7SENG012W Practice Lab Test 1

Date:XXXXX **Time:** XXXX

Generate a Bash Schell script that will require a single positional parameter a data file.

Download the data file called data.txt to test your code

Note the only item that is not fixed is the number of students

The data file has the form of

Student_ID	**CWK1**	**CWK2**	**EXAM**
WEIGHTINGS	**27%**	**23%**	**50%**
W1234567	**45**	**56**	**64**
W1234568	**60**	**77**	**39**
W1234576	**34**	**25**	**15**

Your script should extract the data and headings from the file and then

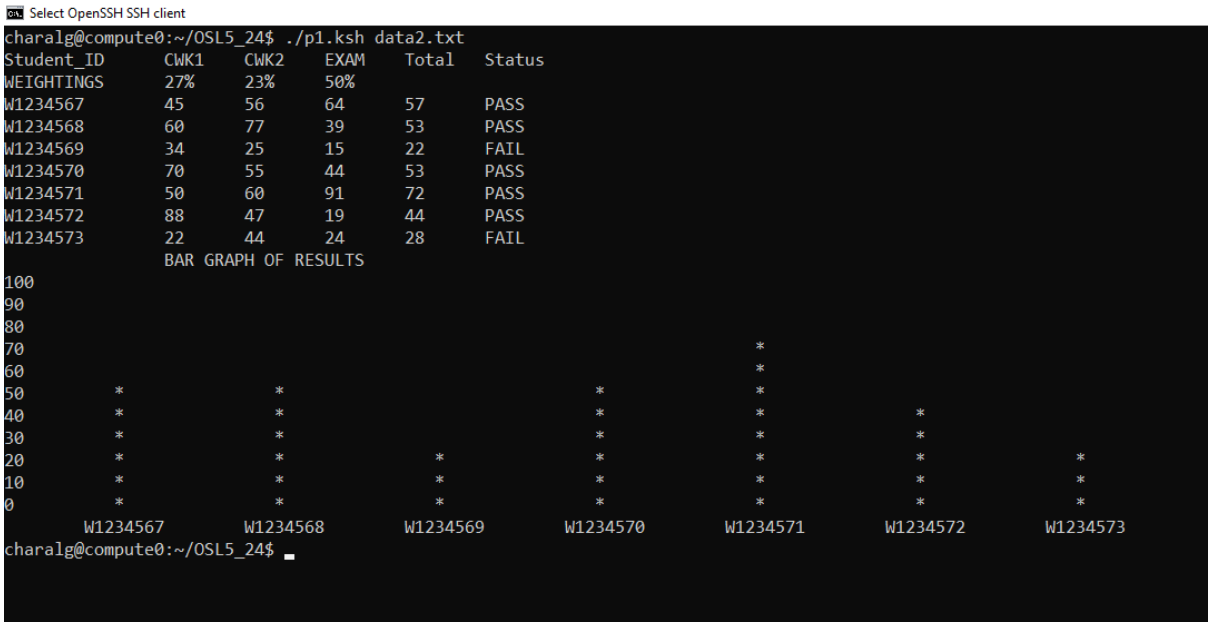
1. Calculate the final mark for each student based on the scores and the assessment weights
2. Determine if they PASS or FAIL based on them scoring >= 40% for their final mark
3. Display the headings to standard output including two new, namely Total and Status
   Where Total is the students final mark and Status if they have PASSED or FAILED
   You are copy the 1st line of the file and write to standard output along with the two new columns; so display
   Student_ID CWK1 CWK2 EXAM Total Status
4. You are to copy the 2nd line of the file and write to standard output. Displaying:
   WEIGHTINGS 27% 23% 50%
5. For each student print out their ID their individual marks then their calculated final mark and their status. For example display:

W1234567	45	56	64	57	PASS
W1234568	60	77	39	53	PASS
W1234569	34	25	15	22	FAIL

6. Extract from the file the student IDs and store

7. you are then to create a vertical histogram of the student's final mark; where on the left (y-axis) display the marks in multiples of 10 and use '*' for the column symbol. And for the x-axis display the student IDs.

   An example of the output based on the data file provided is:



INFORMATION

TIME ALLOWED: 90 minutes.

Weighting: 25%

- Name your work using your id with the extension **.sh** e.g. if your id is W1234567 then you are to create/name your program W1234567.sh
- You are to upload your bash source file on Blackboard in the Folder Assessments, using the Link in Lab_Test_Upload
- Please make sure that include in your file as a comment your ID and name
- You are only to use your text editor and the linux shell on compute0.wmin.ac.uk.

Marking Scheme

TASK	%mark
Invoke Bash shell	3
Testing for the correct number of positional parameters	5
Test for regular file	5
exit script if error in input with appropriate message	5
read content of file and store	5
display the 1st line including 2 new columns Total and Status	5
display the 2nd line in files	5
from file evaluate the number of students	5
extract the weightings for each assessment	5
using the extracted weighting calculate the final mark	5
evaluate if student has passed or failed	5
display for each student their ID; marks and the final mark and their status	5
Bar Graph	
display of y-axis scale from 0 to 100 in steps of 10	5
display correct hight of column of * symbol for each student	5
display x-axis the extracted values of the student IDs from the data file	5
General	
correct alignment & formatting of output	5
Block comments	5
line comments	5
Syntax**	12
	100

**Syntax mark calculation:

Syntax mark = (12 – n_errors*2) x (%completed)