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Socialysis

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Abstract:- With the recognition of social media, people are used to sharing their daily activities and interacting with friends on social media platforms. Based on this instance, we build a dynamic web design system to facilitate the social interaction between members of a department in college. In this paper, we find that users trend state is closely related to that of his/her friends in social media. Using this feature, we define a large dataset from a set of textual, visual, and social attributes obtained from various aspects which are trending at the present time. We then analyse the system based on this and propose a factor graph model to exhibit the social interaction of trend and the most occurring trending subject.

Keywords:- *Social Media, Social Interaction, Dynamic Web Design, Large Dataset, Factor Graph Model, Trend, Trending Subject*

I. INTRODUCTION

Today most of the information in college reaches students through word of mouth or is being printed on a paper and put up on the notice board which is finally circulated and reaches them through WhatsApp. Only few important information-like results, attendance and information about the college would be posted on the college official website where everyone could access it easily. Though this works quite effective in the college level, its less effective in the department level.

As we know, every college has minimum 10 departments, with each department having 1-3 sections and each section having minimum 60 students. So, at any point of time, any information related to one's department should be able to reach minimum 60 students. Information like changing schedule of classes, absence of teachers, rescheduling or scheduling extra classes, department events like fest, teacher's day, farewell, etc., issuing hall tickets, collecting of any fund, syllabus for each internals and many more things like these is usually being informed to students by word of mouth. The respective teacher or student conveys the information to the class representative who in turn conveys it to other students or is directly conveyed to a group of students who are physically present in the class at that point of time. This does not ensure that correct information would reach all students within the correct time. Thus, with the increasing number of students, an alternate way to the manual method is having a department level social site which would give a common platform for more efficient interaction between students and teachers within a department.

Many popular online social networks such as Twitter, LinkedIn, and Facebook have become one of the most exciting events in this decade. Online social networks (OSNs) are quite popular these days; rather 10% of the total time spent on internet is on the social networking along with the blogging account. OSNs area unit used for connecting with one another, finding right content, sharing data and so disseminative the data.[1] The present youth is very familiar with using of such social networking platforms and are also aware of its advantage and disadvantage. Therefore, having a department level social site would create greater exposure to the students to the information circulating around them and would also be notified about events and other important things within precise time without any loss of information.

This system deals with the ability to make the interaction and circulation of information among students faster and simpler by enabling easier and global access. Interaction of students on a common social platform is an added advantage because students of this generation are more familiar with using other well-known social sites like Facebook, Instagram, twitter, etc. Students can access it anytime and from anywhere. Since the social site is for a particular department, the information being collected, circulated and analysed would be department-centric information only. Therefore, this social site could serve as the one common access point to all students of the particular department for any updates, notifications or enquiries.

This system contains two main modules namely the admin module and the user module. The admin module is the access point for a single person who is recognised to be the admin for the department. This is usually the HOD or a senior teacher who is in charge of maintaining the student's activity. The user module is the access point for all students to login and post their tweets. The system recognizes a set of trending words which are recorded in the backend. The system analyses the percentage of trending topic discussed by each student and also the overall percentage of trending topic discussed by all students. The trending word which is discussed the most i.e., which has the highest percentage is also analysed and recorded.

For numerous reasons and for much added efficiency the requirement to design and implement such a system for better interaction between individuals of a department, is to be fulfilled.

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II. SYSTEM OVERVIEW

Since this system is for a particular department, the admin is in charge of registering all the students of the particular department. The admin registers the student with his/her name and sets a password. The username and password which is set by the admin is sent via mail to that particular student. This helps in maintaining security within the department by not allowing other department students to access the system as well as ensure privacy of one's personal information. The admin has the privilege to check the students daily activity. The percentage of trending words tweeted by the students is graphically represented to the admin. The admin can also check the overall percentage of trending words tweeted by all the students. The system analyses the highly discussed trending word and displays it to the admin.

The user allows all students to login with the email-id and password given to them. Similar to other social sites, the students are allowed to tweet, like, comment and retweet whatever they wish to convey to others. The user is able to view the other students who are registered by the admin. They can follow and view any individual's profile. The user screen has two sections displayed, one displays all the posts including images you and others have tweeted and the other displays only the text in those posts. The user is able to work around easily as the social site is similar to other social platforms.

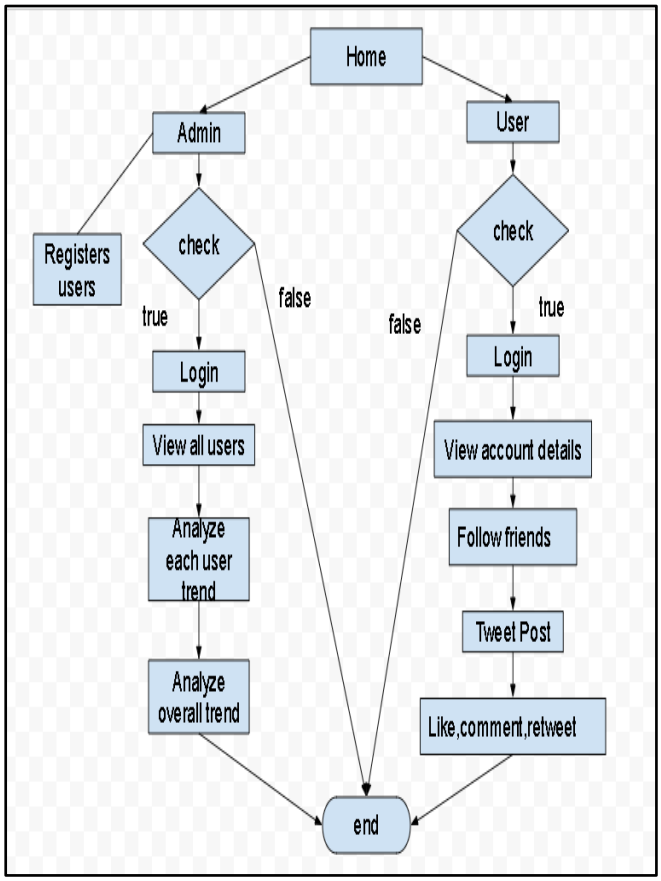

Fig 1

III. RELATED WORK

A. *Daily Stress Recognition from Transportable Knowledge, Weather and Individual Traits*

➢ *Authors: Andrey Bogomolov, Bruno Lepri*

From researchers it is proven that quality of life a person leads depends on stress. The increase in stress causes many diseases. Thus, many stress detection systems were devised. These devices were based on physiological parameters. But these devices require physical sensors that need to be carried by user all the time. Here in this paper, an alternative approach is proposed which shows that daily stress can be based on behavioural metrics which will be derived from user's mobile phone activity, from weather conditions and also personality traits. [2] Using this approach, the user need not wear any sensors. The smartphone which will be with user all the time will help detect the stress along with weather conditions.

B. *Measuring Post Traumatic Stress Disorder in Twitter*

➢ *Authors: Glen Coppersmith, Craig Harman*

Mental health studies done traditionally was based on data collected from personal contact with a health care specialist. Recently the use of social media data for recognising depression is seen. But there are other mental health conditions which have limited evaluations. The PTSD (Post Traumatic Stress Disorder) is a serious condition which affects many people worldwide. This disorder is difficult to diagnose based on self-reports and testimonials from friends and relatives. [3] Social media data and web data in general have enabled large scale analyses of population's health beyond what has previously been possible with traditional methods. Here in this paper a method is presented to obtain a PTSD classifier for social media using simple searches of available Twitter data. It has been demonstrated that by observing differences in language between PTSD and random individuals, the disorder can be found.

C. *Modelling Paying Behaviour in Game Social Networks*

➢ *Authors: Zhanpeng Fang, Xinyu Zhou*

Online gaming, being one of the largest industries on internet is responsible for generating tens of billions of dollars in revenues annually. The challenge in Online gaming is to find free users and convert them to paying customers. For this research has to be made on topics like, the fundamental factors which influences users to pay and how to design a prediction model to identify the potential users who are likely to pay. Here in this paper two large online games are employed as the basis and how a free user becomes a paying customer is studied. And also, it is examined how a user's paying behaviour influences others in gaming network. For this various sociological perspectives, social structural diversity and social influence is studied. [4] Based on these studies a framework is proposed to predict potential new payers. A local consistent factorization machine (LCFM) model is developed by using

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the network information into factorization model. This can effectively identify potential paying users.

IV. SYSTEM ANALYSIS

A. Study of Existing System

In relevance to the system we intend to build, the previous work fall into two categories:

- *Circulation of Information within a Department in a College*

The figure below shows how information is being informed to students within the department in the current system. The respective faculty conveys it to the class representative who in turn conveys it to the other students or directly conveys it to the students present in class physically at that particular time. The information received is further circulated via WhatsApp groups, word of mouth or if very important will be put on notice board.

The information finally received by all students may not be right or may be understood in a different way. There are high chances of miscommunication as well as loss of information. If the student wants to further enquire about the received information, he/she should go back and talk to the respective faculty in person.

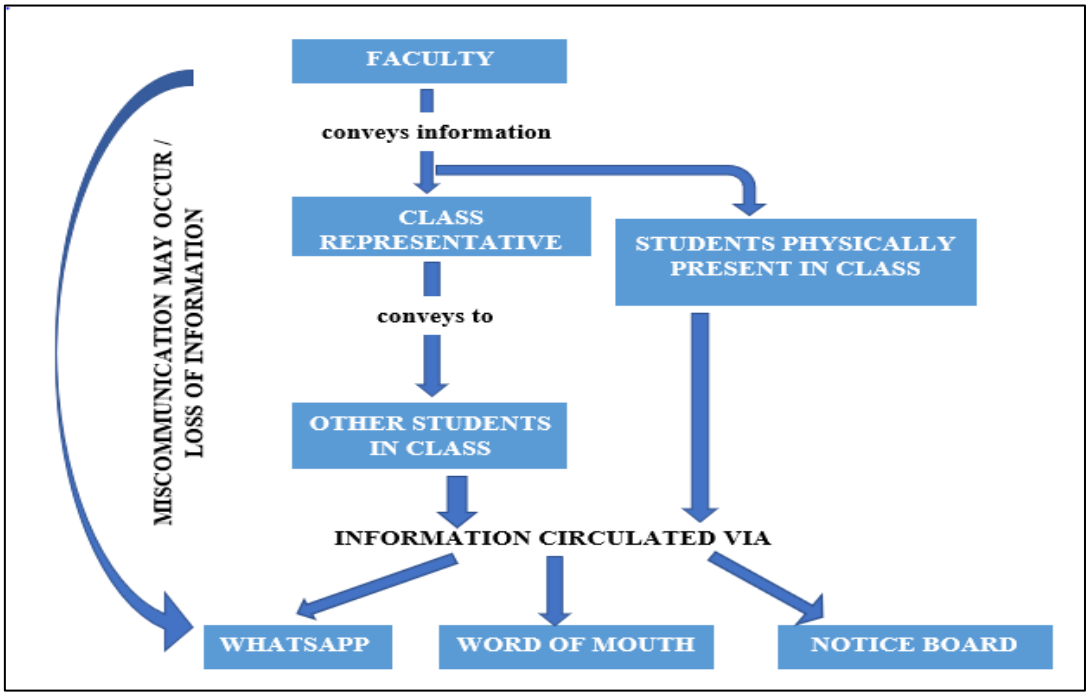

Fig 2

- *Analysis of Social Media Content*

Many studies on social media-based emotion analysis are at the tweet level, using classic approaches and text-based analysis. For example, a system called MoodLens is an emoticon-based sentiment analyser of Chinese tweets used in Weibo. Weibo, a social networking platform like Facebook, Twitter is used on a large scale in China. It helps users not only express factual information through texts but also help them convey their emotional state through emoticons. In MoodLens, 95 emoticons are categorised into four types of sentiments namely, angry, disgusting, joyful and sad. Using this, the sentiment shift and emotion propagation expressed in Weibo is observed. This system shows that anger has a stronger correlation among different users than joy, indicating that negative emotions could spread more quickly in the network. Hence, we can see that social-media content is mostly analysed using a set of human recognised emotions.

- *Disadvantages of Existing System*

The drawbacks of the currents system are as follows:

- Require much man power

- Much effort
- Hard to maintain.
- More time

- Enough care has to be taken to ensure the information is not lost.
- Miscommunication of information may occur.
- All human recognised categories of emotions may not be considered for analysis.
- Department related information may be given away to all students when put on the notice board.
- Information conveyed to the students is not recorded for future reference.
- The faculty is not aware of the most talked topic amongst the students.
- Chances of knowing the most important issue at that time by all students is less.

B. Study of Proposed System

The proposed system overcomes all the disadvantages of the existing system by providing features for the social interaction between the members of the department and also for analysing the social content being discussed among them. The proposed system is being designed from the two perspectives being discussed in existing system. Firstly, the circulation of information within the department is facilitated by designing a social platform for that particular department. Secondly, social-media content on that platform is being analysed by recording a set of trending words and comparing the tweet content with it to find out the level to which these trending words are being discussed among the students.

The proposed system has two main modules- ADMIN and USER

➢ *Admin:*

The admin module is the access point for a single person who is recognised to be the admin for the department, for example the HOD or any senior faculty. The admin can perform the following tasks:

- Registration of students of that particular department with their details and a unique password
- Checking each user's activity and analysis of the percentage of trending words tweeted by each user
- Checking the overall percentage of trending words used by all users.
- Checking the most talked topic among the users i.e., the trending word with the highest percentage

➢ *User:*

The user module is the access point for all students to login and post their tweets. The user can perform the following tasks:

- Login with the email-id and password given to them.
- Allowed to tweet, like, comment and retweet whatever they wish to convey to others.
- Able to view the other students who are registered by the admin.
- Can follow and view any individual's profile.

❖ *Advantages of Proposed System*

The proposed system addresses the limitations of the current system. The requirements for the system are gathered from the defects recorded within the past and conjointly supported the feedback from users of previous metrics tools. Following are the advantages of the proposed system:

➢ Reducing time in activities: Time spent in communicating the information to everyone through word of mouth is reduced.
➢ Centralized data handling: The admin has all the access to register the students and analyse the data content tweeted.
➢ Operational Efficiency: Analysis of trending word percentage is done by considering all words and then segregating them. The process is more efficient as it makes the circulation of information easier.
➢ Security maintained: As the registration is done by admin, security is maintained such that only a particular department member can login. The credentials to login are mailed to the respective user thereby improving the security.
➢ Data storage and retrieval will become faster
➢ Easier to maintain because data is stored in an orderly manner and in a single database.
➢ The Admin can remove any tweet if he thinks it is not up to the decorum of the group.

V. METHODOLOGY

A. Control View Model

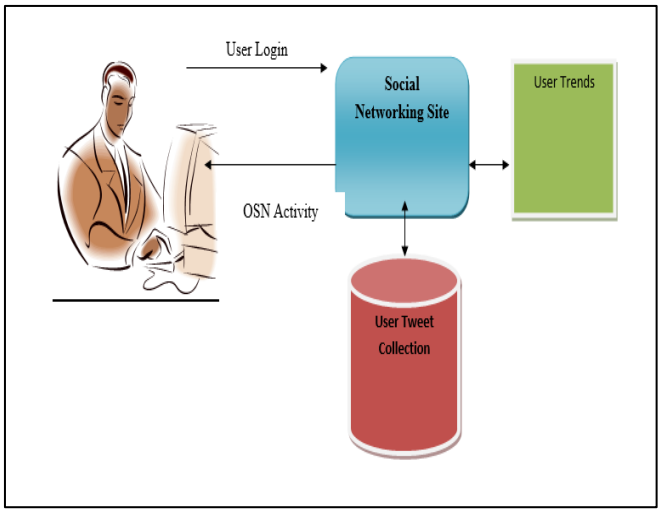

Fig 3

The System Architectural Pattern used is **Model View Controller (MVC).** In this type of System Architectural Pattern, Systems allow a high degree of user interaction, which is mainly achieved with the help of Graphical User Interface (GUI). Here, the pattern isolates "domain logic" (the application logic for the user) from input and Graphical User Interface (GUI) permitting independent development, testing and maintenance of each.

The **Model View Controller** pattern (MVC) divides an interactive application mainly into three components.

➢ The **Model** which contains the core functionality and data.
➢ **Views** which display information to the user.
➢ **Controllers** which handles user input.

Views and Controllers put to together comprise the User Interface (UI).

A change-propagation mechanism ensures that consistency between the User Interface (UI) and the model.

The **Model** which is used to manage information and notify observers when that information changes. The Model is like the domain-specific representation of the statistics upon which the application operates. [5] Domain logic adds meaning to a raw data (Here, User Tweet Collection contains the information about user registration, tweets that are tweeted by user, users following information, likes and comment activity information). When a model changes its state, it notifies its associated views so that they can be refreshed.

The **Controller** receives input and initiates a response by creating calls on the model objects (User Tweet Collection). [6] The controller accepts input from the user and instructs the model and viewport to perform the actions based on that input (Here, Servlets i.e., Apache Tomcat Server is used).

A Model View Controller (MVC) application may be a collection of model/view/controller triplets, each responsible for different User Interface element.

Model View Controller is often seen in web application where the **View** is the Java Servlet Pages (JSP), Java Script (JS), Hyper Text Markup Language (HTML) generated by the app. The Controller receives GET or POST input, handling over to the domain objects (i.e., the model) that contains the business rules and knowledge to hold out specific tasks such as processing a new subscription. [7]

The control flow of MVC in generally as follows:

- The user interacts with the user interface in some way (for example, presses a onclick submit button)
- The controller handles the input event from the User Interface (UI), often via a registered handler or a callback and converts the event into appropriate user action, understandable for the model. [8]
- The controller notifies the model of the user action (User Interface), possibly resulting in a change in the model's state (for example, the controller updates the user's registration).
- A view queries the model in order to generate an appropriate User Interface (UI) (For example, the view lists the User's registration contents). The views get its own data from the model. The controller may (in some implementation) issue a general instruction to the view to render itself. In others, the view is automatically notified by the model of changes in state (Observer) which requires a screen update.
- The User Interface (UI) waits for the further user interactions, which restarts cycle.

The main goal of Model View Controller (MVC) is by decoupling models and views, to reduce the complexity in architectural design and to increase flexibility and maintainability of code.

B. Concepts Utilized

- *Attribute categorization*

Two sets of attributes are defined to measure the difference between the trending and no-trending topics discussed by all users on the system designed.

- Tweet level attributes- Attributes from a user's single tweet which describe the visual content as well as social media content being liked, commented, retweeted of that single tweet.
- User level attributes- Attributes summarized from a user's weekly tweets which are extracted from a list of user's tweets in a specific time period.

Fig 4

- *Text Characterization*

In this concept, natural language texts are assigned to two or more categories based on their content. In our system, text categorization is used to analyse the texts tweeted and categorize them as trending or non-trending. [9] A set of trending words is being recognised after a systematic analysis based on current situation and text categorization is done with respect to that.

TRENDING WORDS TWEETED	NORMAL WORDS TWEETED
Exam	Good
Project	Is
Ise	The
Seminar	Morning
Traffic	Hello
Accident	Nice
Modi	Time
Election	Have
Results	awesome

Fig 5

➢ *Feature Extraction*

When the input data to any system designed is too large and highly redundant, it could be transformed to a reduced set of features. [10] In our system, the data tweeted by all users is a very large dataset to be analysed as a whole. Therefore, only the trending words are extracted from the dataset and is analysed to find the percentage of trending topic discussed with respect to the total number of words tweeted. The extracted set is also used to find out the word that is being used the most amongst the entire dataset of words tweeted by the users.

tid	uid	username	msg	photo	trends	t_word
30	7	Anushka	heloo...good morning		Normal Tweet	(NULL)
31	7	Anushka	project evaluation		Trending Tweet	project
32	6	Apoorva	project demo		Trending Tweet	project
33	6	Apoorva	today is the project final demo		Trending Tweet	project
34	1	akshata	project is conducted		Trending Tweet	project
35	8	Pavithra	hiiii.... good afternoon	(Binary/Image)	Normal Tweet	(NULL)
36	8	Pavithra	hiiii.... good afternoon	(Binary/Image)	Normal Tweet	(NULL)
(Auto)	(NULL)	(NULL)	(NULL)	(NULL)	(NULL)	(NULL)

Fig 6

C. Security Model

The security of the system is maintained for a particular department by giving access to only those students registered by the admin. The admin has the power to register only the students of that particular department. The username and password which is given by the admin is being sent to the respective user's mail id. Thus, the authenticity of the system is maintained through mail services.

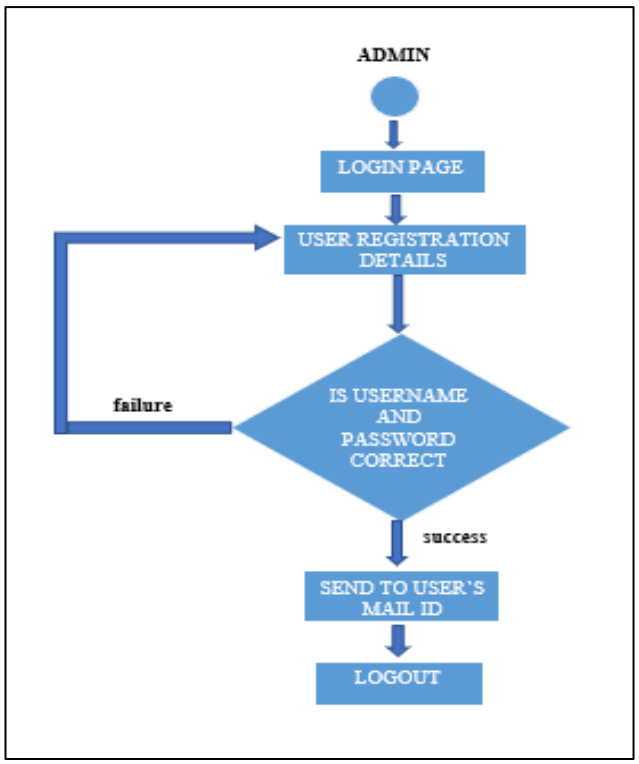

Fig 7

VI. IMPLEMENTATION

A. Frontend

The overall project is a **Dynamic Web Project** (contains dynamic Java EE resources such as JSP Files, Servlets, filters, and associated metadata, in addition to static resources such as HTML Files and Images) built on Eclipse IDE Platform.

➢ *Web Application Directory Structure*

Java web applications are wrapped as Web Archive (WAR) and it has a explicated structure. We can convey above Dynamic Web Project as WAR file and unzip it to check the hierarchy.

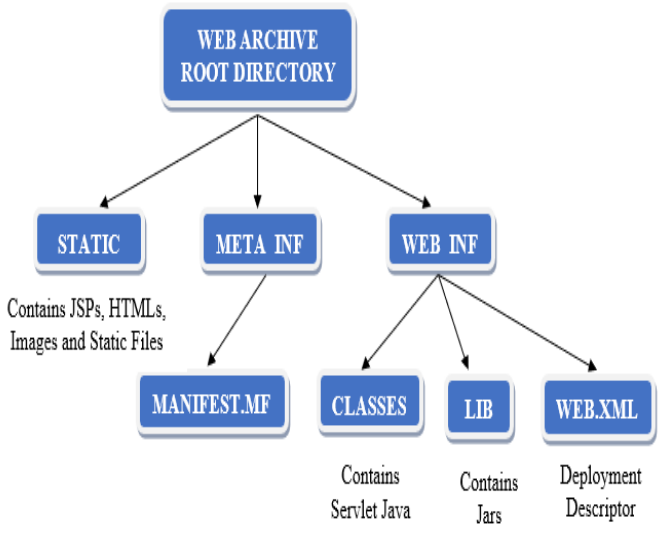

Fig 8

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➢ *Java Servlet Pages (JSPs)*

Java Servlet Pages (JSP) is an automation that helps software developers to create dynamically generated web pages based on HTML, XML, other document types. JSP uses Java Programming Language. To deploy and run JSPs, a suitable web server with a servelet container, such as Apache Tomcat is required.

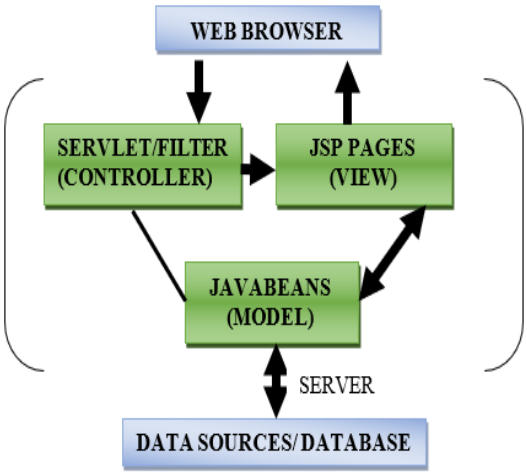

Fig 9

➢ *JSP Model Architecture*

JSP can be used autonomously or as the view component of a server-side Model View Controller design, usually with Java Beans as the model and Java Servlets as the controller.

➢ *HTML*

HTML (Hyper Text Markup Language) is a text-based approach to outline how content contained within an HTML file is structured. This Markup language helps a web browser to display the text, images and other forms of multimedia on a web page.

➢ *CSS*

Cascading Style Sheet (CSS) is a style sheet language used for illustrating the presentation of a document, written in a Markup language like HTML.

➢ *Java Script*

Java Script is a high level, comprehend programming language that conforms to the ECMA script specification. Java Script has features like Universal support, imperative and structured, dynamic, object oriented and functional (first-class).

➢ *jQuery*

jQuery is a Java Script library that allows web developers to add extra performance to their websites. Its open source and free license, another reason jQuery has gained such popularity is its cross-browser compatibility.

➢ *Bootstrap*

Bootstrap is a gratis and open source front end development framework for the design of websites and web apps. The Bootstrap framework is assembled on HTML, CSS, and JavaScript (JS) to facilitate development of responsive, mobile-first sites and apps.

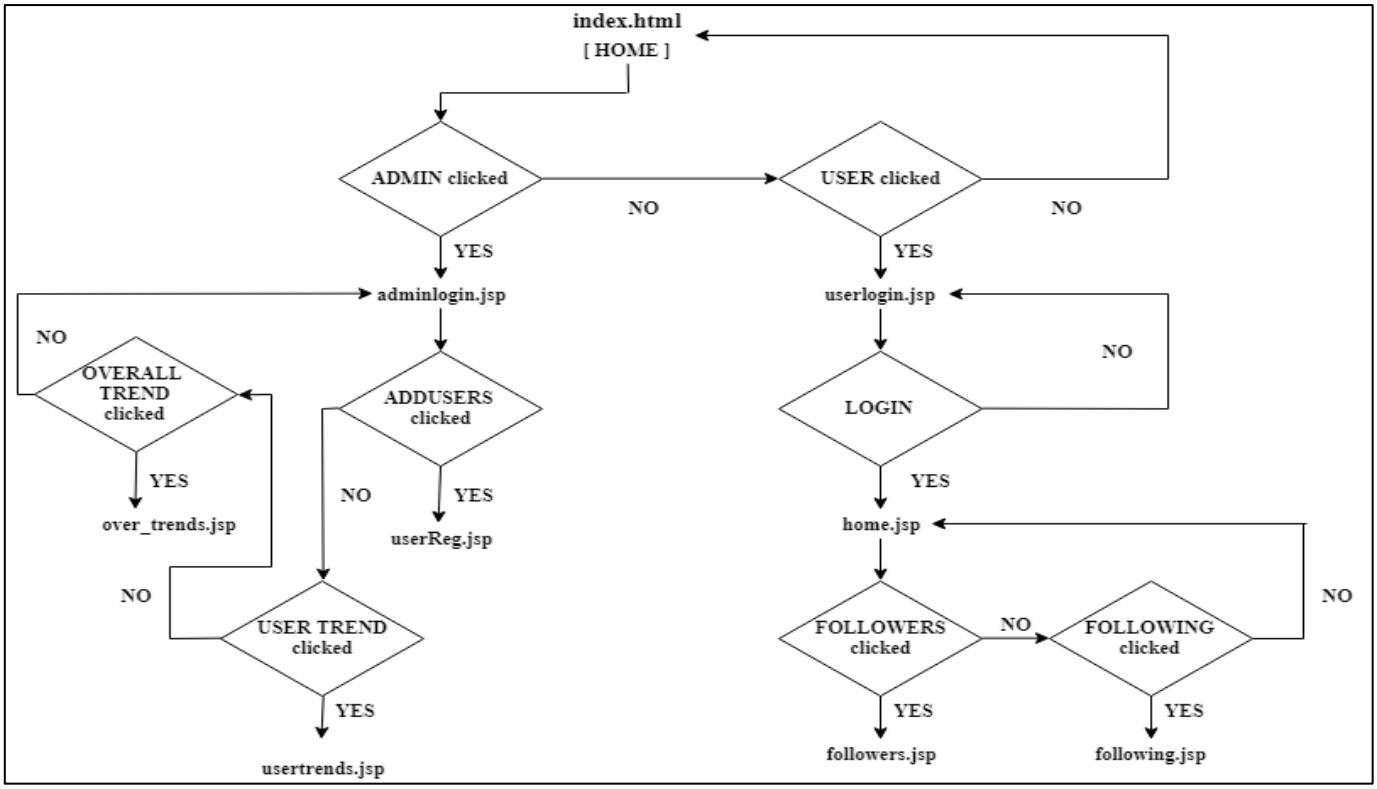

Fig 10:- Front End Design Flow

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B. Backend

➢ *Database Connection – JDBC*

Java Database Connectivity (JDBC) is an application programming interface (API) for the programming language Java, which elucidate how a client may access a database. It is a Java-based data access automation used for Java database connectivity. It is a part of the Java Standard Edition platform, from Oracle Corporation. It provides methods to query and update data in a database and is oriented concerning relational databases. A JDBC to ODBC bridge permits connections to any ODBC accessible data source in the Java virtual machine (JVM) host environment.

➢ *Database – MySQL*

MySQL is an Oracle-backend publicly known source Relational Database Management System (RDBMS) based on Structured Query Language (SQL). MySQL runs on effectively all platforms, including Linux, UNIX and Windows. Although it can be used in a wide range of implementations, MySQL is most Often associated with web applications and online publishing.

TWEET.sql

tid	uid	username	msg	photo	trends	t_word
30	7	Anushka	heloo...good morning		Normal Tweet	*(NULL)*
31	7	Anushka	project evaluation		Trending Tweet	project
32	6	Apoorva	project demo		Trending Tweet	project
33	6	Apoorva	today is the project final demo		Trending Tweet	project
34	1	akshata	project is conducted		Trending Tweet	project
35	8	Pavithra	hiiii.... good afternoon	(Binary/Image)	Normal Tweet	*(NULL)*
36	8	Pavithra	hiiii.... good afternoon	(Binary/Image)	Normal Tweet	*(NULL)*
(Auto)	*(NULL)*	*(NULL)*	*(NULL)*	*(NULL)*	*(NULL)*	*(NULL)*

FOLLOW.sql

id	uid	name	fid	fname	status
1	3	Apoorva	2	apoorvasrinivasan27@gmail.com	Following
2	3	Apoorva	1	akshata	Following
3	6	Apoorva	1	akshata	Following
4	6	Apoorva	8	Pavithra	Following
5	1	akshata	6	Apoorva	Following
6	1	akshata	8	Pavithra	Following
7	7	Anushka	1	akshata	Following

TREND.sql

trendwords
election
politics
exam
result
holiday
trip
project
seminar
modi
rahul gandhi

Fig 11

REGISTER.sql

id	fname	email	age	city	country	username	password	photo
1	AKSHATHA V	akshathavishwanath96@gmail.com	22	bangalore	IN	akshata	12345	(Binary/Image)
6	Apoorva	apoorvasrinivasan27@gmail.com	22	bangalore	IN	Apoorva	apoorva	(Binary/Image)
7	Anushka	anushkarj4@gmail.com	21	bangalore	IN	Anushka	anushka	(Binary/Image)
8	Pavithra	pavithramuniraju21@gmail.com	22	bangalore	IN	Pavithra	pavithra	(Binary/Image)
9	varun	kadamvarun02@gmail.com	22	bangalore	IN	varun	12345678	
10	aaaaaaa	a	19	bangalore	IN	aaa	aaa	(Binary/Image)
11	ff	ff	18	bng	IN	aaa	aaa	(Binary/Image)
12	akshu	aaa	19	bng	IN	qq	qq	(Binary/Image)
13	jjjjj	aaa	19	bng	IN	ggg	ggg	(Binary/Image)

LIKES.sql

id	tid	uid	likes	name
1	4	1	1	akshata
2	4	3	1	Apoorva
3	33	8	1	Pavithra
(Auto)	*(NULL)*	*(NULL)*	*(NULL)*	*(NULL)*

Fig 12

VII. FUTURE SCOPE

➢ In this paper, the admin is given complete responsibility of registering users and removing them. The users are not given the free will to register themselves. In future the users can be given authority to register themselves to the website.

➢ As the admin is responsible for registering and removing users, the admin is in charge of the security. In future the security can be increased using high security systems to login like biometric login.

➢ The website is currently running on local host which can later be launched.

- The current website focuses on creating a social network platform and identifying most talked trending topic. So only basic features of social media are observed. In future the additional features present in other social media can also be implemented using the same basic framework.

VIII. CONCLUSION

The social networking sites are preferred by many people for interacting. This is because of the numerous advantages provided by them. The information can be passed and received by anyone registered in the network without the constraints of time and place. One of the disadvantage is that people can talk or post things which may not be decent, or which may damage other's emotions. We overcome the disadvantage by giving the complete responsibility of registering, removing users and to upheld the decorum of the group to admin. Here in this paper such a social media platform for the class group students is designed. The added functionality is that the most talked trending topic is identified and can be seen by admin. The students can interact with each other similarly as in other social media. The website designed implements the above mentioned features successfully.

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