

PRE Process Project

Task

Build a program named `csv` with the functionality given below.

[SUBMIT \(as a single zip file named pre.zip\): by 11:59 PM, Friday February 28](#)

Activity log

To document each team member's activity and contribution to the project, each team member must contribute a `.csv` file with the following format to the `pre.zip` submission file:

DATE	UBIT	DURATION	ACTIVITY & TOOL DESCRIPTION
2025/02/04	aafolabi	20 minutes	edited main.c using emacs editor to add correct #includes

Each team member's activity log file must be named with their UBIT - my file would be `aafolabi.csv`

All the activity log files must be submitted in the same zip file as the code.

Description

NAME

`csv` - process data in a CSV (Comma-Separated Value) file.

SYNOPSIS

`csv [-frh] [-max field] [-min field] [-mean field] [-records field value] file`

DESCRIPTION

The `csv` program reads data from a CSV file (**file**), processes the contents and produces results according to command-line arguments, as follows.

-f Display the number of fields in the first record of **file**.

-r Display the number of data records in **file**. If **-h** is not given this is the number of lines in the file. If **-h** is given this is one less than the number of lines in the file.

-h Treat the first record of **file** as a header record rather than a data record. If this option is used then **field** in the following options must be specified with the title of the corresponding field from the header row (the numeric positional option is not available). If this option is not used then **field** in the following options must be specified with the numeric positional option (the title of the corresponding field from the header row is not available). If an incorrect field identifier is used the program exits with error code `EXIT_FAILURE`.

-max field Display the maximum value in the indicated **field** of the data records. The first field is numbered 0. This option ignores non-numeric data in the indicated field. If there is no numeric data in the indicated field in any of the data records the program exits with error code `EXIT_FAILURE`. See how fields are identified when the **-h** option is used.

-min field Display the minimum value in the indicated **field** of the data records. The first field is numbered 0. This option ignores non-numeric data in the indicated field. If there is no numeric data in the indicated field in any of the data records the program exits with error code `EXIT_FAILURE`. See how fields are identified when the **-h** option is used.

-mean field Display the arithmetic mean (average) value in the indicated **field** of the data records. The first field is numbered 0. This option ignores non-numeric data in the indicated field. If there is no numeric data in the indicated field in any of the data records the program exits with error code `EXIT_FAILURE`. See how fields are identified when the **-h** option is used.

-records field value Display the records from **file** containing **value** in the the indicated **field**. The first field is numbered 0. Value is formatted according to the same rules as data in fields. See how fields are identified when the **-h** option is used.

EXAMPLES

These examples are based on the following [sample file](#). In compliance with [stated requirements](#) this file is also available from the [Statistics Canada](#) archive.

Assume that '%' is the operating system prompt.

```
% csv -f 05020004-eng.csv
8
% csv -r 05020004-eng.csv
820
% csv -min 0 05020004-eng.csv
1998
% csv -h -min "Ref_Date" 05020004-eng.csv
1998
% csv -max 0 05020004-eng.csv
2004
% csv -h -max "Ref_Date" 05020004-eng.csv
2004
% csv -mean 7 05020004-eng.csv
10.26
% csv -h -mean "Value" 05020004-eng.csv
10.26
% csv -min 0 -max 0 -mean 7 05020004-eng.csv
1998
```

```
2004
10.26
% csv -h -min "Ref_Date" -max "Ref_Date" -mean "Value" 05020004-eng.csv
1998
2004
10.26
% csv -records 7 61.1 05020004-eng.csv
1998,Canada,"Total, all persons two years and older",Foreign television programmes,"Total, all types of television programmes",v21419952,1.1.3.
2001,Canada,"Total, all persons two years and older",Foreign television programmes,"Total, all types of television programmes",v21419952,1.1.3.
% csv -h -records "Value" 61.1 05020004-eng.csv
1998,Canada,"Total, all persons two years and older",Foreign television programmes,"Total, all types of television programmes",v21419952,1.1.3.
2001,Canada,"Total, all persons two years and older",Foreign television programmes,"Total, all types of television programmes",v21419952,1.1.3.
```

EXIT STATUS

EXIT_SUCCESS if execution terminates normally
EXIT_FAILURE if execution terminates abnormally

STANDARDS

The input file is expected to adhere to the [rfc4180 standard](https://www.ietf.org/rfc/rfc4180.txt) for CSV files. This file is available on-line at <https://www.ietf.org/rfc/rfc4180.txt>