



# **GraphicEra**

(Deemed to be University)

Accredited by NAAC with Grade A

# **MINI PROJECT REPORT**

**PROJECT: RESUME SCREENING  
USING PYTHON**

**NAME : RIDHANSHU JASROTIA**

**SECTION: CE-CORE**

**CLASS ROLLNO.: 31**

**UNIVERSITY ROLLNO.: 2017359**

## DECLARATION

I, **RIDHANSHU JASROTIA** student of B-tech, **Semester 4th**, Department of Computer Science and Engineering, **Graphic Era Deemed To Be University, Dehradun**, declare that the technical project work entitled **“RESUME SCREENING USING PYTHON”** has been carried out by me and submitted in partial fulfillment of the course requirements for the award of degree in B-tech of **Graphic Era Deemed To Be University** during the academic year **2021-2022**. The matter embodied in this synopsis has not been submitted to any other university or institution for the award of any other degree or diploma.

Date: 14/07/22

**RIDHANSHU JASROTIA**



**Graphic Era**  
(Deemed to be University)  
Accredited by NAAC with Grade A

## CERTIFICATE

This is to certify that the project report entitled **“RESUME SCREENING USING PYTHON”** is a Bonafede project work carried out by Ridhanshu Jasrotia, roll no-2017359, in partial fulfillment of the award of the degree of B-tech of Graphic Era Deemed University, Dehradun during the academic year 2021-2022. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated. The project has been approved as it satisfies the academic requirements associated with the degree mentioned.

**Ms. Meenakshi Maindola, ( CSE DEPT. )**

## **PROBLEM DEFINITION:**

Due to a large number of applications and resumes sent in response to job listings, talent acquisition experts find manual resume screening processes to be tiresome, inefficient, and time-consuming. In order to speed hiring procedures, standardized automated screening methods are required to separate qualified candidates from unqualified ones based on their background, education, and professional experience more quickly, more effectively, and with more accurate results.

## **OBJECTIVE:**

The main objective of my project is to screen the selected resume and to display the best suitable job/profile for the candidate. The project that I have built works for both candidate as well as the recruiter, as it tells the candidate the best suitable job for him/her and helps the recruiter to find the best candidate for the job.

## **TOOLS USED:**

Visual Studio Code

## **LANGUAGE USED:**

Python

## **LIBRARIES USED:**

- ☛ matplotlib
- ☛ re (Regular Expression)
- ☛ tkinter
- ☛ pandas
- ☛ string
- ☛ PyPDF2

## **INTRODUCTION:**

Writing a CV is a difficult effort, especially when choosing the correct keywords. Many people spend many hours crafting and structuring the ideal resume in the hopes that it will be read by a talent acquisition specialist and, ultimately, help them land a job interview. Unfortunately, almost 75% of uploaded resumes are never even examined by a human eye. Thus Artificial Intelligence can be used in Screening Programs. Using text mining, natural language processing, and artificial intelligence, it is possible to create a software (such as applicant tracking systems) that can objectively and impartially screen thousands of resumes in a short period of time while determining which candidates are the best fits for a given position based on predetermined thresholds, criteria, or scores.

In order to select which resumes should be further studied by recruiters, these programs typically seek for certain keywords, sort resumes, and rate them. The resume screening process used by each organization may be different, but it is important for applicants to understand how it operates in order to better choose their keyword choices in accordance with the positions they are applying for.

## **What is Resume Screening?**

The practice of analyzing a resume to ascertain a candidate's suitability for the post is known as resume screening. Education, experience, talents, and any other pertinent information that may be on the CV are used to determine whether or not a candidate is qualified.

## **The Value of a Specified Resume Screening Procedure:**

The screening of resumes is an essential yet difficult step in the hiring process. It still takes the most time to recruit, even with automated processes. An average recruiter will invest 23 hours in the hiring process. Having a clear procedure will:

- You'll save time
- Improve the procedure's effectiveness and accuracy.
- Quickly identify unqualified candidates
- It will lead to a shortlist of individuals to interview that are in line with the qualifications you're searching for.

This procedure will help you accomplish your objective: to employ the most qualified and appropriate candidate for the position.

## **Methods for screening resumes:**

How are resumes evaluated? Many HR professionals and recruiters have posted this query. Before diving into specific procedures, it's critical to comprehend the two methods of resume screening:

- Manual
- Automated.

Both are efficient in various ways. Which to utilize depends on the conditions of

the individual and the firm. Overall, a lot of experts concur that manual screening is preferable for higher positions, whereas automated screening is better for lower positions. For instance, K&N and Applebee's employ automated hiring procedures for hourly roles but manual screening for managers or corporate staff.

## **Implementation:**

The implementation part is divided into six steps:

- ❖ Opening, reading, and text extraction from PDF files.
- ❖ Cleaning the text.
- ❖ key terms by area set up in a dictionary.
- ❖ Calculating scores by area.
- ❖ Data frame sorting to create final scores.
- ❖ Pie chart creation

**\*\*Disclaimer\*\***: The key terms included in each section of this dictionary were discovered from a study of the most frequently used key terms in different job postings. The hiring manager's requirements can be added to or removed from this vocabulary.

## **About the libraries:**

### **☛ MATPLOTLIB :**

For Python and its numerical extension NumPy, there is a cross-platform module called Matplotlib that allows for data visualization and graphical plotting. As a result, it provides MATLAB with a strong open-source substitute. Plots can be included into GUI programs using the APIs (Application Programming Interfaces) of matplotlib.

### **☛ TKINTER:**

Tkinter is the standard GUI library for Python. The combination of Python and Tkinter makes it quick and simple to develop GUI apps. The Tk GUI toolkit applications have a strong object-oriented interface provided by Tkinter.

### **☛ PANDAS:**

Pandas is a library used by matplotlib mainly for data manipulation and analysis. Pandas provide an in-memory 2D data table object called a Dataframe. Unlike numpy, pandas is not a required dependency of matplotlib.

### **☛ STRING:**

In order to process standard Python strings, the string module offers a number of functions. The majority of the functions in the string module are just wrapper functions that call the corresponding string method. A variety of functions in the module allow you to convert strings into other kinds in addition to the string module's ability to manipulate strings.

### **☛ PYPDF2:**

PyPDF2 is a pure-python PDF library that can split, merge, crop, and otherwise alter the pages of PDF files. It is free and open-source. To PDF files, it may also add personalised information, viewing choices, and passwords. PyPDF2 has the ability to extract text and metadata from PDF files.

## ☛ RE (REGULAR EXPRESSION):

The functions in this module allow you to determine whether a given text fits a given regular expression, which is known as a regular expression (or RE) (or if a given regular expression matches a particular string, which comes down to the same thing). Concatenating regular expressions can create new regular expressions.

## DICTIONARY USED:

```
terms = {
    'Python Deveplor':['python','web frameworks','flask','django','oops','data structures',
        'object relational mappers','orm','sql','scikit learn','matplotlib',
        'numpy','artificial intelligence','ai','machine learning','ml',
        'deep learning','natural language processing','nlp','make','coding',
        'programming','jinja 2','svn','mercurial','git','big data'],

    'Full Stack Developer':['html','css','javascript','data structures','python',
        'perl','php','node.js','react','angular','json','dom','git','gitHub',
        'ruby','java','apache','web architecture','xml','sql','coding',
        'programming','mysql','nosql','ui & ux','npm','jquery','ajax'],

    'Java Deveplor':['java','object-oriented programming','data structures',
        'oops','abstraction','apache','sonatype','java beans',
        'java server pages','programming','servlets','java ee','bazel','nexus',
        'cmake','gradle','testng','selenium','coding','big data','spring framework',
        'spring','kotlin','jenkins','maven'],

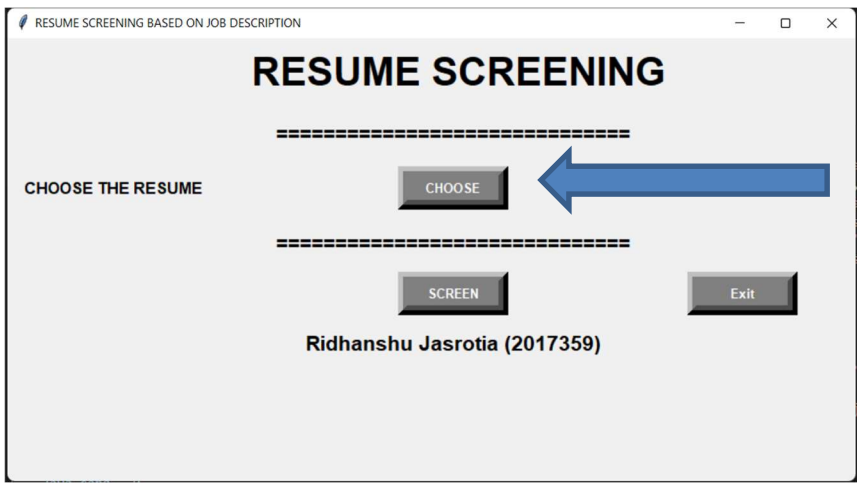
    'Data analytics':['analytics','api','aws','big data','jboss','jetty','clustering',
        'coding','data','database','data mining','data science','deep learning','hadoop',
        'hypothesis test','machine learning','modeling','nosql','nlp',
        'predictive','python','r','programming','sql','tableau','text mining',
        'visualuzation'],

    'Android Developer':['android development','android','html','css','c++','java',
        'kotlin','android studio','xml','sql','android testing','coding','testing',
        'android software development kit','sdk','git','ui','ux','user interface',
        'eclipse','xamarin','programming','jsp','oracle','scrum','gradle','json']
}
```

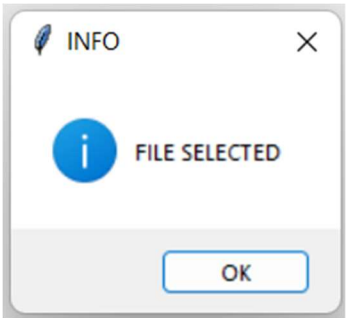


# PRACTICAL WORKING:

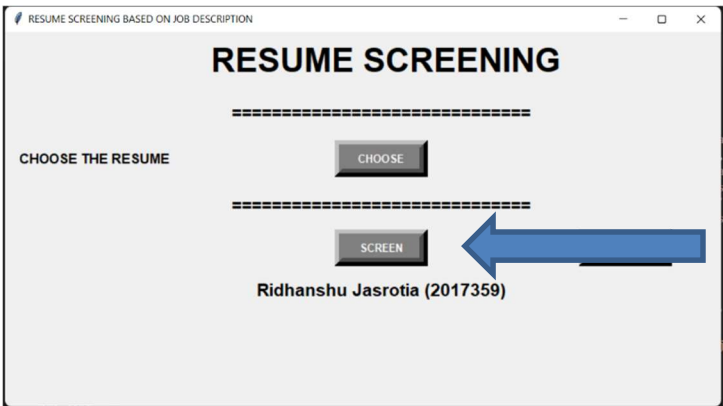
Step 1:



Choose the  
resume

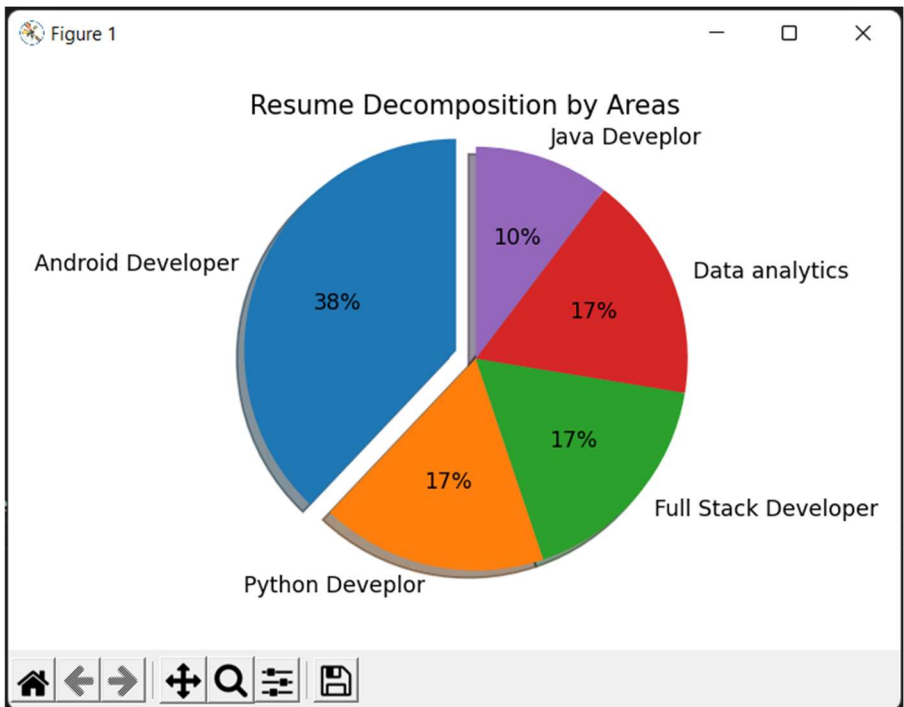


Step 2:



Press the screen button

Final output:



	score
Android Developer	11
Python Deveplor	5
Full Stack Developer	5
Data analytics	5
Java Deveplor	3

## **CONCLUSION:**

The main purpose of this project was to screen the resume based on some keywords (job description). This system will work for both, candidates applying for a job and the recruiter who wants to select the deserving candidate. After selecting the resume, when the screen button is pressed, the contents of the resume (must be pdf) are extracted and stored in a string after which its validation is done. After the validation, the words in the dictionary (containing keywords of different job specifications) are compared to the contents of the string, and if a word appears, we increase the count of the specific area. The area with the largest count value will be the best suitable job for the candidate based on his/her resume, also recruiter can use this to select the candidate. Resume screening is very much helpful for the recruiter as it is very hard to see each resume manually, therefore it helps them to screen the candidate faster.