AWK Assignment

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Problem: "You've been tasked with creating an html table that houses the grades and averages for one of your Professors courses. It should be viewable in any browser and contain relevant average information for each assignment/student."

Team Members & Responsibilities

Kathleen Near - AWK script, testing, & documentation

Leah Wofford - Formatting & testing

Gaby Gutierrez - Research & documentation

Problem Solving Framework & Steps

1. We identified the problem by asking clarifying questions
    - Are there any output requirements?
    - Are the tests and quizzes on different point scales?
    - How do you want empty entries to be handled?

    It was determined that the result should not contain names and and should be in the order ID, test scores, test average, followed by a separator, quiz scores, quiz average, followed by a separator, an overall grade, and then a column at the very bottom with the class average. Empty entries should be excluded from calculation and quiz scores are out of 10 points whereas test scores are out of 100 points.

2. We defined the problem by sketching out what the resulting output table should look like and marking the columns that must be added vs. those that already exist

ID	T1	T2	T3	T4	TAvg	Q1	Q2	Q3	Q4	Q5	QAvg	Grade
##	##	##	##	##	##	##	##	##	##	##	##	##
ClassAvg												##

3. We explored possible strategies using the following resources:
    - AWK: www.grymoire.com/Unix/Awk.html#uh-0

- HTML: https://www.w3schools.com/html/html_tables.asp

4. We acted on the chosen strategies in the awk script file
   Strategies: Parse data by setting the input field separator
   NR==1 pattern to deal with the first line differently than the rest
   Use of a regular expression to ignore empty entries
   For loops to traverse only the columns needed to sum and average
   Formatted printf statements to round numbers and write HTML
   etc.

5. Looked back incrementally to verify correctness first by printing a table to the console, then by writing up a test HTML file, then by combining the two to print a simple HTML table to a file containing the csv file's contents. Tested with multiple browsers (Firefox, Chrome, Opera).

Instructions

Execute the following Linux commands on the Terminal:

```
chmod +x gradeInfo.awk
gradeInfo.awk StudentGrades_Individual.csv > gradeTable.html
```

The csv file's contents have now been converted to an HTML table contained in gradeTable.html. This file can be opened and viewed in any browser.

Screenshot

ID	T1	T2	T3	T4	TAvg	Q1	Q2	Q3	Q4	Q5	QAvg	Grade
1696	82	5	79	22	47	7	0	0	7	9	5	46
7767	3	26	72	19	30	8	7	1	4	8	6	44
4216	83	8	9	17	29	4	9	8	3	6	6	46
7691	10	98	79	53	60	2	6	0	5	1	3	42
1012	67				67	6	5				6	59
3075	42	8	25	30	26	4	9	7	4	8	6	47
9894	88	13	7	64	43	4	4	6	8	5	5	49
9847	60	31	82	28	50	6	9	0	2	1	4	42
2858	75	11			43	6	1	9			5	49
6397	16	36	39	27	30	1	6	3	4	4	4	33
1357	77	1	78	41	49	0	6	6	8	7	5	52
1404	56	2	86	23	42	8	9	10	10	8	9	69
9054	100	24	87	96	77	1	3	10	6	7	5	64
3480	90	76	81	48	74	9	2	3	4	5	5	58
7367	94	7	59	34	48	3	5	3	10	9	6	55
2983	100	20	86	47	63	0	3	3	6	3	3	45
9269	44	0	65	36	36	3	3	9	7	0	4	41
3154	48	12	24	79	41	3	2	6	10	4	5	46
3562	94	33	79	71	69	8	5	5	1	8	5	61