

## CS390-01: Unix Programming

Due at beginning of class, Monday, November 6

## Program #5

(10 points)

For this assignment, you are to write an **awk** program that computes baseball statistics for the players stored in a text data file.

- Your program must run with the following command line (name your own test file whatever you like)

```
awk -f program3.awk players.txt
```

### Input Data

Your program will accept an input data file that looks like the sample below. On each line of data there is each player's:

- first name
- last name
- number of plate appearances
- number of at bats
- number of single hits
- number of doubles
- number of triples
- number of home runs,
- and number of walks or hit by pitch

```
chipper jones 10614 8984 1671 549 38 468 1530
hank aaron 13941 12364 2294 624 98 755 1434
error example1 10614 8984 1671 5x9 38 468 1530
```

### Output Report

Your output should tabulate each player's: batting average, slugging percentage and on base percentage. Your program must also handle the following type of error in the input data:

- Incorrect data (i.e. not numbers). See example1 line of input above

```
----- BEGIN STATISTICS REPORT -----
```

```
LASTNAME, FIRSTNAME      AVG    SLG    OBP
jones, chipper           : 0.303 0.529 0.401
aaron, hank              : 0.305 0.555 0.373
example1, error          : Unable to compute result. Invalid numeric data. ***
```

```
----- END STATISTICS REPORT -----
```

### How to compute statistics

- The batting average (AVG) is the total number of hits (singles, doubles, triples and homeruns) divided by the number of at bats. A perfect batting average would be 1.000
- The slugging percentage (SLG) weights each type of hit (singles are weighted as 1, doubles x 2, triples x 3, home runs x 4). Then divide by the number of at bats. A perfect slugging percentage is 4.000.
- The on-base percentage (OBP) is the total number of all hits, walks and hit by pitch divided by the number of plate appearances.
- Remember you are performing the computation one line at a time. The awk program body is executed on each line it reads { }.

### Other Requirements:

- Comment your awk script to indicate what it does (don't forget to put your name in). Comments describing logic are important.
- Use good variable names, where appropriate
- Test your program with much more input data than my sample!
- When you have completed the assignment, post the .awk file for this assignment in Canvas
- Turn in a printout of your script to me, in class, on the due date.