are Here

```
BollingerBand<...> bbvisitor(...);

df.single_act_visit<...>(...);
std::cout << bbvisitor.get_upper_band_to_raw()[0];
... more

HurstExponentVisitor<...> hevisitor(...);

df.single_act_visit<...>(...);
std::cout << hevisitor.get_result();

SharpeRatioVisitor<...> srvisitor(...);
df.single_act_visit<...>(...);
std::cout << srvisitor.get_result();
```

```
GarmanKlassVolVisitor<...> gkvvisitor(...);

df.single_act_visit<...>(...);
std::cout << gkvvisitor.get_result()[0];

VWAPVisitor<...> vwapvisitor(...);

df.single_act_visit<...>(...);
std::cout << vwapvisitor.get_result()[0];

RSIVisitor<...> rsivisitor(...);

df.single_act_visit<...>(...);
std::cout << rsivisitor.get_result()[0];</pre>
```