

# Examples by API

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The C and FORTRAN examples below point to the HDF5-1.10 examples in the [hdf5-examples git repository](#). Examples for HDF5-1.8 and HDF5-1.6 are also included in the repository.

The Java examples are in the HDF5-1.10 source code, and the Java Object package examples are in the HDFView source. *Please note that you must comment out the "package" statement at the top when downloading a Java/Java Object example individually.*

The MATLAB and Python examples were generously provided by a user and are not tested.

## Datasets:

| Feature   | Languages*                                 | HDF5 File (C)       | DDL (C) |
|---|--|---------------------|---------|
| Set Space Allocation Time for Dataset                       | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_d_alloc.h5     | ddl     |
| Read / Write Dataset using Fletcher32 Checksum Filter       | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_d_checksum.h5  | ddl     |
| Read / Write Chunked Dataset                                | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_d_chunk.h5     | ddl     |
| Read / Write Compact Dataset                                | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_d_compact.h5   | ddl     |
| Read / Write to External Dataset                            | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_d_extern.h5    | ddl     |
| Read / Write Dataset w/ Fill Value                          | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_d_fillval.h5   | ddl     |
| Read / Write GZIP Compressed Dataset                        | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_d_gzip.h5      | ddl     |
| Read / Write Data by Hyperslabs                             | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_d_hyper.h5     | ddl     |
| Read / Write Dataset with n-bit Filter                      | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_d_nbit.h5      | ddl     |
| Read / Write Integer Dataset                                | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_d_rdwr.h5      | ddl     |
| Read / Write Dataset w/ Shuffle Filter and GZIP Compression | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_d_shuffle.h5   | ddl     |
| Read / Write Dataset using Scale-Offset Filter (float)      | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_d_soffloat.h5  | ddl     |
| Read / Write Dataset using Scale-Offset Filter (integer)    | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_d_soint.h5     | ddl     |
| Read / Write Dataset using SZIP Compression                 | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_d_szip.h5      | ddl     |
| Read / Write Dataset using Data Transform Expression        | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_d_transform.h5 | ddl     |
| Read / Write Unlimited Dimension Dataset                    | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_d_unlimadd.h5  | ddl     |
| Read / Write GZIP Compressed Unlimited Dimension Dataset    | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_d_unlimgzip.h5 | ddl     |
| Read / Write / Edit Unlimited Dimension Dataset             | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_d_unlimmod.h5  | ddl     |
| Use Dynamic Array to Read Data                              | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_d_unlimadd.h5  | ddl     |
| Read / Write Dataset using LZF Compression                  | C FORTRAN Java JavaObj MATLAB PyHigh PyLow |                     |         |

\*Languages are C, Fortran, Java (JHI5), Java Object Package, Python (High Level), and Python (Low Level APIs).

## Groups:

| Feature  | Languages                                  | HDF5 File (C)                            | Output (C) | DDL (C)   |
|--|--|--|------------|-----------|
| Create "compact-or-indexed" Format Groups                  | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_g_compact1.h5<br>h5ex_g_compact2.h5 | Output     | ddl1 ddl2 |
| Track links in a Group by Creation Order                   | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_g_corder.h5                         | Output     |           |
| Create / Open / Close a Group                              | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_g_create.h5                         |            | ddl       |
| Create Intermediate Groups                                 | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_g_intermediate.h5                   | Output     |           |
| Iterate over Groups w/ H5Literate                          | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_g_iterate.h5                        | Output     |           |
| Set Conditions to Convert between Compact and Dense Groups | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_g_phase.h5                          | Output     |           |
| Recursively Traverse a File with H5Literate                | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_g_traverse.h5                       | Output     |           |
| Recursively Traverse a File with H5Ovisit / H5Lvisit       | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_g_visit.h5                          | Output     |           |

## Datatypes:

| Feature   | Languages                                  | HDF5 File (C)        | Output (C) | DDL (C) |
|---|--|----------------------|------------|---------|
| Read / Write <b>Array</b> (Attribute)             | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_arrayatt.h5   | Output     | ddl     |
| Read / Write <b>Array</b> (Dataset)               | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_array.h5      | Output     | ddl     |
| Read / Write <b>Bitfield</b> (Attribute)          | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_bitatt.h5     | Output     | ddl     |
| Read / Write <b>Bitfield</b> (Dataset)            | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_bit.h5        | Output     | ddl     |
| Read / Write <b>Compound</b> (Attribute)          | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_cmpdatt.h5    | Output     | ddl     |
| Read / Write <b>Compound</b> (Dataset)            | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_cmpd.h5       | Output     | ddl     |
| Commit Named Datatype and Read Back               | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_commit.h5     | Output     | ddl     |
| Convert Between Datatypes in Memory               | C FORTRAN Java JavaObj MATLAB PyHigh PyLow |                      | Output     |         |
| Read / Write <b>Complex Compound</b> (Attribute)  | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_cpxcmpdatt.h5 | Output     | ddl     |
| Read / Write <b>Complex Compound</b> (Dataset)    | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_cpxcmpd.h5    | Output     | ddl     |
| Read / Write <b>Enumerated</b> (Attribute)        | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_enumatt.h5    | Output     | ddl     |
| Read / Write <b>Enumerated</b> (Dataset)          | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_enum.h5       | Output     | ddl     |
| Read / Write <b>Floating Point</b> (Attribute)    | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_floatatt.h5   | Output     | ddl     |
| Read / Write <b>Floating Point</b> (Dataset)      | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_float.h5      | Output     | ddl     |
| Read / Write <b>Integer Datatype</b> (Attribute)  | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_intatt.h5     | Output     | ddl     |
| Read / Write <b>Integer Datatype</b> (Dataset)    | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_int.h5        | Output     | ddl     |
| Read / Write <b>Object References</b> (Attribute) | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_objrefatt.h5  | Output     | ddl     |
| Read / Write <b>Object References</b> (Dataset)   | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_objref.h5     | Output     | ddl     |
| Read / Write <b>Opaque</b> (Attribute)            | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_opaqueatt.h5  | Output     | ddl     |
| Read / Write <b>Opaque</b> (Dataset)              | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_opaque.h5     | Output     | ddl     |
| Read / Write <b>Region References</b> (Attribute) | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_regrefatt.h5  | Output     | ddl     |

|  |  |                       |        |     |
|--|--|-----------------------|--------|-----|
| <b>Read / Write Region References (Dataset)</b>        | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_regref.h5      | Output | ddl |
| <b>Read / Write String (Attribute)</b>                 | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_stringatt.h5   | Output | ddl |
| <b>Read / Write String (Dataset)</b>                   | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_string.h5      | Output | ddl |
| <b>Read / Write Variable Length (Attribute)</b>        | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_vlenatt.h5     | Output | ddl |
| <b>Read / Write Variable Length (Dataset)</b>          | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_vlen.h5        | Output | ddl |
| <b>Read / Write Variable Length String (Attribute)</b> | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_vlstringatt.h5 | Output | ddl |
| <b>Read / Write Variable Length String (Dataset)</b>   | C FORTRAN Java JavaObj MATLAB PyHigh PyLow | h5ex_t_vlstring.h5    | Output | ddl |