Week 2: Assignment 3
Parse the Embedded System Output

[*Last Updated on:* ***11th April 2021, 23:00 Hrs***]

Aim

A program written by you gets the input from an embedded systems device (Joystick on a gamepad) through a serial port on your machine. The program generates output in the following format:

```
1,X!2,Y!3,Z!2.5,0!
```

where the `,` denotes a field separator and `!` denotes a record separator.

Write an AWK program `assignment3.awk` which takes as an input argument a file of the format specified above and generates the output on command line (*prints the output; not in a file, for the n-th time*) of this format:

```
Value   SensorNumber
1       X
2       Y
3       Z
2.5     0
```

Note: The columns are tab separated.

Given

Two files are provided to solve this assigment.

- Skeleton program file: `assignment3.awk`
- Sample TXT file: `assignment3_sample.txt`

Procedure

- Open the skeleton program file, `assignment3.sed` .
- To run and debug your solution, type the below command in Terminal:

```
awk -f assignment3.awk assignment3_sample.txt
```

This command will run the AWK script `assignment3.awk` with the input argument of provided TXT file.

- Here file name is passed as **an argument and not as an input stream**.
- Refer the **Expected Output** section below and debug your code to get the correct output.

Expected Output

- The provided sample TXT file, `assignment3_sample.txt` consists of random data received by an Embedded System.
- For example, the contents of this TXT file are as shown below:

```
10.2,T!435.12,U!94,G!0,F!255.0,P!21,L!
```

- The expected output of program `assigment3.awk` i.e., print the parsed output stating the Values received from each Sensor number as shown below:

```
Value   SensorNumber
10.2    T
435.12  U
94      G
0       F
255.0   P
21      L
```

Grading and Submission Instructions

- Navigate to the folder where the ***ey-mooc-grader-sfc*** application resides.
- To grade your solution, run the `check` command of the application as follows:

```
./ey-mooc-grader-sfc check -w 2 -a 3 Week_2/Assignment_3/assignment3.awk
```

- This will run your program `assignment3.awk` against random test cases and grade it. Marks and appropriate remarks will be provided as shown in Figure 1.
- Your program file `assignment3.awk`, marks scored and remarks will get uploaded to the MOOC portal.

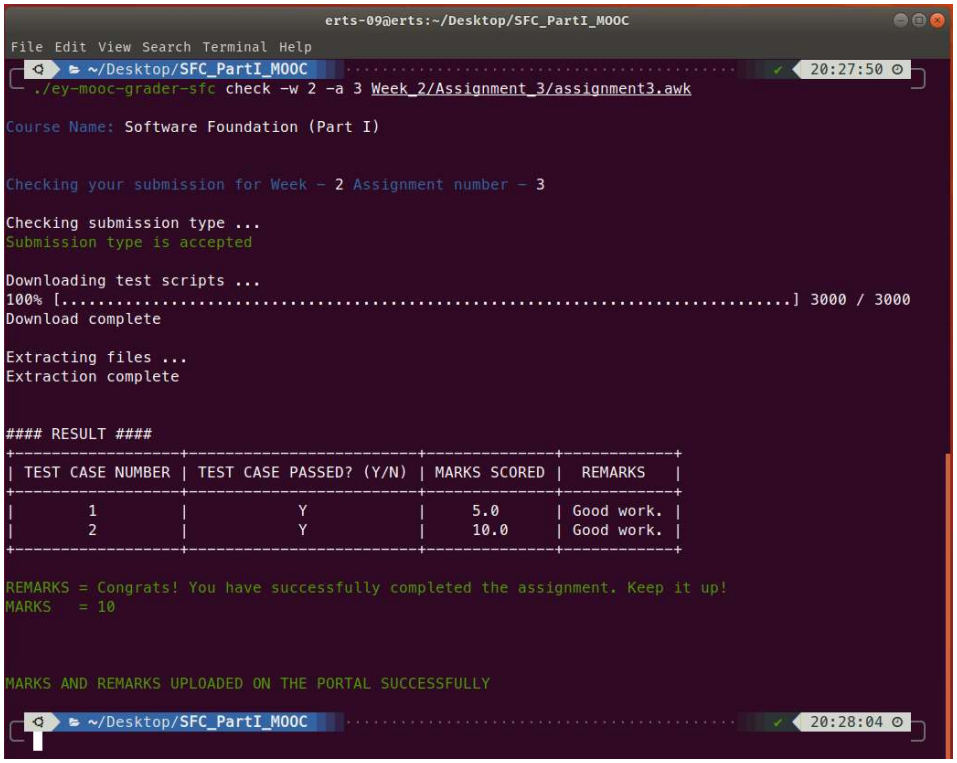

Figure 1: Output of running check command for Week 2 Assignment 3

- You can verify this by running the **`status`** command of the application as given below, refer Figure 2.

```
./ey-mooc-grader-sfc status -w 2 -a 3
```

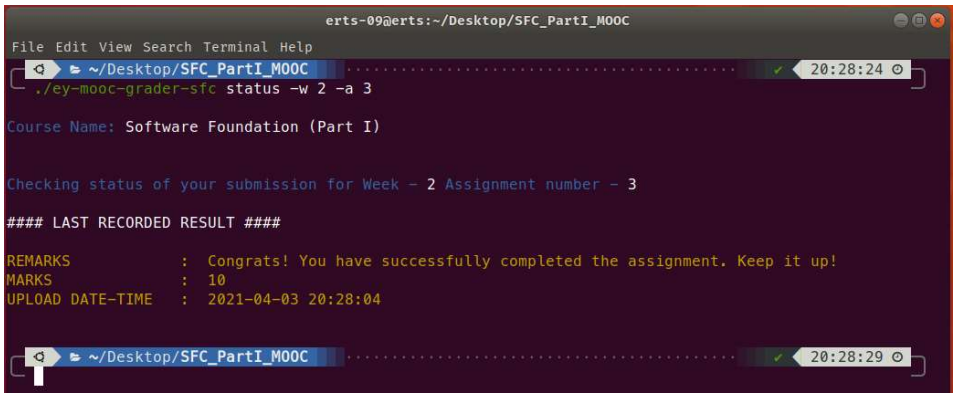

Figure 2: Output of running status command for Week 2 Assignment 3

References

- Nano Editor
  - How to use Nano Text Editor
  - Nano Editor Official Docs
- Vim Editor
  - Interactive Vim Tutorial
- AWK
  - Advanced Bash Scripting Guide

- AWK: Introduction and Tutorial
- Very Useful Command Line Utilities
- SED AWK Examples by Unix School

All The Best!