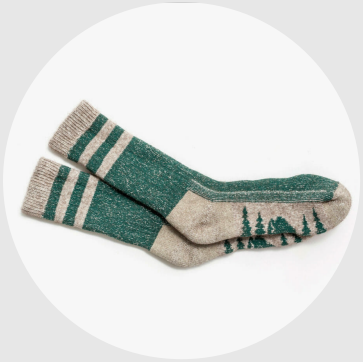

Lab 5/CIS*2250

Determining Unique Values

courselink.uoguelph.ca

A. Hamilton-Wright &
K. Raymond

Overview

Learning objectives: ○ Managing lists of values ◑ Dealing with large data sets ● Extracting and examining fields

Skills

coordination + communication (3/6)

organization + planning (3/6)

teamwork (3/6)

programming + tools (5/6)

strategy (3/6)

visualization (0/6)

(*)[The skill scale is from 0 (Fundamental Awareness) to 6 (Main Focus).]

Image description

A pair of work socks. Image source freebie.photography CC BY 3.0

Overview: Arrays in perl

You have been using arrays in perl for some weeks now, however all of these arrays have been populated by calling a function from Text::CSV. We have not modified the contents of the array ourselves.

You can add elements to an array in perl using the `push` function.

For example, the following code creates an empty array, and then adds two values to it:

```
sub printArrayContents {

    # place the first argument into the variable @array_argument
    my @array_argument = @_;

    if ( $#array_argument >= 0 ) {
        print "Array has " . $#array_argument . " values:\n";

        foreach my $i (0 .. $#array_argument) {
            print "  Value " . $i . " is '" .
                    $array_argument[$i] . "'\n";
        }
    } else {
        print "Array is empty\n";
    }
}

my @list_of_values;

printArrayContents(@list_of_values);

push(@list_of_values, "one");
printArrayContents(@list_of_values);

push(@list_of_values, "two");
printArrayContents(@list_of_values);
```

Note the `push` function adds the new value to the *end* of the array, without disturbing the order of any of the other values.

Task 1 Description: Collecting Unique Values

For this lab, you are asked to write a program `printUniqueColumnValues.pl` that will work as follows:

- it will take as arguments the name of a csv file to process, and a column to examine, for example:

  ```
  perl printUniqueColumnValues.pl WorldBank_EducationData.csv 2
  ```

- in the column of data within the .csv file, a list is collected of any value not yet seen
- at the end, this list is printed.

This will provide a summary of what the values are within a given “column” of data in the file.

You will find the `WorldBank_EducationData.csv` file on CourseLink. This file describes rates of education around the world.

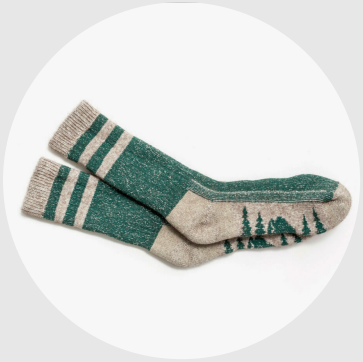

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Image description

A pair of work socks. Image source freebie.photography CC BY 3.0

If the file is run as in the example above:

`perl printUniqueColumnValues.pl WorldBank_EducationData.csv 2`

then the expected output is this:

```
Series
Adjusted net enrolment rate, primary, female (%)
Adjusted net enrolment rate, primary, male (%)
Adjusted net enrolment rate, upper secondary, both sexes (%)
Adjusted net enrolment rate, primary, both sexes (%)
Adjusted net enrolment rate, upper secondary, female (%)
Adjusted net enrolment rate, upper secondary, male (%)
Adjusted net intake rate to Grade 1 of primary education, both sexes (%)
Adjusted net intake rate to Grade 1 of primary education, female (%)
Adjusted net intake rate to Grade 1 of primary education, male (%)
Adult illiterate population, 15+ years, % female
Adult illiterate population, 15+ years, both sexes (number)
Adult illiterate population, 15+ years, female (number)
Adjusted net enrolment rate, lower secondary, both sexes (%)
Adjusted net enrolment rate, lower secondary, female (%)
Adjusted net enrolment rate, lower secondary, male (%)
Adult illiterate population, 15+ years, male (number)
```

Be sure to upload your `printUniqueColumnValues.pl` to CourseLink.