Automatic Grading System

Introduction

Automatic Grading System is the system indented to be used by educational institutions to give grades to their students. This will replace the old technique of using **MS Excel** to compute and assign grades to the students. This new Grading system will make the task of fellow faculty easier, so that they can focus on other stuffs rather than wasting time on calculating the grades.

Grading Algorithm

Grading are of two types:

1. Absolute: In this the grades are given according to the percentage secured by student.

```
Let percentage attained by student in particular subject is p
   if(p >= 0.9) then grade <- "A"
   else if(p >= 0.8 && p < 0.9) then grade <- "AB"
   else if(p >= 0.7 && p < 0.8) then grade <- "B"
   else if(p >= 0.6 && p < 0.7) then grade <- "BC"
   else if(p >= 0.5 && p < 0.6) then grade <- "C"
   else if(p >= 0.4 && p < 0.5) then grade <- "CD"
   else if(p >= 0.3 && p < 0.4) then grade <- "D"
   else  then grade <- "F"
```

2. Relative: In this grades are defined according to the mean(μ) and standard deviation(σ) of the Final Marks. Ex:

- Using Arithmetic Progression
- Finds all the terms that lies between (0, μ - fσ] *with the comman difference of f*σ and all the terms that lies between [*μ + $f\sigma$, 100) with the comman difference of f*σ. Note: Here f is the number that will be multiplied with σ which can vary from [0.5, 3] according to the instructor.
- Combines the results obtained from above and sort them.
- After sorting it will make ranges from 2 consecutive numbers from above result and then the grades will be given according to the range in which marks are occuring.

```
   if(marks >= $\mu$ + r*f*$\sigma$) then grade <- "A"
   ... so on
 Here $\mu$ + r*f*$\sigma$ is the last expression that is smaller than 100
```

How to Use

1. Go to **"Make Grade File"** tab.
2. Select at least one of Radio button(either Roll no. or Name or both) and then select from UI.
3. Now check radio button **"Check to original new Table"** to view original table that will be downloaded.
4. Hit Download button to download the table that you had just ceated(which can be seen in right side. File will be downloaded with the name **'Enter__the__Entries.csv'**.

Once filling out enteries in the above downloaded file.

5. Go to **"Build the Grades"** tab.
6. Choose the above file by clicking on Browse button.
7. Check what marks do you want to give to the absentees(maximum is 0).
8. Select wether you want to do the Absolute grading or Relative grading.
9. Enter input in 'maximum marks' if you have selected Absolute grading(by default it is 100, which is the standard one).
10. Once completed, Click on 'Yes' to view the table in which now two column will be added(Total marks and Grades respectively).
11. In the **Plot tab** the instructor can also change the grade of the student if they wants to.
12. Click on the **Summary** and **Bar Plot** tab to get the deep assessment of the students.
13. Once this is done, click on Download button to download the Graded File.

Note: All the plots are user friendly can be zoomed-in and zoomed-out and can also be downloaded.

Technology used

- R
- Shiny
- RMarkdown