**Advanced Results Retrieval System.**

***An industry oriented mini project report submitted***

***In partial fulfillment of the requirement for the award of the degree of***

**BACHELOR OF TECHNOLOGY**

in

**COMPUTER SCIENCE AND ENGINEERING**

*by*

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VISAKHAPATNAM – 530048

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**CERTIFICATE**

This is to certify that the project work entitled “**ADVANCED RESULTS RETRIEVAL SYSTEM**” being submitted D. NARENDRA REDDY (15131A0553), CH.SAI MANIROOP(15131A0549), D.MANOJ KUMAR(15131A0550), CH.NARENDRA (15131A0537) in partial fulfillment of the requirement the award of the degree of “Bachelor of technology” in Computer Science and Engineering is a record of bonafide work done by them under my supervision during the academic year 2016.

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**DECLARATION**

We hereby declare that this is dissertation of our own work except where specifically ask to the contrary and it is not substantially the same as any dissertation which has been submitted to any university.

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Advanced Results Retrieval System for GVP site.

Abstract

**ABSTRACT**

Viewing marks from a website has been the hardest part until now because of the tangled URLs. In the existing system, we may get results only for particular semester. In this proposed system, we can get results of all the semesters at once that are completed until now. This results retrieval application uses advanced web scraping techniques to extract the results from college website URLs that have been released till now. This system analyses the student ID say roll no. and displays the results based on his preferences like SGPA or CGPA. Moreover, this system facilitates the outsiders to conveniently view the results of any student and it is used for the personal assessment based on the obtained result. In this project, Graphical User interface will be provided using Web App to ensure the best experience for user.

Index

**INDEX**

pageno

1. ABOUT THE PROJECT…………………………………………...... 12

2. PROJECT SCOPE………………………………………………… … 13

2.1 EXISTING SYSTEM………………………………………….. 14

2.2 PROPOSED SYSTEM………………………………………… 14

3. FEASIBILTY REPORT……………………………………………… 15

3.1 TECHNICAL DESCRIPTION………………………………… 16

3.2 NUMBER OF MODULES……………………………………… 17

3.3 REQUIRED HARDWARE……………………………………… 18

3.4 REQUIRED SOFTWARE……………………………………… 18

3.5 FEASIBILITY TYPES………………………………………… 19

4. ANALYSIS…………………………………………………………… 20

4.1 SRS DOCUMENT……………………………………………… 21

4.2 SCOPE OF DEVELOPMENT………………………………… 22

4.3 ABOUT ANDROID…………………………………………… 23

4.4 EXTENSIBLE MARK UP LANGUAGE ……………………… 28

4.5 CONNECTIVITY ……………………………………………… 32

5. DESIGN…………………………………………………………… 34

5.1 UML SPECIFICATIONS…………………………………………… 37

5.2 SEQUENCE DIAGRAM…………………………………………… 38

5.3 CLASS DIAGRAM………………………………………………… 39

5.4 ACTIVITY DIAGRAM……………………………………………. 40

6. CODING……………………………………………………………… 41

6.1 SAMPLE CODE…………………………………………………….. 42

6.2 OUTPUT SCREENS………………………………………………… 60

7. TESTING………………………………………………………………. 63

7.1 LEVELS OF TESTING……………………………………………… 65

8. CONCLUSION………………………………………………………… 66

9. BIBLIOGRAPHY ……………………………………………………… 68

9.1 REFERENCES……………………………………………………… 69

9.2 LIST OF WEBSITES………………………………………………… 69

About The Project

1. **ABOUT THE PROJECT**

In the contemporary world, education plays a major role. By which one believes that with education we can do anything we want. So, there are many private and public institutions for educating students. In this education system, the skill of any individual is assessed based on his/her performance in various aspects. In this digital era, all the results and updates within the institution are maintained through their official websites. With the help of college website, all the students and Faculty will be able to know each and every updates and news regarding any semester results, new time tables. The teachers, parents and students can know the placements of the students in any college through their official website.

But in some college websites like GVPCE, the retrieval of semesters results is not so good. Anyway students will be able to find their results of latest semester at ease. As the parents are not so aware of all the details of their wards current study, it becomes quite difficult to know their wards results. The difficulty here is we can get the results only for particular semester. If we want to know or check the previous results of any student it is the hardest part because of the tangled urls and they need to remember the dates of the commencement of results. In order to avoid these type of problems on behalf of students, parents and faculty, we ourselves have learnt some advance concepts of python programming language and devised a web app which gives results of all the semesters at once that are completed until now. The so called Advanced results retrieval system facilitates anyone to conveniently view the results of any student and it is used for the personal assessment based on the obtained result. This system analyses the student ID say roll no. and displays the results based on his preferences like SGPA or CGPA. This webapp is dynamic and in such a way that there is no supporting software required in order to store new and fresh links from the college website. Soon after a new link arrives in the website this webapp grabs them. This web app is done without the college database access. So, we can make use of this webapp for different colleges.

Project Scope

**2. PROJECT SCOPE**

**2.1 Existing System :**

CF based methods can be further classified into two classes: memory based CF methods [6] and model based CF methods Memory based CF contains two popular methods, user based CF [11] and item based CF [12], depending on whether the neighbours are derived by identifying similar users or items. Due to its simplicity and reasonably accurate recommendations, memory based CF has been widely used in industry. However, it suffers from several problems, including data sparsity [13], cold start [14] and data correlation [15], where each user express preference to only a small subset of the available items, and users tend to rate similar items closely

**2.2.Problems in Existing system :**

* . the similarities between users or items cannot be accurately measured by the existing similarity measurement methods, such as Cosine and Pearson Correlation, which will result in inaccurate predictions

**Proposed System:-**

To alleviate this problem, many model based methods are proposed, such as Bayesian belief nets CF models , clustering CF models , Markov decision process based CF models [9] and latent semantic CF models .

In addition, matrix factorization, such as [16], aims to alleviate this problem by reducing the dimensions of user-item rating matrix, then the implicit relationships between items (even those have not been co-rated by one user) can be captured..

Feasibility Report

**3. Feasibility Report**

**3.1 Technical Description:**

**A Python program that can be deployed as a webapp using the Flask API.**

**3.2 REQUIRED HARDWARE:**

Minimum Hardware requirements

* Processor (CPU : Intel core i3(1.8 Ghz)or more/AMD A8(1.9 Ghz).
* Memory(RAM) : Min 1GB
* Storage(Hard disk) : Min 500GB
* Active Wifi 802.11 ac/b/g/n or Ethernet Connection.

**3.3 REQUIRED SOFTWARE:**

Minimum Software requirements:

* Operating system : Ubuntu 14.04 or above / windows 7 and above
* Language : Python-2.7
* IDE : PyCharm,Atom.
* DEPENDENCIES : Beautiful Soup, mechanize, requests, pandas, numpy etc.,
* BROWSER : Mozilla Firefox/Microsoft Edge/Google Chrome.
* WEB FRAMEWORK : Flask using Python.

**3.4 FEASIBILITY TYPES:**

**Technical feasibility:**

The technical issue usually raised during the feasibility stage of the investigation includes the following:

* Does the necessary technology exist to do what is suggested?
* Do the proposed equipment’s have the technical capacity to hold the data required to use the new system?
* Will the proposed system provide adequate response to inquiries, regardless of the number or location of users?
* Can the system be upgraded if developed?
* Are there technical guarantees of accuracy, reliability, ease of access and data security?

YES, proposed system is cost efficient and time efficient once implemented on a particular type of data it can be reused many times.

**Financial Feasibility:**

The system as a whole sees a very highly integrated time saving construct and is compatible with any device through web. The application can be later deployed as a website which can be accessible throughout the world by investing some money. Not only students, every individual will be above to access this webapp through the launched website.

Analysis

Report

**4. ANALYSIS Report**

**4.1 SRS DOCUMENT**

**Intended Audience and Reading Suggestions**

The document is prepared keeping is view of the academic constructs of my Bachelor’s Degree from university as partial fulfillment of my academic purpose the document specifies the general procedure that that has been followed by me, while the system was studied and developed. The general document was provided by the industry as a reference guide to understand my responsibilities in developing the system, with respect to the requirements that have been pin pointed to get the exact structure of the system as stated by the actual client.

The system as stated by my project leader the actual standards of the specification were desired by conducting a series of interviews and questionnaires. The collected information was organized to form the specification document and then was modeled to suite the standards of the system as intended.

**Document Conventions:**

The overall documents for this project use the recognized modeling standards at the software industries level.

* + The Physical dispense, which state the overall data search for the relational key whereas a transaction is implemented on the wear entities.
  + Unified modeling language concepts to give a generalized blue print for the overall system.
  + The standards of flow charts at the required states that are the functionality of the operations need more concentration.

**4.2 SCOPE OF DEVELOPMENT**

**Future scope:**

• In the near future, it will be installed in Apache Server and so it will be published in internet.

• Datasets will be updated continuously and it will make online actual rating predictions to the users whose habits are changing day by day. As a result, it can be sensitively satisfying current user tastes.

• Web services in particular suffer from producing recommendations of millions of items to millions of users. The time and computational power can even limit the performance of the best hybrid systems. For larger dataset, we can work on scalability problems of recommendation systems.

• The Prediction approach can also be tried in different datasets to test harmony performance of system scalability problems of recommendation systems.

**4.4 PYTHON**

* By using python, we can develop the project specific part is “User Based Collaborative Filtering”.
* Own load the dataset [here](http://files.grouplens.org/datasets/movielens/ml-100k.zip).
* import numpy as np
* import pandas as pd
* You read in the u.data file, which contains the full dataset. You can read a brief description of the dataset [here](http://files.grouplens.org/datasets/movielens/ml-100k-README.txt).
* header = ['user\_id', 'item\_id', 'rating', 'timestamp']
* df = pd.read\_csv('ml-100k/u.data', sep='\t', names=header)
* Get a sneak peek of the first two rows in the dataset. Next, let's count the number of unique users and movies.
* n\_users = df.user\_id.unique().shape[0]
* n\_items = df.item\_id.unique().shape[0]
* print 'Number of users = ' + str(n\_users) + ' | Number of movies = ' + str(n\_items)
* Number of users = 943 | Number of movies = 1682
* You can use the [scikit-learn](http://scikit-learn.org/stable/) library to split the dataset into testing and training. [Cross\_validation.train\_test\_split](http://scikit-learn.org/stable/modules/generated/sklearn.cross_validation.train_test_split.html) shuffles and splits the data into two datasets according to the percentage of test examples (test\_size), which in this case is 0.25.
* from sklearn import cross\_validation as cv
* train\_data, test\_data = cv.train\_test\_split(df, test\_size=0.25)

#### 4.5 CONNECTIVITY

* Its going to help the people to identify the object with seeing the image. It should be a revolution to the people who are blind.
* The project is entirely based on “Trust Collaborative system between user and System”.
* The user want to trust the machine is telling Truth.
* Trust in RS is defined as the correlation between similar preference toward the items that are commonly rated or liked by two users. Trust improves RS by combining similarity and trust between users.
* That is, the way neighbors are selected is modified by introducing trust in order to develop new relationship between users so that it can increase connectivity and alleviate the challenges of data sparsity and cold start associated with traditional collaborative filtering techniques
* Different trust metrics are used in RS to measure and calculate the value between users in a network.
* These metrics are of two types, local and global trust metrics.

Design

Document

**5. Design Document**

**5.1 Unified Modeling Language Specifications**

**User Model View:** The UML user model view encompasses the models which define a solution to a problem as understood by the client or stakeholders. This view is often also referred to as the Use Case or scenario view. The main UML model encompassed by this view is the:

**Structural model view:**  Capture static aspects or structure of a system. Structural Diagrams include: Component Diagrams, Object Diagrams, Class Diagrams and Deployment Diagrams.

**Behavioral Model View:** Capture dynamic aspects or behavior of the system. Behavior diagrams include: Use Case Diagrams, State Diagrams, Activity Diagrams and Interaction Diagrams.

**Implementation Model View:** The UML Implementation View combines the structural and behavioural dimensions of the solution realisation or implementation. The view is often also referred to as the component or development view.

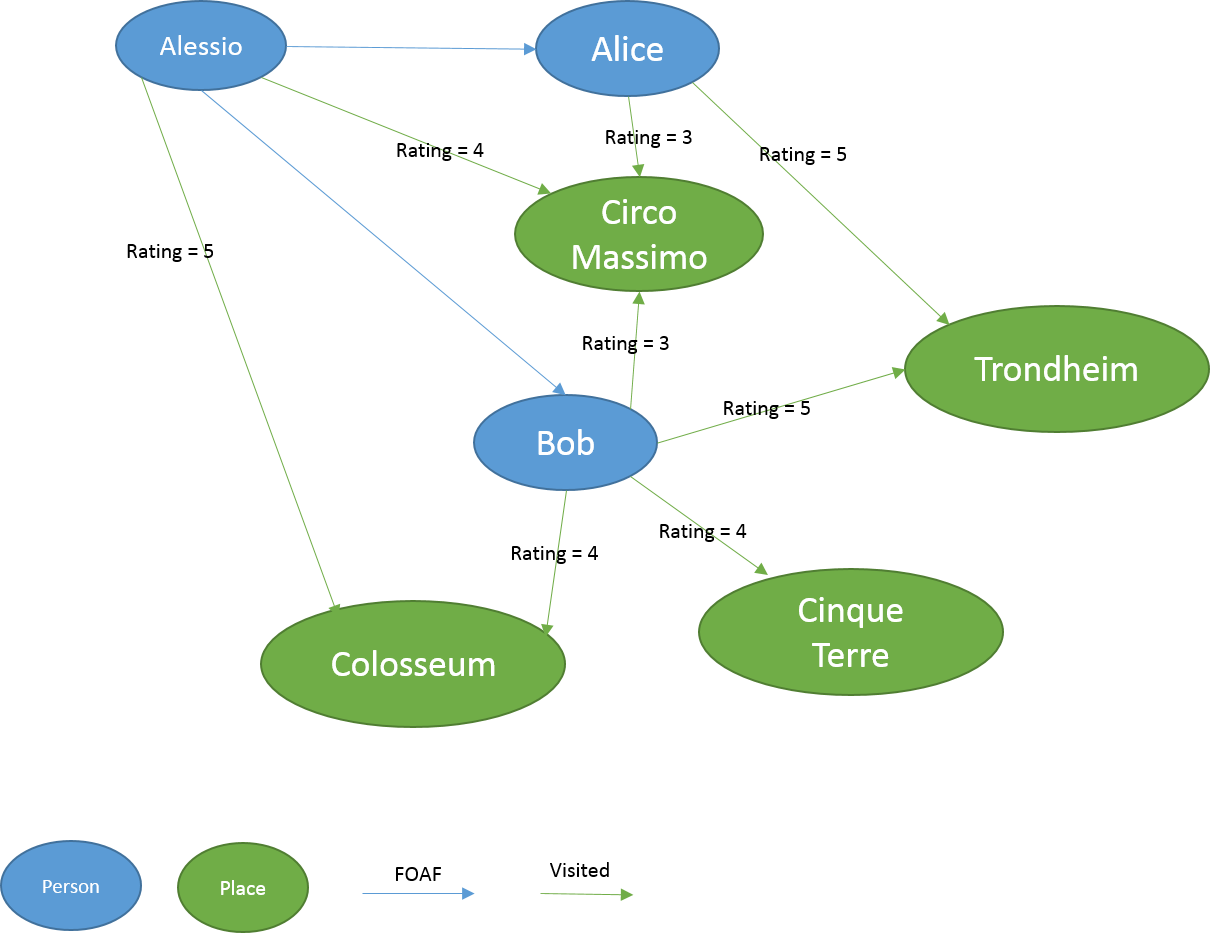
**Environmental Model View:** These UML models describe both structural and behavioural dimensions of the domain or environment in which the solution is implemented. This view is often also referred to as the deployment or physical view.

**UML:**

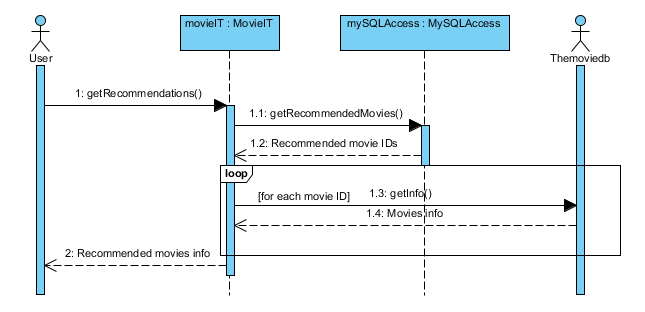
**Unified Modelling Language (UML)** is a general purpose modelling language. The main aim of UML is define a standard way to **visualize** the way a system has been designed. It is quite similar to blueprints used in other fields of engineering.

UML is **not a programming language**, it is rather a visual language. We use UML diagrams to portray the **behaviour and structure** of a system. UML helps software engineers, businessmen and system architects with modelling, design and analysis. The Object Management Group (OMG) adopted Unified Modelling Language as a standard in 1997. Its been managed by OMG ever since. International Organization for Standardization (ISO) published UML as an approved standard in 2005. UML has been revised over the years and is reviewed periodically. Software development is a similar process in many ways. UML has emerged as the software blueprint methodology for the business and system analysis, designers ,programmers and everyone involved in creating and deploying the software system in an enterprise. The UML provides for everyone involved in software development process the vocabulary to communicate about software design.

**USECASEDIAGRAM :**

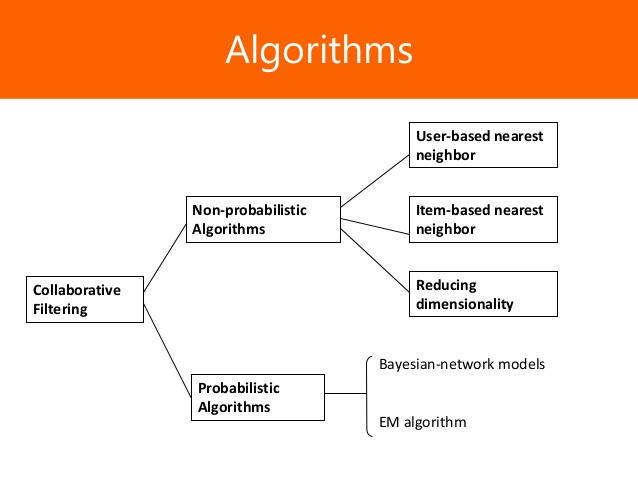


**5.2.SEQUENCE DIAGRAM :**



**5.3 CLASS DIAGRAM :** 

**5.4 ACTIVITY DIAGRAM:**



Coding

**6. CODING**

This is the most important phase of the project.

Testing

**7. TESTING**

**Testing:**

Testing is the process of detecting errors. Testing performs a very critical role for quality assurance for ensuring the reliability of software. The result of testing are used later on during maintenance also.

Purpose of Testing:

The aim of testing is often to demonstrate that a program works by by showing that it has no errors. The basic purpose of testing phase is detect the errors that maybe be present in the program. Hence one should not start testing with the intent of showing that a program- works, but the intent should be to show that a program does’t work.

Testing Objectives :

The main objective of testing is to uncover a host of errors, systematically and with minimum effort and time. Stating formally, we say, testing is a process of executing a program with the intent of finding of an error. A successful test is one that uncovers an as at undiscovered error. A good test case is one that has a high probability of finding error, if it exists. The software more or less confirms to be quality and reliable standards

**7.1 Levels of Testing**

In order to uncover the errors present in different phases we have the concept of levels of testing. The basic levels of testing are as shown below…

Unit Testing:-

The philosophy is behind testing is to find errors. Test cases are devised with this in mind. A strategy employed for system testing is code testing.

Code Testing:-

This strategy examines the logic of the program. To follow this method we develop some test data that resulted in executing every instruction in the program and module i.e., every path is tested. Systems are not designed as entire nor or they tested as single systems. To ensure that the coding is perfect two types of testing is performed or for that matter is performed on all systems.

White Box Testing:-

This unit is a testing method where a unit will be taken at a time and tested thoroughly at a statement level to find the maximum possible errors. I tested step wise every piece of code, taking care that every statement in the code is executed at least once . The white box testing is also called glass box testing.

Black Box Testing:-

This testing method considers a module as a single unit and checks the unit at interface and communication with other modules rather than getting in to details at statement level. Here the module will be treated as black box that will take some input and generate output. Output for a given set of input combinations are forwarded to other modules.

CONCLUSION

**8.CONCLUSION**

Due to the inaccurate similarities calculated by current mainstream similarity measurement methods, which may bring second-order error in prediction, we proposed a series of item similarity learning methods to overcome this challenge. Experimental results show that the proposed approaches achieve comparable and even better performance against that achieved by the state-of-the-art methods, matrix factorization, and greatly outperform item based CF which has been widely deployed in industry. Besides, since the proposed methods inherit the interpretability from item based CF, their recommended results are more accessible than that provided by matrix factorization based methods. These advantages drive us to deploy them in the real-world systems, in the future. Moreover, the Asynchronous Distributed Stochastic Gradient Descent technology will be adopted to learn item similarities so that the proposed methods are more applicable.

BIBLIOGRAPHY

**9. BIBLIOGRAPHY**

**9.1 REFERENCES**

[1] G. Adomavicius and A. Tuzhilin, “Toward the next generation of recommender systems: A survey of the state-of-the-art and possible extensions,” Knowledge and Data Engineering, IEEE Transactions on, vol. 17, no. 6, pp. 734–749, 2005.

[2] J. Bobadilla, F. Ortega, A. Hernando, and A. Gutiérrez, “Recommender systems survey,” Knowledge-Based Systems, vol. 46, pp. 109–132, 2013.

[3] M. D. Ekstrand, J. T. Riedl, and J. A. Konstan, “Collaborative filtering recommender systems,” Foundations and Trends in Human-Computer Interaction, vol. 4, no. 2, pp. 81–173, 2011.

[4] M. J. Pazzani and D. Billsus, “Content-based recommendation systems,” in The adaptive web. Springer, 2007, pp. 325–341.

[5] P. Lops, M. De Gemmis, and G. Semeraro, “Content-based recommender systems: State of the art and trends,” in Recommender systems handbook. Springer, 2011, pp. 73–105.

[6] J.-M. Yang and K. F. Li, “Recommendation based on rational inferences in collaborative filtering,” Knowledge-Based Systems, vol. 22, no. 1, pp. 105–114, 2009.

**9.2 LIST OF WEBSITES:**

<https://www.sciencedirect.com/science/article/pii/S1110866515000341>

<http://shodhganga.inflibnet.ac.in/bitstream/10603/62351/9/chpt6.pdf>

<https://www.researchgate.net/publication/289493968_Fast_Algorithms_to_Evaluate_Collaborative_Filtering_Recommender_Systems>

<https://www.python.org/>