CS252 Revision Assignment

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4th August, 2014

1   Introduction

In this document,we have to describe how the different phases of the assignment have been completed such that they together form a nice overall package which can be understood easily. The tools used along with the phases are listed in a table. The source of learning for most of these tools is [4].

2   Phase

2.1   Phase-1: Octave

The **Octave script** `phase1.m` generates the data of roll number and various subject marks randomly. A standard randperm function with the rand function si used for the purpose.The reference for bash can be obtained at [5]

2.2   Phase-2: Perl

The **Perl script** `phase2.pl` creates the necessary tables namely marks and names and inserts the data in the sql table.Perl was studied from [6]. The task involved are:

- Parse the data from phase1 that is fit to be inserted into SQL tables.

- Create the tables for marks and names using sql query through perl

- Read names.txt and insert the relevant data

For the above purpose , valuable imformation was obtained from [3] and [2]

Phase-3: MySQL

The **MySQL script** `phase3.sql` computes the total and grades using standard MYSQL database functions. The grades are calculated based on the formula specified by the assignment given in the class [4]

$$grade = \begin{cases} A* & \text{if } total \geq 95\% \\ A & \text{if } 85\% \leq total < 95\% \\ B & \text{if } 60\% \leq total < 80\% \\ C & \text{if } 45\% \leq total < 60\% \\ D & \text{if } 30\% \leq total < 45\% \\ F & \text{if } total < 30\% \end{cases}$$

Phase-4: Formatting (Perl)

The **Perl** script `phase3.pl` changes the format of the data so that the next phase for gnu plot becomes easy .The format of data for gnuplot is

Course number	A*	A	B	C	D	F

Phase-5: GnuPlot

The **GnuPlot** script `phase5.gnu` is rather standard. It produces the plot as shown in a figure. 1

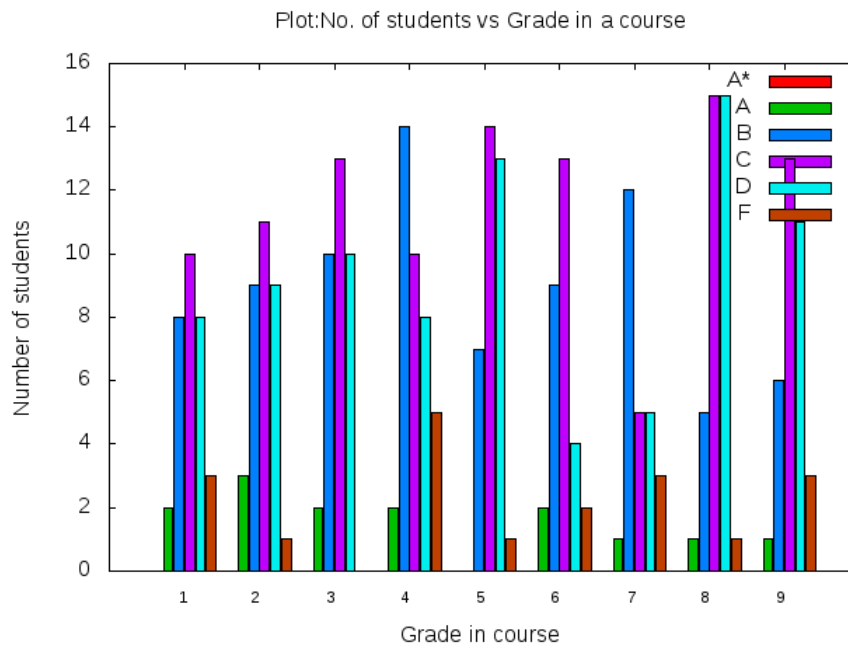| Course number	A*	A	B	C	D	F
1	1	3	8	10	8	6
2	0	1	6	13	11	2
3	0	2	8	13	6	6
4	0	4	6	12	11	3
5	0	2	6	13	9	1
6	0	2	8	12	12	6
7	0	2	7	10	7	6
8	1	1	8	8	4	7
9	0	2	7	11	6	2

Figure 1: gnuplot

Above data is only a test data

Phase-6: LaTeX

The `phase6.tex` is this file only and is, thus, a *s*elf-reference!

Phase-7: Bash

The knowledge of different **Bash** functions and options has made this script manageable.In the given phase we use bash tools including sort , cut , awk and read line to determine the ranks of various persons listed in the table above . Useful reference was obtained from [1] , [2],[3].

Phase-8: Automation (Bash)

The master file `phase8.sh` keeps everything thing toegther and runs them in an orderly manner.This is a single script that can be used to run all of the above tasks

3   Analysis

One can easily solve the assignment on time if one is dedicated enogh and the concepts are clear.

References

[1] Bash tutorials. `http://google.com/search?q=bash`.

[2] Google. `http://google.com`.

[3] Stack overflow. `http://stackoverflow.com`.

[4] Prof. Arnab Bhattacharya. Cs251 lectures, 2013.

[5] Dr. P.J.G. Long. Introduction to octave, 2005.

[6] un. Perl tutorials. `http://tutorialspoint.com/perl/`.