

Fortran CSV Exporter Documentation

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1 File Documentation

1.1 export_csv.f90

- **@brief** Module to export 1D arrays to a CSV file.
- **@details** This module contains subroutines for writing one-dimensional arrays of different data types to a CSV file. It's designed to be reusable and easily included in other Fortran programs.

1.2 Subroutines

1.2.1 int_1D_export

- **@brief** Exports a 1D integer array to a CSV file.
- **@details** This subroutine opens a file and writes each element of the array on a new line, following the format "index, "value"". It uses a Fortran format specifier (I4,A,I10,A) to ensure proper spacing and quoting for the output.
- **@param file_name** The name of the output CSV file.
- **@param array** The 1D integer array to be exported.
- **@param dim_array** The dimension (size) of the array.

1.2.2 real8_1D_export

- **@brief** Exports a 1D real*8 (double precision) array to a CSV file.
- **@details** This subroutine is similar to int_1D_export but is tailored for real*8 data types. It writes each element on a new line. The format specifier (I4,A,F,A) handles the specific formatting for floating-point numbers.
- **@param file_name** The name of the output CSV file.
- **@param array** The 1D real*8 array to be exported.
- **@param dim_array** The dimension (size) of the array.

2 Main Program

2.1 Test_array.f90

- **@details** This file contains the main program, `Test_array`, which serves as a test case for the `export_csv` module. It demonstrates how to initialize an integer array, display its contents to the console, and then use the `int_1D_export` subroutine to save the data into a CSV file.