



Job recommendation system

Phetcharat Phormchart and Sasivimon Sukaphat
Bachelor of Science Program in Computer Science

01 ABSTRACT

This research aims to develop a career recommendation system based on user experience and preferences. The proposed system uses the user's personal information or user's interest to search for more accurate job positions.

This system also applies the search algorithm and confusion matrix in the searching processes and focuses on functionality, simplicity, and speed. It will also allow users to search for available job positions from job descriptions, office locations, job categories. We also provide posting functions for users to post their profile and curriculum vitae to be reviewed by interested employers. Information that is required in the searching process is personal information, education record, working experience, and other skills.

From the experimental results, the average accuracy of both searching methods is at 80.61% if the user provides complete searching criteria, which is similar to JobsDB.com.

Related Theories

Model View Controller

Model View Controller (MVC) is a Software design pattern.

It consists of three main components which are model, view and controller. Each component handles specific development aspects. MVC also used to control changes in software development prevent one part to affect another.

Confusion Matrix

Confusion matrix is a table used in predictive analytics process. Confusion matrix consists of two rows and two columns. Each row presents the instances in a predicted class, while each column presents the instances in an actual class (or vice versa). We applied confusion matrix to check categorizes accuracy and possible error types that will checking through precision, recall and F1-Score. It can represent to a table that is often used to describe the performance of a classification model on a set of test data for which the true values are known.

Conclusion

From the experiment results, we found that our system which applied a confusion matrix in the searching process can provide accurate results. The correctness of the job search depends on the number of criteria specified in the search. Therefore, users should provide as much information as possible to find the position to get the results that are most relevant to their needs.

Bibliography

[1] Tutorialspoint, **MVC Framework – Introduction**. Retrieved 22, 2020 from https://www.tutorialspoint.com/mvc_framework/mvc_framework_introduction.html

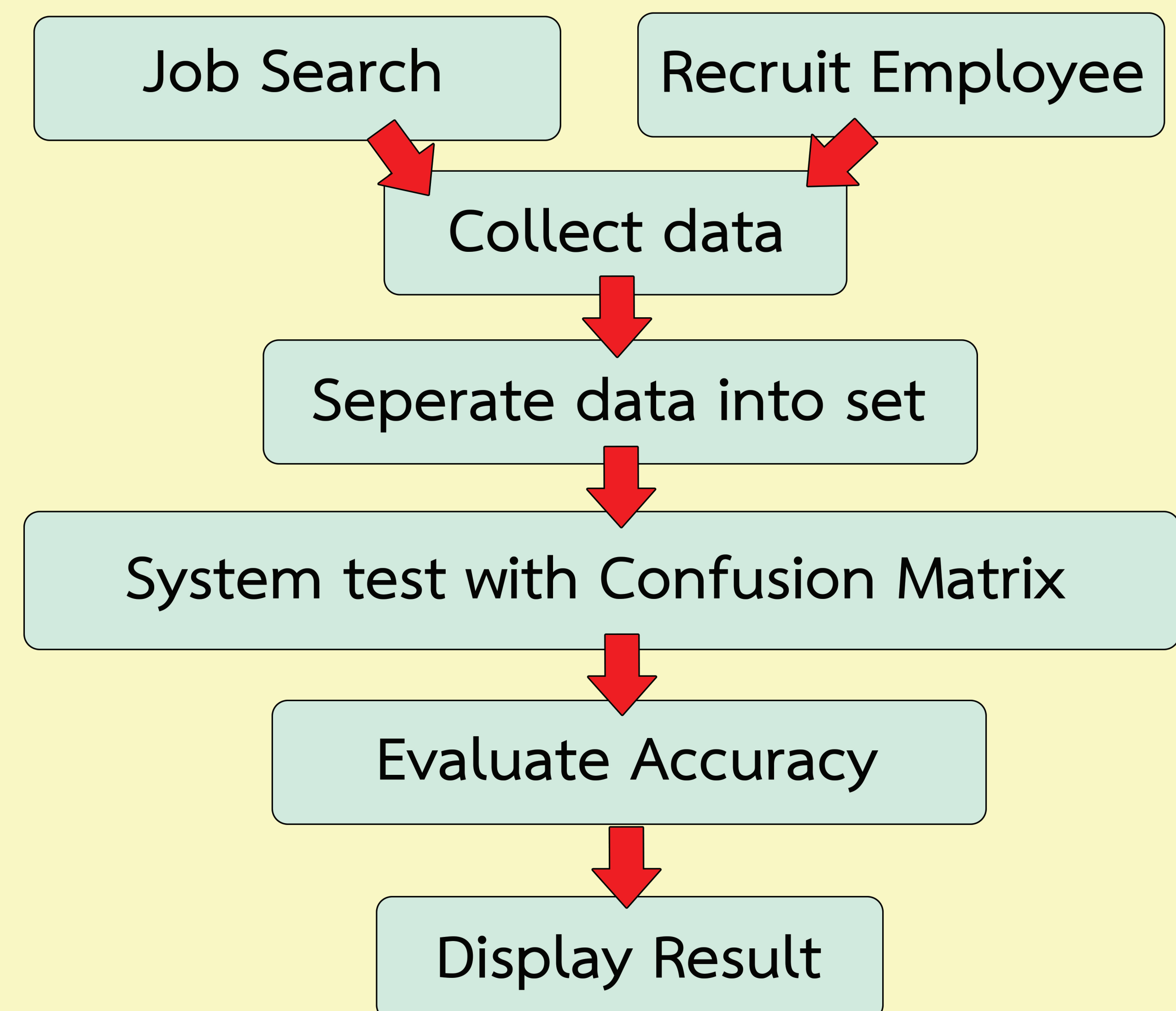
[2] Sarang Narkhede. 2018. **Understanding Confusion Matrix**. Retrieved January 18, 2021, from <https://towardsdatascience.com/understanding-confusion-matrix-a9ad42dcfd62>

[3] Powers, David M. W. 2011. Evaluation: From Precision, Recall and F-Measure to ROC, Informedness, Markedness & Correlation. In **Journal of Machine Learning Technologies**. pp. 37-63

02

03 Procedure

Job recommendation system is to help for appropriate job search for user and promising employee recruiting for employers



04

Searching Function

Using keyword will lead to more precise search result. But if user doesn't input any keyword, the result will display all information from the system.

System Testing Result

Matching Function

Number of Matched Criteria	Precision	Recall	F1-Score	Accuracy
None	-	-	-	-
1	0.1666	0.25	0.125	0.25
2	0.3888	0.3333	0.5	0.5
3	0.6666	0.625	0.75	0.75
4	1	1	1	1

From the table. The search outcome will be higher when there are more than 4 criteria that match each other.

05

06