COLLEGE OF ENGINEERING TRIVANDRUM

COMPUTER SCIENCE AND ENGINEERING

CS333

KTU RESULT ANALYSER

GROUP MEMBERS

MANEESH T.P

ABDUL KHADER P.V

PRANAV P

HISHAM ALI P

RAMSANKAR A

Staff In-charge:

VIPIN VASU A.V

Associate Professor

Department of Computer Science

Contents

1 Introduction

KTU publishes results as a single pdf document, assigned to a particular college, or a complete list with result of every KTU affiliated colleges in it. Generally, it is so difficult for a student to find out their result or for a faculty to find out performance of a particular batch. So it is the need of the hour to have a method that could analyse the pdf of the results and obtain branch-wise analysis, which will be highly beneficial for faculty to monitor performance of the batch. In this work, our team has developed an approach that could output result output in two formats- first is department-wise pass percent and related data of each department(for a particular batch) and the second, the total subject-wise pass percent and related data for each department.

2 Program Interface

This is a web based system. The user need to create an account in order to access it. The user can be a faculty member or a student.

The user first need to upload the result in pdf format that they obtain from KTU website. If they try to upload anything other than pdf, the system will automatically rejects it.

The result is analysed in two formats. First one is total result and the second, total subject result.

- If the user select total result- the result will be catagorised according to the departments, containing details including, students appeared, number of students passed, number of students failed, pass percent.
- If the user is selecting total subject result- the result will be catagorised according to subjects of a specific branch and batch.

3 Program Execution

Inputs to the program

- A pdf file containing the result of a batch, available in the KTU website.

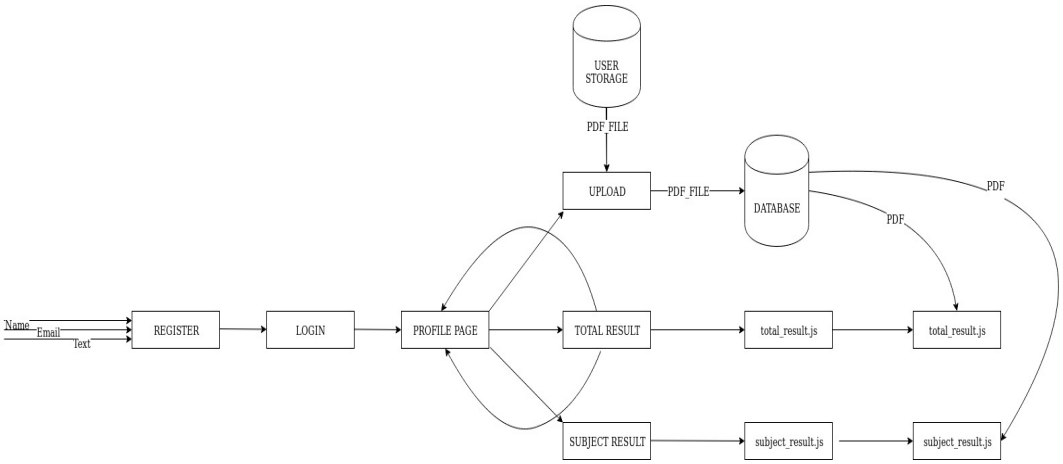
Output of the program

- Categorized result output according to department or subjects.

Functionality

- This system is most useful for the faculty, as it is so difficult to manually analyse and sort the result according to departments or subjects. Using this system, faculty can quickly analyse things such as pass percentage, number of students having supplementary, subject-wise. But, nothing stops the students from using this as well.

Work Flow Diagram



4 Software Requirements

- Front end -
  - HTML
  - CSS
  - Express.js
- Back end-
  - DataBase- MySql
  - Node.js
  - Python

5 Design

Web pages

- Home
- Contact Us
- Register
- Profile

Home

- Contains a form which ask the user to provide information for sign in.
- A button named 'Register' which will redirect to Register page.

Register

- Contains a form which ask the user to provide information for sign up.

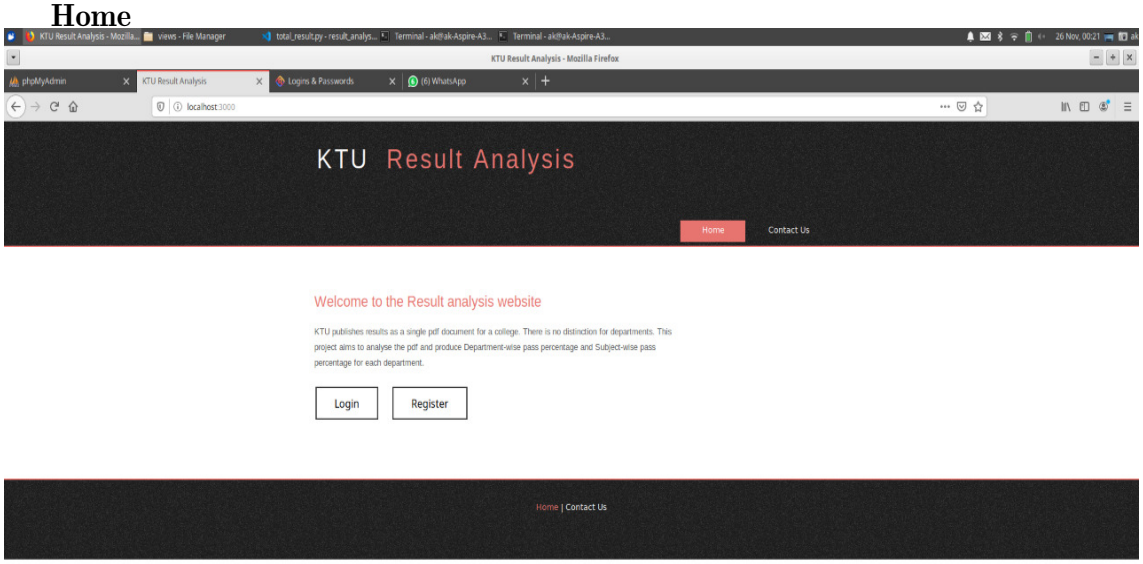
Profile

- An option to upload pdf.
- Two options to select the result output format(View total result, View total subject results).

Contact Us

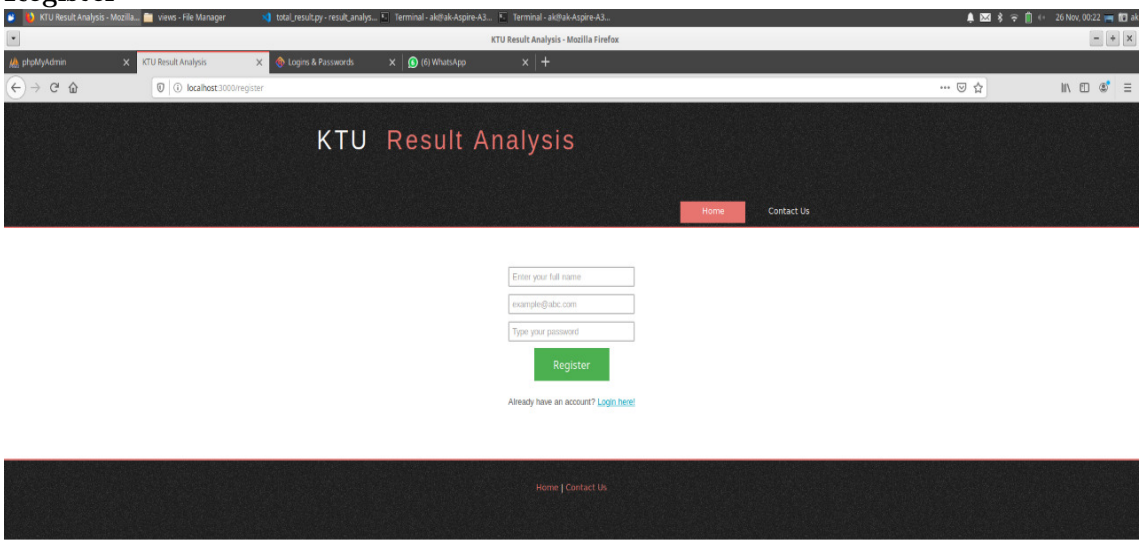
- Contains a form which ask the user to provide information for sign in.
- A button named 'Register' which will redirect to Register page.

Home

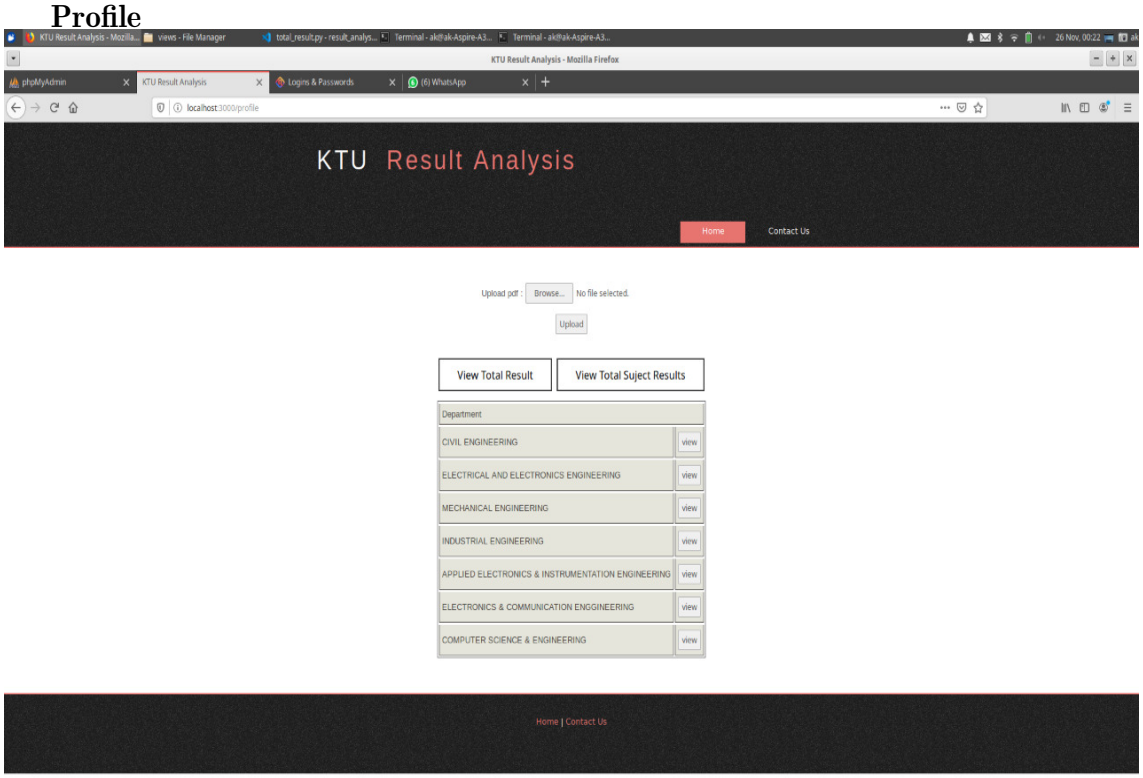


localhost:3000/contactus

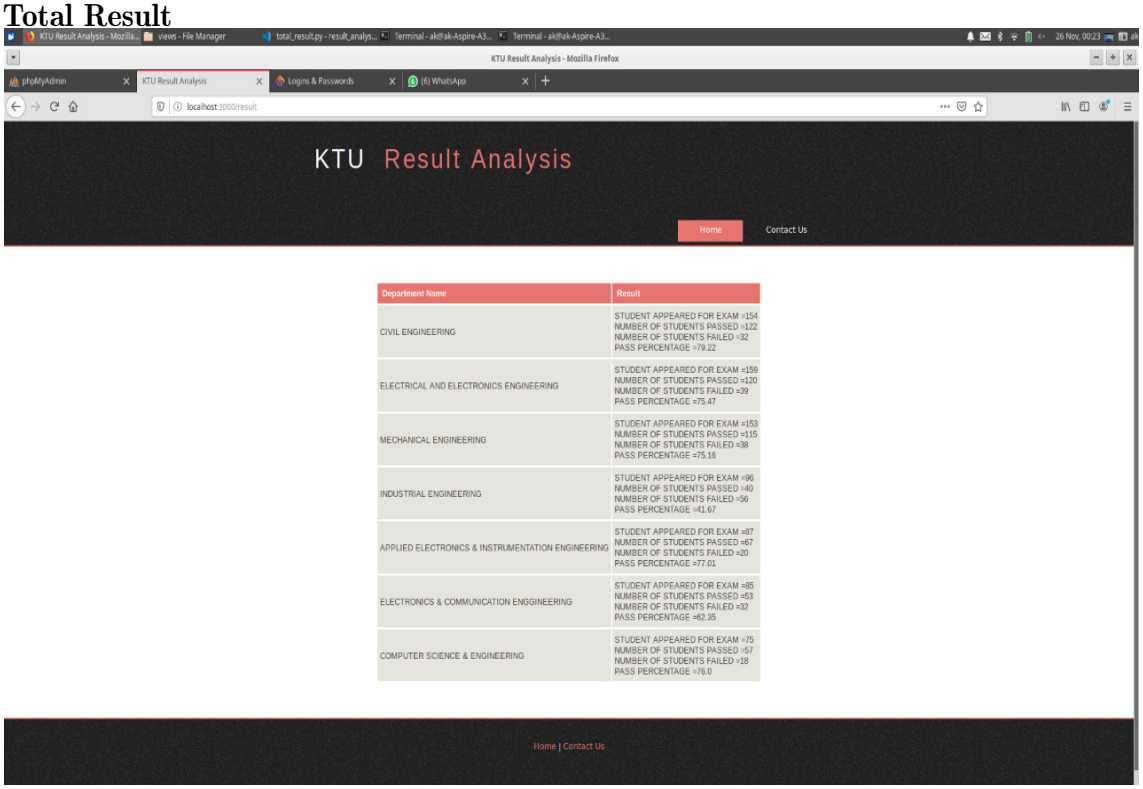
Register



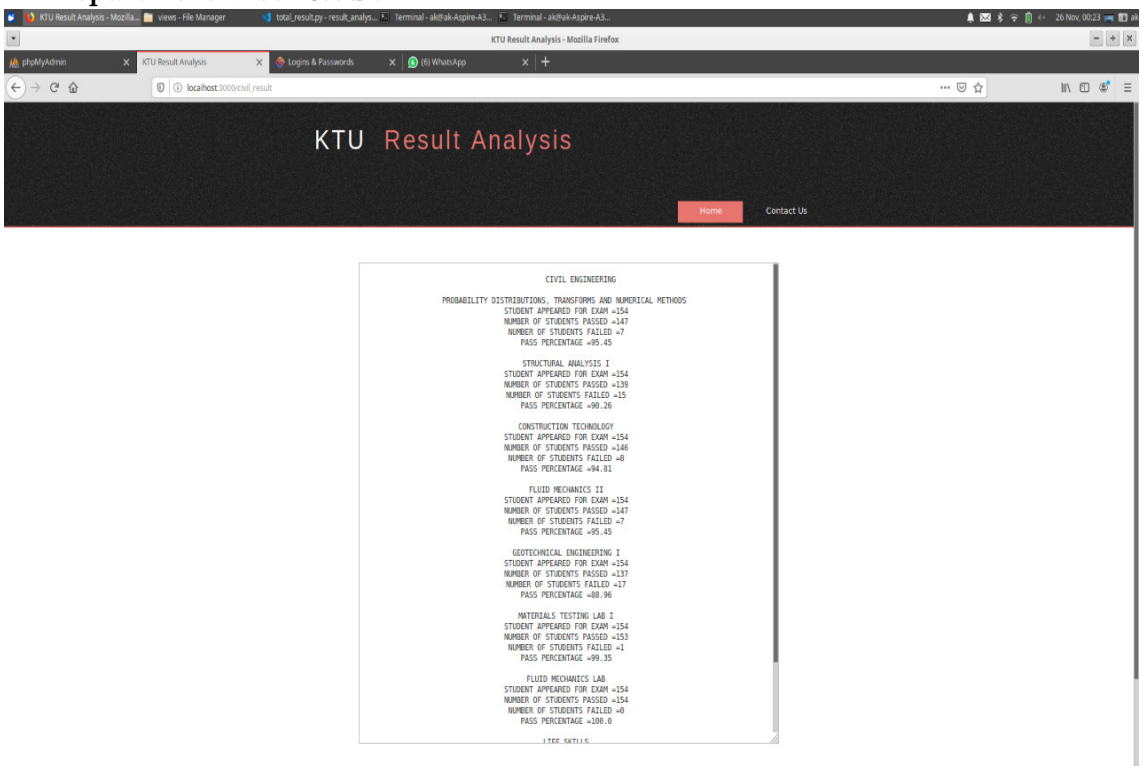
Profile



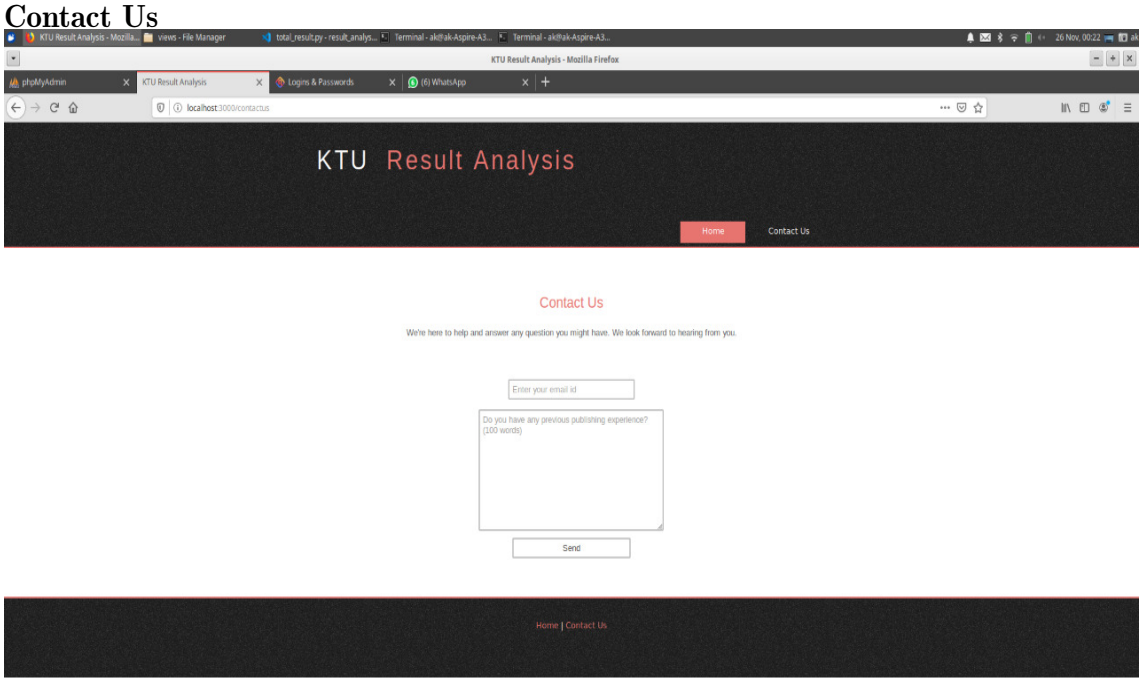
Total Result



Department-wise Result



Contact Us



6 Program Structure

1.Extracting data from PDF

- We use the Python tabula library to extract data from PDF.
- With using the to_numPy function, the PDF is converted to an array of N X 3.
- The first column contains the reg.no of students, second column contains the result.
- The third column will be null most of the time except for the first few rows which contain the subject name along with their subject codes.

2.Identifying Each Department

- Just before beginning of a new department, two columns will be null.
- Also the total number of students belonging to a department can be found out.

3.Department-wise calculations

- In a row, if at least one 'F' is found the student is identified to be failed.
- By calculating number of this type of rows, number of students failed can be calculated, so is with pass percent.

4.Subject-wise calculations

- Each subject is identified according to their subject code.
- Occurrence of the particular subject code is identified and the grade inside the parentheses is checked. If the grade is 'F', it is identified as failed.
- So, pass percent can be calculated.

Source code of the project is given below, click Here !!

7 Difficulties encountered

- For subject-wise result calculations, the higher number of different subject codes make the program lengthier. So we were forced to restrict our project to a single semester.
- KTU provides the results PDF in a particular format or orientation. Results that are not in this format cannot be analysed.

8 Improvements and extensions

- The project can be extended for including more number of subjects and departments.
- Also the project can be improved to accepting different formats orientations of result PDF.
- Analysis can be extended from just differentiating pass and fail grades to further categorizing as O, A, B etc.
- Now we are just displaying the analysis online. An extension can be made which will allow the user to download a copy of the analysed result.

9 Conclusion

In this project, we implemented a result analyser for analysing the PDF result document provided by the university, using the best of our time and knowledge. We implemented a web based system using Python, HTML, CSS and nodeJS. The implemented system is a prototype which is open for future extensions and improvements.