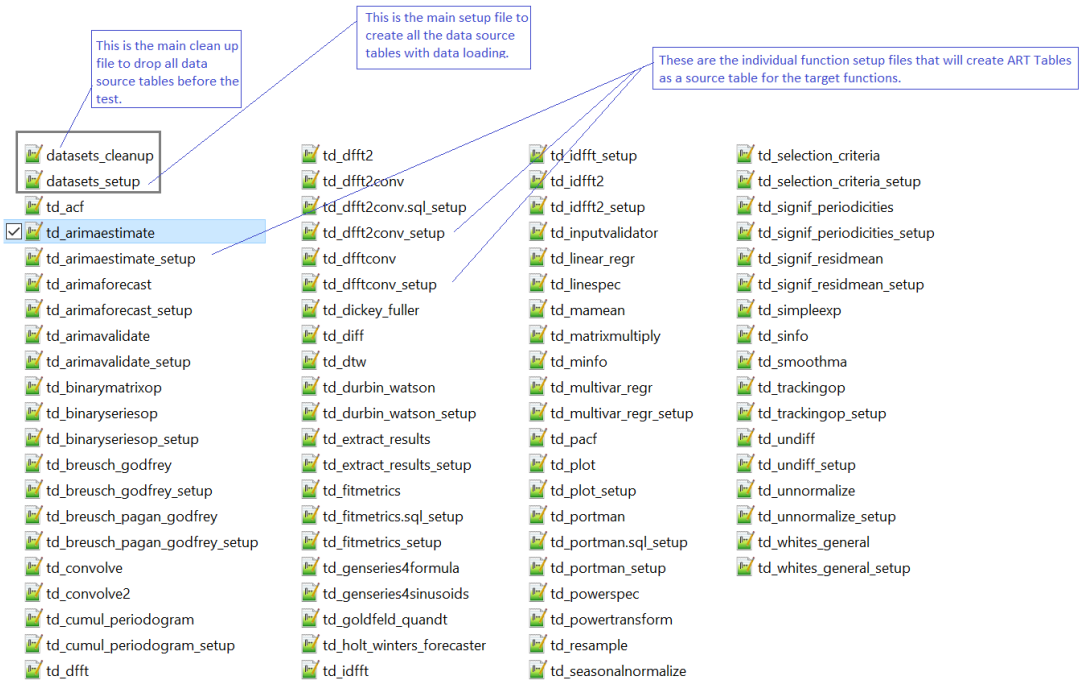
File structure

dataset_cleanup:	cleanup source tables
dataset_setup:	create source table with data loading
td_<function>_setup:	each function's setup step
td_<function>:	function execution query



Usage

1). The file **datasets_setup** is to create all the raw data source tables and conduct data loading. The created source tables will be used by the individual functions' execution.
i.e.

```
DROP TABLE StockDataSet;
CREATE TABLE StockDataSet (DataSetID integer, seqNo integer, timevalue DATE, Magnitude float);

INSERT INTO StockDataSet VALUES( 556, 1, DATE '2019-01-02', 60.9);
INSERT INTO StockDataSet VALUES( 556, 2, DATE '2019-01-09', 61.617);
INSERT INTO StockDataSet VALUES( 556, 3, DATE '2019-01-16', 61.08);
INSERT INTO StockDataSet VALUES( 556, 4, DATE '2019-01-23', 63.9);
INSERT INTO StockDataSet VALUES( 556, 5, DATE '2019-01-30', 63.81);
INSERT INTO StockDataSet VALUES( 556, 6, DATE '2019-02-06', 63.354);
INSERT INTO StockDataSet VALUES( 556, 7, DATE '2019-02-13', 63.871);
INSERT INTO StockDataSet VALUES( 556, 8, DATE '2019-02-20', 61.886);
INSERT INTO StockDataSet VALUES( 556, 9, DATE '2019-02-27', 61.49);
INSERT INTO StockDataSet VALUES( 556, 10, DATE '2019-03-06', 61.524);
INSERT INTO StockDataSet VALUES( 556, 11, DATE '2019-03-13', 62.132);
INSERT INTO StockDataSet VALUES( 556, 12, DATE '2019-03-20', 61.599);
INSERT INTO StockDataSet VALUES( 556, 13, DATE '2019-03-27', 61.043);

INSERT INTO StockDataSet VALUES( 556, 14, DATE '2019-04-03', 61.842);
INSERT INTO StockDataSet VALUES( 556, 15, DATE '2019-04-10', 61.599);
INSERT INTO StockDataSet VALUES( 556, 16, DATE '2019-04-17', 59.465);
INSERT INTO StockDataSet VALUES( 556, 17, DATE '2019-04-24', 58.765);
INSERT INTO StockDataSet VALUES( 556, 18, DATE '2019-05-01', 58.81);
INSERT INTO StockDataSet VALUES( 556, 19, DATE '2019-05-08', 58.14);
INSERT INTO StockDataSet VALUES( 556, 20, DATE '2019-05-15', 58.49);
INSERT INTO StockDataSet VALUES( 556, 21, DATE '2019-05-22', 57.65);
INSERT INTO StockDataSet VALUES( 556, 22, DATE '2019-05-29', 57.114);
INSERT INTO StockDataSet VALUES( 556, 23, DATE '2019-06-05', 57.787);
INSERT INTO StockDataSet VALUES( 556, 24, DATE '2019-06-12', 58.911);
```

2). The file **datasets_cleanup** is to drop all the data source tables. This is a cleanup procedure before and after a full test run. Please don't run it during individual function's tests.

i.e.

```
DROP TABLE STOCKDATASET;
DROP TABLE SOUVENIRTIMESERIES;
DROP TABLE RIVERDATA;
DROP TABLE SALES;
DROP TABLE ORDERS1_12;
DROP TABLE ORDERS1_12MF;
DROP TABLE TIMESERIESDATASETSD4;
DROP TABLE BLOOD2AGEANDWEIGHT;
DROP TABLE FM_BLOOD2AGEANDWEIGHT;
DROP TABLE US_AIRPASS;
DROP TABLE INFLATION;
DROP TABLE BINARY_COMPLEX_LEFT;
DROP TABLE BINARY_COMPLEX_RIGHT;
DROP TABLE BINARY_REALS_LEFT;
DROP TABLE BINARY_REALS_RIGHT;
DROP TABLE BINARYM_COMPLEX_LEFT;
DROP TABLE BINARYM_COMPLEX_RIGHT;
DROP TABLE BINARYM_COMPLEX_LEFT;
DROP TABLE BINARYM_COMPLEX_RIGHT;
DROP TABLE BINARYM_REALS_LEFT;
DROP TABLE BINARYM_REALS_RIGHT;
DROP TABLE BINARYM_REALS_LEFT;
DROP TABLE BINARYM_REALS_RIGHT;
DROP TABLE CONVOLVE2VALIDLEFT;
DROP TABLE CONVOLVE2VALIDRIGHT;
DROP TABLE CONVOLVE2_REALS_LEFT;
DROP TABLE CONVOLVE2_REALS_RIGHT;
DROP TABLE CONVOLVE2_COMPLEX_LEFT;
DROP TABLE CONVOLVE2_COMPLEX_RIGHT;
DROP TABLE GENDATA;
DROP TABLE PRODUCTIONDATA;
DROP TABLE PRODUCTIONDATA2;
DROP TABLE MVDFFT8;
DROP TABLE DFFT2_TESTMATRIX16;
DROP TABLE TESTRIVER;
DROP TABLE XCONVOLVE_COMPLEX_LEFT;
DROP TABLE HCONVOLVE_COMPLEX_RIGHT;
DROP TABLE XCONVOLVE_COMPLEX_LEFTMULTI;
DROP TABLE HCONVOLVE_COMPLEX_RIGHTMULTI;
DROP TABLE TESTDFFT8;
DROP TABLE DFFT2_TESTMATRIX16;
DROP TABLE DFFTCONV_REAL_8_8;
DROP TABLE DFFT2CONV_REAL_4_4;
DROP TABLE SEEDS;
DROP TABLE ORDERS1;
```

3). The individual function's setup files, i.e., **td_arimaestimate_setup**, is to run arimaestimate function's setup and prepare the **ART tables** from other UAF functions. Those ART tables are source tables that contain the statistic results needed by the current testing function.

i.e.

td_arimaestimate_setup.sql:

```
--Setup for TD_ARIMAESTIMATE:
EXECUTE FUNCTION INTO VOLATILE ART(diff1_souv)
TD_DIFF(
  SERIES_SPEC(
    TABLE_NAME(souvenirtimeseries),
    ROW_AXIS(SEQUENCE(row_axis)),
    SERIES_ID(seriesID),
    PAYLOAD(FIELDS(sales),CONTENT(REAL))
  ),
  FUNC_PARAMS(
    LAG(1),
    DIFFERENCES(1),
    SEASONAL_MULTIPLIER(0))
);
EXECUTE FUNCTION INTO VOLATILE ART(diff12_souv)
TD_DIFF(
  SERIES_SPEC(
    TABLE_NAME(diff1_souv),
    ROW_AXIS(SEQUENCE(ROW_I)),
    SERIES_ID(seriesID),
    PAYLOAD(FIELDS(OUT_sales),CONTENT(REAL))
  ),
  FUNC_PARAMS(LAG(12), DIFFERENCES(1), SEASONAL_MULTIPLIER(0))
);
```

4). The last step is to run individual function query.

i.e., TD_ARIMAESTIMATE uses source table diff12_souv created from its setup file:

td_arimaestimate.sql:

```
EXECUTE FUNCTION
INTO VOLATILE ART(ARMA_ART_MLE_SEASON_12)
TD_ARIMAESTIMATE(
  SERIES_SPEC(
    TABLE_NAME(diff12_souv),
    ROW_AXIS(SEQUENCE(ROW_I)),
    SERIES_ID(seriesID AS SID),
    PAYLOAD(FIELDS(OUT_OUT_sales), CONTENT(REAL))
  ),
  FUNC_PARAMS(
    NONSEASONAL(MODEL_ORDER(2,0,1)),
    CONSTANT(0),
    ALGORITHM(MLE),
    COEFF_STATS(1),
    FIT_METRICS(1),
    RESIDUALS(1),
    FIT_PERCENTAGE(80)
  )
);
```