FLAMING IN COMPUTER MEDIATED COMMUNICATION

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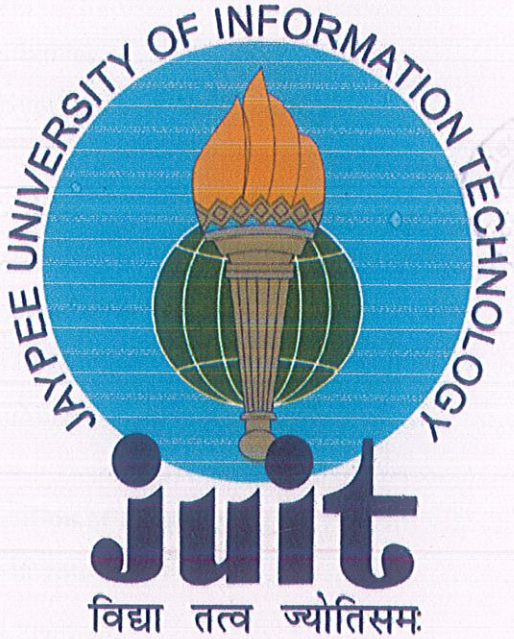

May-2012

In partial fulfillment of the Degree of

Bachelor of Technology

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY,

WAKNAGHAT

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CERTIFICATE

This is to certify that the project report entitled "**Flaming In Computer Mediated Communication**", submitted by Ayushi Dwivedi, Pranav Shandil, Karan Sood and Manvee Gupta in partial fulfillment for the award of degree of Bachelor of Technology in Information Technology to Jaypee University of Information Technology, Waknaghat, Solan has been carried out under my supervision.

Nitin
Signature

Date: 31 May 2012

Dr. Nitin

(Associate Professor, CSE &IT)

It is certified that this work has not been submitted partially or fully to any other university or institute for the award of this or any other degree or diploma.

Signature of Supervisor ..... Nitin .....

Name of Supervisor ..... Dr. Nitin .....

Designation ..... Associate Professor

Date ..... 31 May 2012 .....

ACKNOWLEDGEMENT

It gives us a great sense of pleasure to present the project report entitled "**FLAMING IN COMPUTER MEDIATED COMMUNICATION**". We owe a special debt of gratitude to our project supervisor **Dr. Nitin** for his constant support and guidance throughout the course of work. His sincerity, thoroughness and perseverance have been a constant source of inspiration to us.

We would also like to thank Prof. S.P. Ghrera, HOD, and Department of CSE & IT for his kind assistance and cooperation by providing us with required infrastructure and work culture during the development of the project. Last but not the least, we acknowledge our family and friends for their contribution in the completion of the project.

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SUMMARY

The use of computer-mediated communication has increased the hostile expressions of emotion, termed flaming. Flaming is primarily social-context dependent. Often relatively anonymous and socially detached, electronic communication allows people to write things online that they would seldom consider saying face-to-face, generating flames. This study takes a closer look at the social context in which flaming occurs, which need not necessarily be developed online but, as well, can be the social, religious, and political background and affiliations of the participants.

This project work includes a survey majorly conducted in a confined environment on 104 subjects and the result is analyzed based upon the feedback of the people. The research focuses on flaming tendencies, especially when incendiary messages or posts by Non-met friends on their friend list. The research adopted the method of random group of social networking sites users and studied the response patterns when faced with certain sensitive topics or comments. In a study of inclination towards flaming results showed that that the users having more number of Non-met friends were found more prone towards flaming, and males tended to participate more in the activity than did females.

Furthur considering our results we developed software code for internet messenger which could remove real time flaming words as written by the person who is sending the message and replaced by symbol of our choice. In addition to this we also developed code for a flaming device checker which could find the positive and negative words encountered in the message and also calculate the flaming percentage in the message.

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List of Symbols and Acronyms

Flaming
Social Networking Sites(SNS)
Non-Met friends
Facebook friends (FBD)
Social media
Computer mediated Communication (CMC)
Probit Model

CHAPTER 1

INTRODUCTION

Flaming is any hostile and insulting interaction between Internet users. Flaming usually occurs in the social context of an Internet forum and other social networking sites. It is commonly the result of the discussion of heated real-world issues such as politics, religion, and philosophy, but can also be provoked by seemingly trivial differences. Individuals known as flamers carry out deliberate flaming, as opposed to flaming because of emotional discussions. Computer-mediated communication (CMC) is defined as any communicative transaction that occurs with two or more networked computers. It is the process by which people create, exchange, and perceive information using communication systems that includes encoding, transmitting, and decoding messages. CMC is divided into synchronous and asynchronous modes. In synchronous communications, all participants are online at the same time (e.g. Internet relay chat (IRC)) and asynchronous communications occurs with time constraints (e.g. sending an email).

Importance of CMC

Computer-mediated communication (CMC) is now-a-days viewed as one of the most important platform for social interaction, thereby removing the physical interaction constraints [10]. On one hand there are credits attributed to CMC, while on the other there is also another side in new mediated communication such as electronic mail, online chat and messages in the form of hostile and aggressive communicative behavior, termed as "flaming". The use of CMC in the organizations has raised serious doubts that whether it is beneficial or harmful for the

organizations due to flaming, which has become prominent part of the social interaction. It is a general belief that flaming consists of hostile and aggressive behavior shown through CMC. However, Lea et al. [21,22] defies this belief. Nevertheless, scholars have collectively pushed forward to try to quantify levels of flaming as well as to provide explanations and possible remedies. The lack of a clear and consistent conceptual and operational definition of the concept, however, leaves a notable void in this body of work. Consequently, there is a greater need for defining flaming with more precision and understanding the behavioral tendencies of the users towards flaming. Flaming occurs when there is a difference in the perception of the users during social interactions. Some of the users may take a particular remark aggressively and for some it may be a joke. Misunderstandings regarding communication behavior can result in personnel discord, split team efforts, and legal liability, all of which are clearly detrimental to organizations' ongoing success. Several scholars have argued that there are specific features of computer-mediated channels that might contribute to the incidence of flaming and other problematic online interactions [19,38]. Although others have questioned the prevalence of flaming [21] and technologically deterministic explanations for it [42,43], the emphasis has remained on flaming behavior as a uniquely computer-mediated phenomenon. However, the flaming occurring in CMC is independent of the other forms of social interactions.

The framework suggested assumes that flaming can occur in social interactions through mediated channels like e-mail, letters and internet relay chat or through face-to-face communication. Though concept of flaming is generated from experience via online communication, the concept mainly depends on human nature and behavior.

Concept of Flaming

Flaming is defined as verbal attacks intended to offend either persons or organizations [34] . The notion of it is emotional, outrageous, outside the boundaries of polite conversation and is seriously destructive [24]. It is always characterized by profanity, obscenity, and insults. For [1] ,

the occurrence of flaming is affected by gender, level of maturity, hostility , while for [34] , flaming is caused by hostility and moderated by personal values and the risk of reprisal. Whatever the definition, most commentators agree that flaming is an intentional act that occurs via computer-mediated channels. For example, [37] Seabrook described flaming behaviour as "premeditated insults" and [40] Tamosaitis (1991) viewed flaming as being done "purposively" and describes a sender as "someone who delights in inciting trouble". Furthermore, [37] Seabrook stated that flaming is "a form of speech unique to online communication", although [39] Stewart was more general, limiting his conception of flaming to "rapid, abusive, or otherwise over exuberant outbursts sent via computer".

The question is what is the type of behavior that can create such a hostile situation in an online communication that the participants tend to communicate with people with almost complete lack of civility?

The explanation lies in the fact that, Internet, which is considered as a major threat to humanity, connects people thus reflecting their attitude and behavior and it is actually the people who are a threat to themselves. This, in turn reflects that the language and culture of a society influences the communication that they have on the internet. Flaming is hostile and insulting interaction between users on the internet or any social networking website who may share some common interest. Messages, which contain some conflicting or hostile information, are referred to as "flames". "Flames" can be hostile, intimidating, aggressive, offensive, sarcastic, unfriendly and insulting. A text written in a large, bold font can be termed as aggressive. Red colored font signifies swearing. Use of emoticons (smiley faces :), sad faces :(, or other symbols), which are meant to mimic emotional or facial cues not present in text-only communication is also a type of flaming. Acronyms such as LOL! (Laughing out loud), ROFL! (Rolling on the floor laughing) and J/K (just kidding) could also have an effect on how receivers perceive a message [41].

Example: Conflicts on issues due to difference in individual opinions. "Anna goes on fast

again".

Person 1: "Anna has emerged like a God for India against corruption".

Person 2: "Anna just wants publicity and is therefore blackmailing the government."

CHAPTER 2

CLASSIFICATION OF FLAMING

The research saw a need to classify flames on social networking sites as it revealed some patterns of replies based on the type of flame posted by users. All statuses given to the survey subjects can be classified broadly into one of these categories. Some examples are taken from the survey.

Direct and Intentional Flaming

Flaming tendencies are noted to be highest when users intentionally use abusive, incendiary and hostile message against another user or users. This is major on different forms of computermediated communication but is less seen on social networking sites. Users prefer to keep their confrontations private and not publicize them to all their friends on their list to unnecessarily. Users are more conscious of their actions on social networking sites. Yet, there are small groups who take such steps and use venues like status messages, comments, etc for flaming. Such flaming patterns are quite seen on status messages but are more predominant on discussions on groups or community venues. Other users with direct flames reciprocate such flames .

Example: "Hello, stupid! If you were not such an idiot, you would understand why you are wrong about everything. However, apparently you are so retarded that you cannot even spell right".

Indirect Flaming

Indirect flaming is generally opted for to show disagreement and hostility but posted in a

language, which can only be understood by the participants involved. Friends of the user who read such messages would realize that there is some disagreement, but hardly would be able to track exact references or the users towards whom the flame is intended. Such flaming patterns can be seen on status messages that are made public to all friends. Such messages are posted to show disagreement .

Example: "Actor X tweeted "My movie earned 100cr in a week". Actor Y tweeted "and still your movie was not worth watching".

Straight Flames

When the references to people, places or situations are clearly stated in any message posted by the user, it can be termed as Straight flames. This style of flaming is used along with direct or indirect flaming. Since straight flames are clearer, they have higher chances of drawing counter flames by users, which then increases the intensity of the following flames by the users .

Satirical Flames

When a user uses statements that can have alternate derivations aimed towards a specific person, place or situation, it can be termed as Satirical Flames. This type if flaming is used predominantly by the users who tend to write incendiary messages, but still want their message to seem normal. Satirical flames are more complicated as the references made in these flames are vague. Thus, responses to such flames are normally enquiring of the details .

Hot Flames

Hot flames are characterized as "incendiary messages" and "inflammatory remarks". Typical descriptions represent hot flaming as "rude or insulting" messages, "vicious attacks", "and nasty and often profane diatribe", "derisive commentary". In other words, hot flames can be described as messages, which constitute attacks such as name calling, swearing, insulting on other communicating party/parties. It is also characterized by the use of rude behaviour (may be sexually oriented), offensive, aggressive and an angry tone .

Example: "Clerks II, the sequel to Kevin Smith's 1994 comedy hit Clerks, received mixed reviews from film critics and became the subject of a wonderful flame war on the Rotten Tomatoes forum. Two days after Clerks II hit theaters; a user called boxofficemojo planted a thread entitled "CLERKS 2 flops! It is official! 9 million OPENING weekend". When the user Movie God challenged the claim that the film had flopped, boxofficemojo came back and called him a "total gullible idiot" and a "liar," and answered other users by simply re-posting his initial commentary. Kevin Smith himself stepped in with an even-handed explanation of the movie's mediocre reception and profit potential. The insolent Karl Trale, he addressed the director with terms like "pathetic loser" and "slanderous jerk".

Cold Flames

Use of literature that cannot be categorized as abusive or hostile but when we consider the context in which it is said, it means completely different and user receiving it feels insulted and humiliated.

Example: "On April 7, 2006, Henley made a one-word entry to his blog, Unqualified Offerings. The post was simple; all it said was "Blog". What followed was a torrent of comments satirizing flamers and trolls in general. It sums up the way people act and react in comment threads all over the Internet. One comment says disagreement based on unstated difference in paradigms. Another comment came in with Nazi analogy. One of the comments is flaming other commenter for spelling error, which flame contains the requisite spelling error of its own. It kept going like that for over 1,000 comments!".

Context of flaming

The term "flaming" is mainly used in electronic contexts and rarely in non-electronic ones . Flaming has different implication in different scenarios as it has been seen that sometimes the user who resorts to flaming has some advantages whereas in many other case studies the user being flamed has the distinct advantage . Many a times it has been observed that, a user for

redirecting the argument or for forcing one's opinion uses the flaming intentionally. Flaming is used deliberately by the flame sender as a means of diverting the other factions from the original discussion, by sending flames so that they can use it for their own benefit in an attempt to agitate and make the other factions change from present topic of discussion or to remain on a certain topic or point which is preferred by the flame sender. The essence of this topic is that flaming is a very real phenomenon and to some people, it is even an actual problem . There are reported cases where several distinguished individuals have terminated or abandoned maintaining their weblogs (Online diaries that is open for net users to read and comment on) due to excessive negative or hateful feedback, they received on their weblogs. Some research suggests the law to provide for the protection of net users against flaming and other misuses of the internet .

The most common area where flaming takes place is online discussion forums, which are also called bulletin boards. Flaming often leads to the trading of insults between members within a certain forum. This is actually quite bad as flaming often throws the discussion of a legitimate topic well off track. For example, the topic of a discussion forum may be "Choosing a windows or a linux for a laptop". Some windows user may post a message gloating about the benefits of windows, which in turn prompts a response from a linux user explaining why windows suck and why linux is obviously the better platform. The windows user may then post a reply saying that windows users are, in fact, a more intelligent species who are not as naive as linux users. This kindles a more personal attack from the linux user, which incites an all out flame war .

CHAPTER 3

RESEARCH METHODOLOGY AND RESULTS

Survey-Section 1

Our research centered upon the following research questions:

1. Does social media users' having more number of Non-met friends tend to be more inclined towards flaming?

2. Do male users tend to have more number of non-met friends than female users?

A survey was prepared and conducted on the controversial ***"News of the World Phone Hacking Scandal".***

The Scandal

"The News International phone-hacking scandal is an ongoing controversy involving the News of the World and also some other British tabloid newspapers published by News International, a subsidiary of News Corporation. Employees of the newspaper were accused of engaging in phone hacking, police bribery, and exercising improper influence in the pursuit of publishing stories. Investigations conducted from 2005-2007 concluded that the paper's phone hacking activities were limited to celebrities, politicians and members of the British Royal Family. However, in July 2011, it was revealed that the phones of murdered school girl Milly Dowler,

relatives of deceased British soldiers, and victims of the 7/7 London bombings were also accessed, resulting in a public outcry against News Corporation and owner Rupert Murdoch. Advertiser boycotts contributed to the closure of the News of the World on 10 July, ending 168 years of publication. British Prime Minister David Cameron announced on 6 July that a public inquiry would look into the affair after police investigations had ended. On 13 July, Cameron named Lord Justice Leveson as chairman of the inquiry, with a remit to look into phone hacking and police bribery by the News of the World, while a separate inquiry would consider the culture and ethics of the wider British media. The inquiries led to several high-profile resignations, including Dow Jones chief executive Les Hinton; News International legal manager Tom Crone; and chief executive Rebekah Brooks. The commissioner of London's Metropolitan Police Service, Sir Paul Stephenson, also resigned his post. Former News of the World managing editor Andy Coulson, former executive editor Neil Wallis, and Brooks were all arrested. Murdoch and his son, James, was summoned to give evidence before a parliamentary media committee" [5,26,32,35,45,46,48,49,50,51,56].

In the survey, firstly, the basic details of the participant i.e. name, gender & age were recorded. Then the participants were asked the number of friends they have on facebook. In addition, the number of Non-Met friends in their friend lists was asked. The research used a method of survey using the "Status hostility Scale" [41] (Turnage 2007) which is a scale measuring responses on three situations, referring to the main controversy, which consisted seven status messages each. The participants were asked to choose one of the status messages as their response.

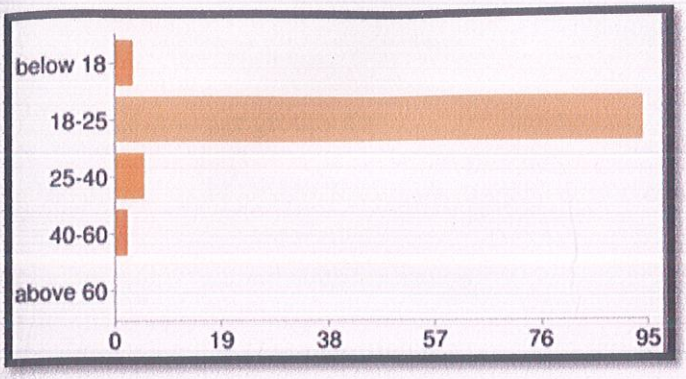

Figure 1. Number of Subjects (that are Categorized according to their age) Participated in the Survey

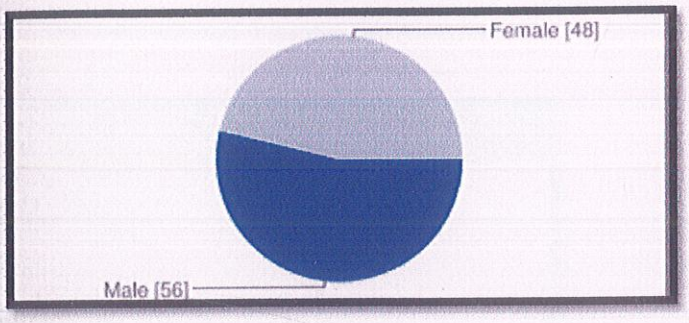

Figure 2. Percentage of Subjects Choosing a Status (Survey-Section2 Situation 1)

Table 1. Demographic details of the subjects

Age Group(in yrs)	Male	Female	Number of Subjects	Percentage (%)
Below 18	2	1	3	2.884
18 to 25	48	46	94	90.384
25 to 40	5	0	5	4.807
40 to 60	1	1	2	1.923
Above 60	0	0	0	0
			TOTAL=104	TOTAL=100

The sample consists of 54 % males (number = 56) and 46% females (Number = 48) which are from the different age groups and their percentages are defined in the table given above. All the 104 people are users of social networking sites and have mean of 282.53 friends in their respective friend list. All subjects were asked to give the number of 'Non-met' friends in their friend list. The mean Non-met friends were 24.54 whom the subjects had accepted as friends but never met in person. The research also found that the number of Non-Met friends on female friend lists were less than of the male subjects in the survey.

Figure 3. Screenshot 1 of Survey Section 1

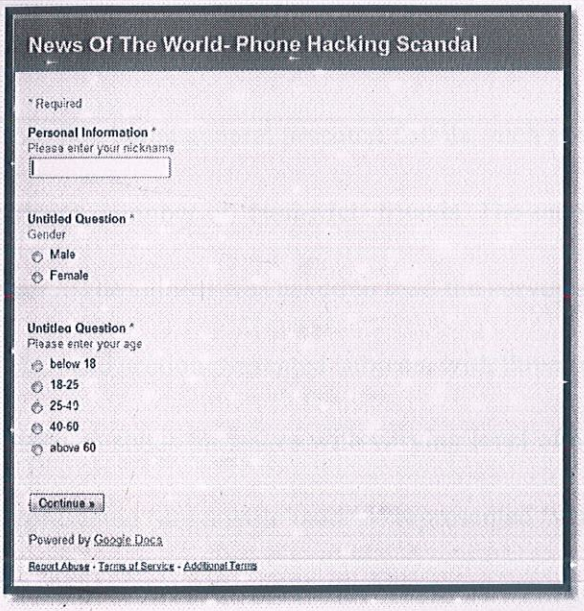

Figure 4. Screenshot 2 of Survey Section 1

Procedure

The subjects were asked to complete the survey subject matter, which consisted of three sections. The first being general personal details, such as nickname, age, gender, number of facebook friends, Number of 'Non-Met' friends. The second section presented the subjects with the survey story. The subject was asked to read the survey story to get an abstract knowledge of the survey. The third section presented subjects with three scenarios. Each of the scenarios put forward eight different status messages with varying level of hostility and aggressiveness, where '1' represented 'not hostile' and '8' represented 'very hostile'. The subject was asked to choose one of status messages, which they would be willing to put up as their own status message. The idea behind this was to know the pattern of the subject with respect to all other subjects; on what level of hostility would they choose in their own status messages.

Survey-Section 2

These were the three situations presented before the subjects:

Situation 1: For the past 4 years, the Scotland Yard had all the information regarding all sorts of

illegal activities regarding the phone hacking of politicians and celebrities done by News of the World. But, no action was taken against them.

Status 1: What else can be expected of the POLICE!! They all are the same.

Result: This message had rating of 2. Only 11(=10.57%) of the subjects selected this message.

Status 2: These bloody f**kers pledge to serve their country and now they are the ones involved in the scandals!!!

Result: This message had rating of 7. Only 16(=15.3%) of the subjects selected this message.

Status3: You cannot just blame the Scotland Yard. The whole system was involved!

Result: This message had rating of 3. Majority of subjects chose this as their status message. Around 49(=47.11%) of the subjects selected this message.

Status 4: It is because of these @$$/-/%L3$, that a country has to carry the stains of disgrace.

Result: This message had rating of 6. About 3(=2.88%) of the subjects selected this message.

Status 5: What the f**k! I don't give a damn about it!!!

Result: This message had rating of 5. Only 1(=0.9%) subject selected this message.

Status 6: They are nothing but a bunch of greedy dogs...SHAMELESS CREATURES!!!!!

Result: This message had rating of 4. Around 15(=14.42%) of the subjects selected this message.

Status 7: The Scotland Yard has lost the feeling of patriotism.

Result: This message had rating of 1. Around 9(=8.65%) of the subjects selected this message.

Status 8: M***er f**kers...They are incorrigible!!!

Result: This message had rating of 8. Only 0(=0%) subject selected this message.

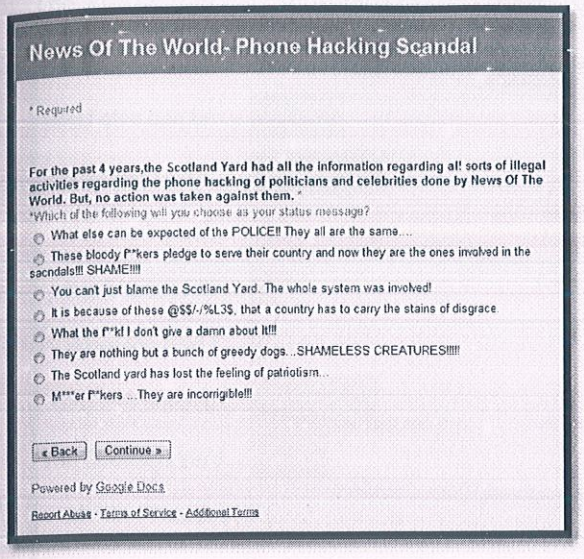

Figure 5. Screenshot for Survey Section 2 (Situation 1)

Table 2. Standard Deviation and Mean Flaming Rating of Status Messages for Situation 1

STATUS	RATING	NO. OF RESPONSES	MEAN	STANDARD DEVIATION
Status 1	2	12	24	27.98
Status 2	7	16	112	192.98
Status 3	3	49	147	13.6
Status 4	6	3	18	18.34
Status 5	5	1	5	2.16
Status 6	4	14	56	3.13
Status 7	1	11	11	70.24
Status 8	8	1	8	20

The following chart summarizes the choices of the subjects:

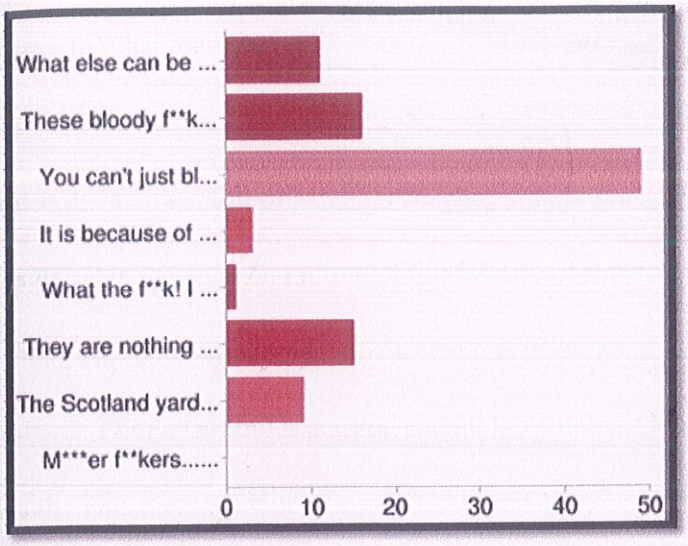

Figure 6. Number of Subjects Choosing a Status

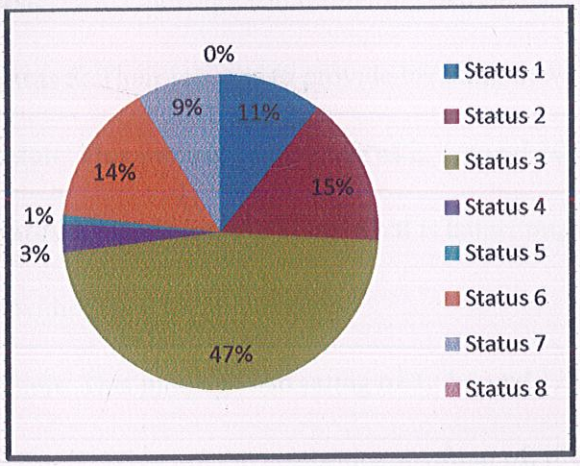

Figure 7. Percentage of Subjects Choosing a Status

(Survey-Section 2 Situation 1)

Situation 2: News of the World has been in the news for all wrong reasons. Their practice of intercepting voice mails and use of hidden cameras to find breaking news has sent out a wave of

doubt and distrust throughout the world.

Status 1: What the f**k!!! Where the hell is my personal space??

Result: This message had rating of 7. Around 5(=4.8%) of the subjects selected this message.

Status 2: Media is full of MORONS! They will do just ANYTHING to get stories

Result: This message had rating of 6. Majority of subjects chose this as their status message. Around 36(=34.6%) of subjects selected this message.

Status 3: Phone tapping is a crime and all the culprits should be put behind bars

Result: This message had rating of 3. Around 17 (=16.3%)of the subjects selected this message.

Status 4: Best selling newspaper! Bull***t!!!! This is what they do :@

Result: This message had rating of 5. Around 9(=8.65%) of the subjects selected this message.

Status 5: Their job was to provide breaking news. And that's EXACTLY what they did.

Result: This message had rating of 2. Around 10 (=9.6%) of the subjects selected this message.

Status 6: We deserve to know what is happening around us, they did a commendable job by providing us with all the news.

Result: This message had rating of 1. Around 12(=11.5%) of the subjects selected this message.

Status 7: What are the celebrities so afraid of, if they have not done anything wrong? Moreover, they should just let the damn media publish stories. After all, it will increase their own popularity!

Result: This message had rating of 4. Around 13(=12.5%) of the subjects selected this message.

Status 8: Huh!!! These celebrities are fu**ing UNBELIEVABLE!!!! If their dignity and personal space is so important to them, why do they end up making the headlines for all wrong

reasons????

Result: This message had rating of 8. Around 2 (=1.92%) of the subjects selected this message.

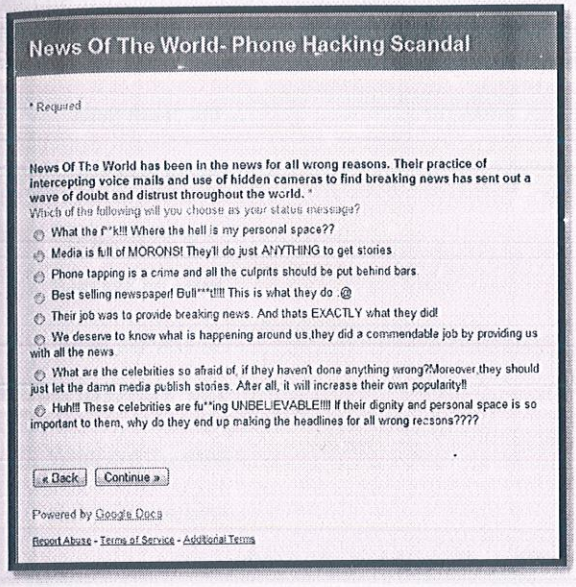

Figure 8. Screenshot for Section 2 (Situation 2)

STATUS	RATING	NO. OF RESPONSES	MEAN	STANDARD DEVIATION
Status 1	7	5	35	37.81
Status 2	6	37	222	113.3
Status 3	3	16	48	25
Status 4	5	10	50	5.62
Status 5	2	13	26	65.81
Status 6	1	11	11	116.18
Status 7	4	13	52	0.812
Status 8	8	2	16	28.12

Table 3. Standard Deviation and Mean Flaming Rating of Status Messages for Situation 2

The following chart summarizes the choices of the subjects

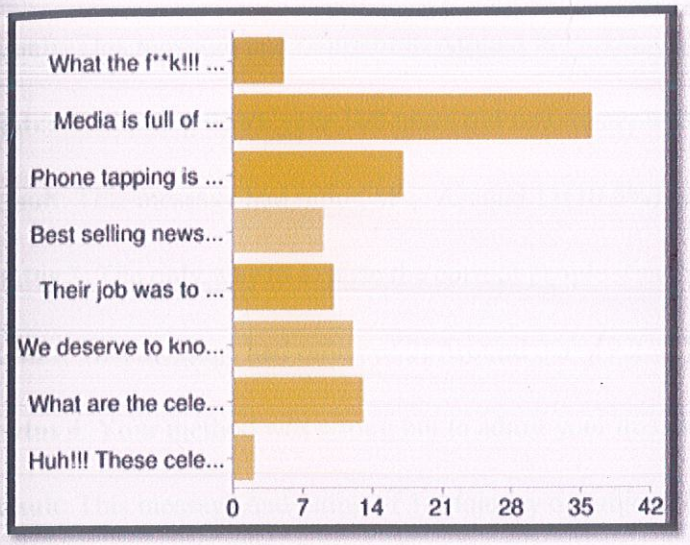

Figure 9. Number of Subjects Choosing a Status

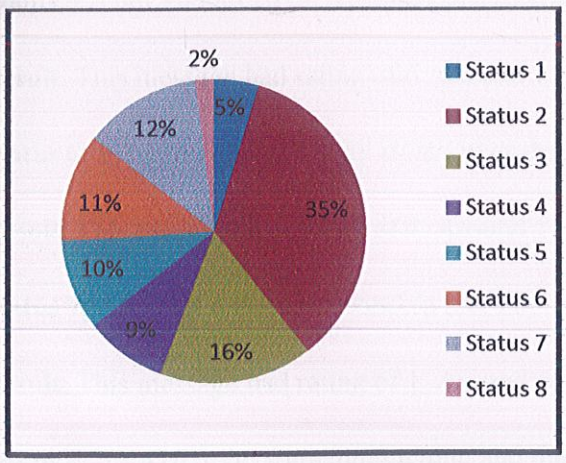

Figure 10. Percentage of Subjects Choosing a Status

(Survey-Section 2 Situation 2)

Situation 3: News of the world, apologized in the national newspaper, admitting the deliberate hacking into the voice mails of politicians and celebrities.

Status 1: F**K OFF!!!! We DONT want your f**king apology!!!!!

Result: This message had rating of 8. Around 7(=6.73%) of the subjects selected this message.

Status 2: Shutting down your 168 years old newspaper will not bring back the lost self-esteem.

Result: This message had rating of 5. Around 11(10.5%) of the subjects selected this message.

Status 3: The only way to expose the corrupt people was through this method. Well done indeed

Result: This message had rating of 2. Around 20(=19.23%) of the subjects selected this message.

Status 4: Your method was wrong but to admit your mistake was a courageous thing!!!

Result: This message had rating of 3. Majority of subjects chose this as their status message. Around 25(=24.03%) of subjects selected this message.

Status 5: They should all be punished severely. APOLOGY NOT ACCEPTED!

Result: This message had rating of 6. Around 18(=17.32%) of the subjects selected this message.

Status 6: It's more of a publicity stunt rather than an apology

Result: This message had rating of 4. Around 15(=14.42%) of the subjects selected this message.

Status 7: As far as it does not concern me, I do not give a damn

Result: This message had rating of 1. Around only 3(=2%) of the subjects selected this message.

Status 8: YEAH!!!!Do something wrong and then f**king APOLOGIZE !!!!!! As this is gonna make everything right!!

Result: This message had rating of 7. Around 5(=4%) subjects selected this message.

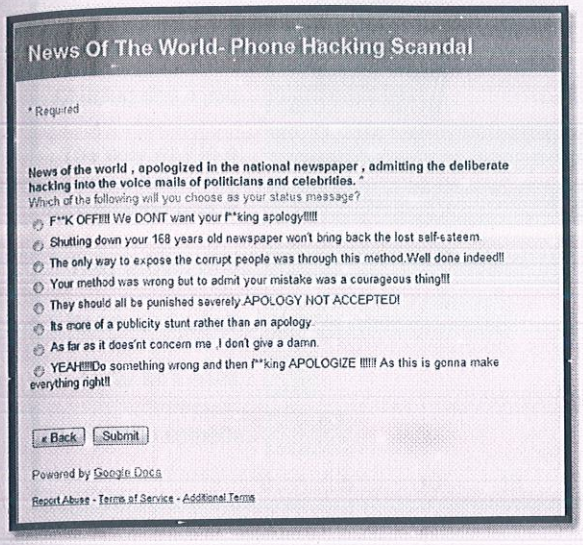

Figure 11. Screenshot for Section 2 (Situation 3)

Table 4. Standard Deviation and Mean Flaming Rating of Status Messages for Situation 3

STATUS	RATING	NO. OF RESPONSES	MEAN	STANDARD DEVIATION
Status 1	8	7	56	100.54
Status 2	5	12	60	7.48
Status 3	2	19	38	92.79
Status 4	3	24	72	35.13
Status 5	6	20	120	64.08
Status 6	4	16	64	0.7
Status 7	1	3	3	30.91
Status 8	7	6	42	46.7

The following chart summarizes the choices of the subjects:

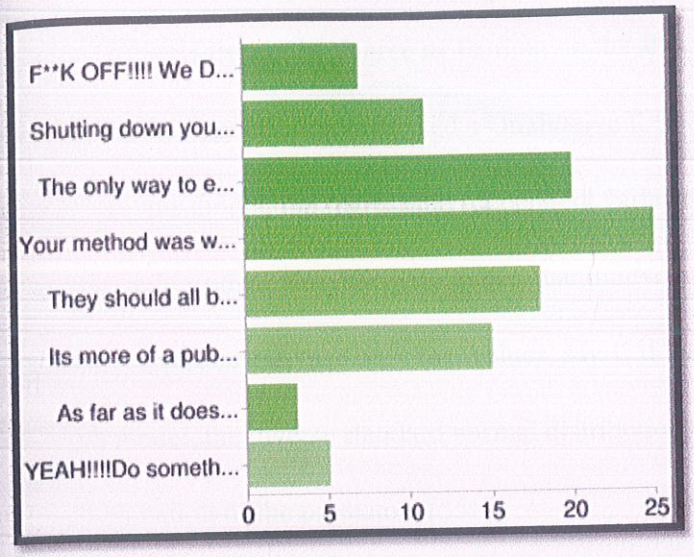

Figure 12. Number of Subjects Choosing a Status

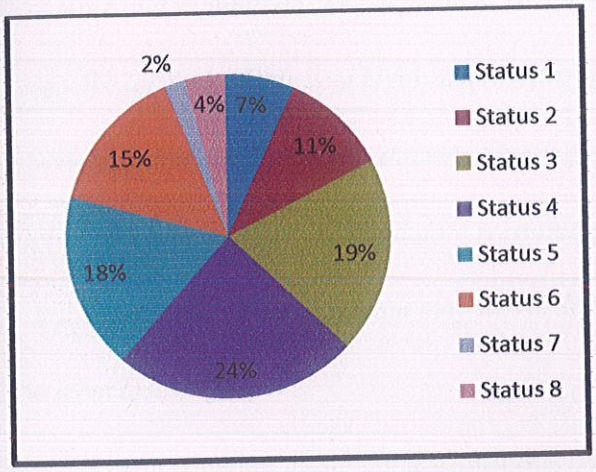

Figure 13. Percentage of Subjects Choosing a Status

(Survey-Section 2 Situation 3)

THE MODEL USED (PROBIT MODEL)

To explore further the relationship between the percentages of having non-met friends in the

Facebook friend's list on the degree of flaming on the above discussed situations as well as age and gender of the people, we have used a Qualitative Response Regression Model–The PROBIT MODEL. In this model, the regressand (dependent variable) is qualitative in nature while the regressors (independent variables) are either quantitative, qualitative or a mixture thereof. In this mode, the regressand can take only two values, say 1, if the condition is met and 0, if it is not. In the Probit model, the inverse standard normal distribution of the probability is modelled as a linear combination of the predictors [55].

Example: "Consider U.S presidential elections; assume that there are two political parties, democratic and republican. The dependent variable here is vote choice between the two political parties. We let Y=1, if this vote is for democratic and Y=0, if the vote is for republican. Some of the variables that can be used in the vote choice are growth rate of GDP, unemployment, inflation rate and whether the candidate is running for re-election etc. One other instance can be, in a Cricket tournament, a team may win or lose. We can take Y=1, if the team wins and Y=0, if the team loses" [16].

The regression equation used here is as follows:

FBD= Const + β1AGE + β2GEN + β3R1 + β4SQR1 + β5R2 + β6SQR2 + β7R3 + β8SQR3

where

FBD is Facebook users having non-met friends more than 10% of their Facebook friends.

R1, R2 and R3 is the rating of status messages pertaining to Situation 1,2 and 3 respectively, where rating of the status messages ranges from 1 to 8.

SQR1, SQR2 and SQR3 are the squared values of R1, R2 and R3 respectively.

AGE and GEN represents age and gender of the respondents.

$\beta 1$ to $\beta 8$ are coefficients different variables.

In the above said equation, the dependent variable, FBD, is a dichotomous variable and its values are 0 and 1. It will be 0, when respondent will have less than 10% of non-met friend in their friend's list, and 1, when the percentage of non-met friends are 10% or more. The reason of choosing 10% as a limit because after conducting surveys, when we calculated the average value of non-met friends, it comes to be about 10% of the average value of total friends in the friend's list.

The variable AGE and GEN are again dichotomous variable. In case of AGE, its value is 1, if the age group of the respondent is between 18 to 25, and for all other age groups, its value is set as 0. For the variable GEN, which represents gender, its value is taken as 1 if the respondent is female, while it is taken as 0 for male respondent. Here the values of different responses, like R1, R2 and R3, would range from 1 to 8. In the equation, SQR1, SQR2 and SQR3 represent squared values of R1, R2 and R3. The logic of taking squared values is it will differentiate different degrees of flaming by giving more weights to a higher degree of flaming. For example, in the case of the degree of flaming would be 7 and 8, its weights will become 49 and 64 respectively, hence clearly differentiating these two levels of flamings.

Null Hypothesis

"The null hypothesis typically corresponds to a general or default position. For example, the null hypothesis might be that there is no relationship between two measured phenomena or that a potential treatment has no effect. It is important to understand that the null hypothesis can

never be proven. A set of data can only ***reject*** *a null hypothesis or* ***fail to reject*** *it. For example, if comparison of two groups (e.g.: treatment, no treatment) reveals no statistically significant difference between the two, it does not mean that there is no difference in reality. It only means that there is not enough evidence to reject the null hypothesis (in other words, one fails to reject the null hypothesis)"[47].*

Null hypothesis in this case would be that the individual coefficients of all variables would be zero, as shown:

H0: $\beta1 = \beta2 = \beta3 = \beta4 = \beta5 = \beta6 = \beta7 = \beta8 = 0$

while the alternate hypothesis would be:

H1: $\beta1, \beta2 ..... \beta8 \neq 0$

The significance of keeping the coefficients of all the variables equals to zero in null hypothesis means that there is no relationship between the number of non-met friends in the in the friend's list of Facebook with the given variable, while a non-zero value will show that there is some relationship. If the sign of a coefficient is positive, it will show that there is a direct relationship between the dependent and independent variables, while the negative sign will show the indirect relationship between the two.

The result of the regression analysis is shown below in the Table 5.

Table 5. Regression Results

VARIABLE	C	AGE	GEN	R1	SQR1	R2	SQR2	R3	SQR3
COEFFICIENT	0.092056	0.652313	-0.572988*	-0.57544	0.069214*	-0.296739	0.041398	0.485895	-0.04967
STANDARD ERROR	1.155317	0.435841	0.283772	0.35735	0.040689	0.338047	0.040596	0.3800	0.04066
Z-STATISTIC	0.079681	1.496676	-2.019183	-1.610281	1.701034	-0.877806	1.019745	1.2785	-1.2215
PROBABILITY	0.9365	0.1345	0.0435	0.1073	0.0889	0.3800	0.3078	0.2011	0.2219

(*=significant at 10%, **=significant at 5%)

The result shown in the Table 5 depicts that except two variables–GEN and SQR1, not all other variables are significant even

at 10% of significance level. The variable GEN, which represents

gender is significant even at 5% level of significance, thus has to be considered while interpreting the result. The coefficient of GEN is negative, and if keep the value of GEN is equal to 1 (i.e., Female), its overall value is negative which shows that if the gender is female then the probability of having non-met friend in the Facebook friend's list is lower. This result is matched with our assumption that normally females have lesser number of non-met friends as compared to males and, therefore, the null hypothesis in this case that gender doesn't have any relationship with the level of non-met friends, gets rejected.

The other variable, which is found to be significant, is SQR1, which is related with the perception of the respondents towards working of the Police Department. Here the sign of the coefficient is positive which means that there is a direct relationship between flaming for the

Police Department with the number of non-met friends. If the number of non-met friends are more in the Facebook friend's list, then the chances of flaming for the Police Department is more. The variable R1 is also very close to a significance level of 10% and actually, it is significant at 10.73%. Therefore, the null hypothesis that there is no relationship between the numbers of non-met Facebook friends with the tendency of flaming towards Police Department is rejected and , hence showing that a person having more number of non-met friends is more prone towards hostility and is more likely to abuse the police.

It is immaterial to discuss all other variables because they are not found to be significant and in this case, we are failing to reject the null hypothesis that there is no relationship between these variables with the number of non-met Facebook friends. As far as the variable AGE is considered, almost all of the respondents belonged to the same age group, 18-25 years and this may be at the reason that why this variable appears to be insignificant. Moreover, if we look carefully, we will find that this variable is very close to 10% of significance level. For the remaining two variables (R2 and R3, and therefore, SQR2 and SQR3), our analysis fails to establish any relationship between them with the number of non-met Facebook friends.

CHAPTER 4

ANALYSIS OF RESULTS AND DISCUSSIONS

The survey results that we got from Eviews using the Probit model reveal that, the person having more number of Non-met friends is more hostile towards the three situations and has more probability of being a male rather than a female, which was as per our expectation. In situation 1, the case of police where the information was kept by them and not used against the corrupt practices of news agency. The participants chose the status, which had low hostility rating. It can be noted that only a small number of participants opted for moderately flamed status messages. In addition, only one participant voted for the most hostile message. The result after squaring the data was that the person having more number of non-met friends is more hostile and abusive towards this act on the part of police. This result was in accordance with our assumption that people, which are more interactive and friendly on social networking sites, i.e. having large number of friends as well as non-met friends tend to be more hostile towards the environment. In situation 2, the malicious practice of the news agency of intercepting the voice-mails and tapping of the telephones produced chaos all over and sent a wave of distrust throughout the country. The participants chose the status that had somewhat more than average hostility rating. In this case, only two of the participants voted for the most intimidating status message. The result in case of situation 2 did not meet our expectations as assumed. On the contrary, the results were insignificant as the data was way above the defined significance level. In situation 3,the apology made by the news agency on their part of tapping the phone calls and deliberately hacking into the lives of the people was a remarkable effort made by them in order to undo what they have

done but according to responses recorded by the participants it seemed futile and ineffective. While majority of the participants chose the status, which had less than average hostility rating, a greater part also choose the status message, which had remarkably high hostility rating. However, in case of situation 3 as well the result were again found to be insignificant. This result could be owed to the fact that our our study confined within boundaries. The number of participants was 104 which when compared to the number of active users of facebook (845 million) is a very meagre number. In addition, the data was highly skewed as the survey was conducted mostly in parts of South Asia and Mid-West United States of America and the majority of respondents were concentrated between 18-25 years who may respond differently than older respondents. The overall mentality depicted by subjects was almost same.

CHAPTER 5

IP MESSENGER SOFTWARE CODE:-

```
package jipmsg;


import jipmsg.domain.DataPacket;

import jipmsg.domain.IpMsgConstant;

import jipmsg.util.NetUtil;

import java.io.BufferedReader;

import java.io.FileReader;

import java.io.InputStreamReader;



public class IpMsgService {



    public static void sendMessage(String Text,String[] ips) throws Exception

    {

        Text=Text.trim();

        for(int i=0;i<ips.length;i++){

            DataPacket data=new DataPacket(IpMsgConstant.IPMSG_SENDMSG);

            data.setIp(ips[i]);
```

```
//format text here
String finaltext="";

//filter keywords input from file.
String[] check=new String[5];
BufferedReader br=new BufferedReader(new
FileReader("C:/Users/JohnDo/Desktop/JIpMsg/build/classes/jipmsg/list.txt"));
String s=br.readLine();
int x=0;
while(s!=null)
{
 check[x]=s;
 x++;
   s=br.readLine();
}
//end filter keywords
String[] text2=Text.split(" ");

        for(int a=0;a<text2.length;a++)
{
   for(int b=0;b<check.length;b++)
```

```
            {
                if(text2[a].equals(check[b]))
                {
                    String temptext="";
                    for(int c=0;c<text2[a].length();c++)
                    {
                      temptext+="*";
                    }
                    text2[a]=temptext;
                }
            }
          finaltext+=text2[a]+" ";
        }

        //end formatting
        data.setAdditional(finaltext);
        NetUtil.sendUdpPacket(data, data.getIp());
      }
    }
}
```

The above code is implemented on a LAN messenger, named "JIpMsg". This code identifies the flames in the message, removes them and places asterisks (*) in place of them. In the implementation of the code, firstly we use the trim() function to remove the blank spaces of the text to be sent. We create an array of string named check[], to input the keywords from a file which we want to block.We split the text to be sent using the split() function and put it into text2[] array. Then we compare the array text2[] with elements of array check[].If any of the keyword in the text is matched with the keywords in the file, asterisk is put in its place and the final message is sent to the recipient.

IMPLEMENTATION

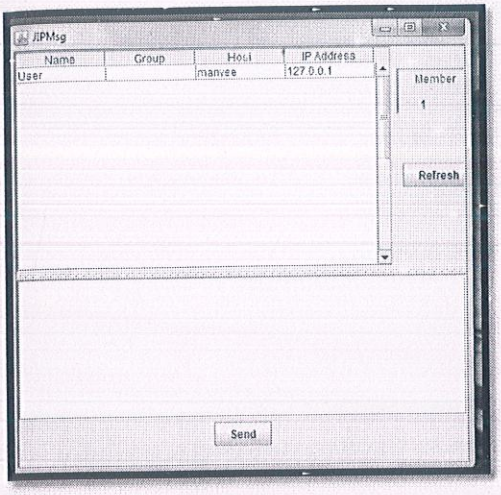

Figure 14.IP Messenger window

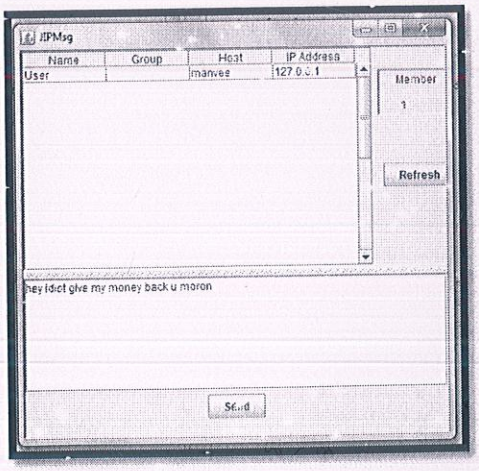

Figure 15.IP Msg with message

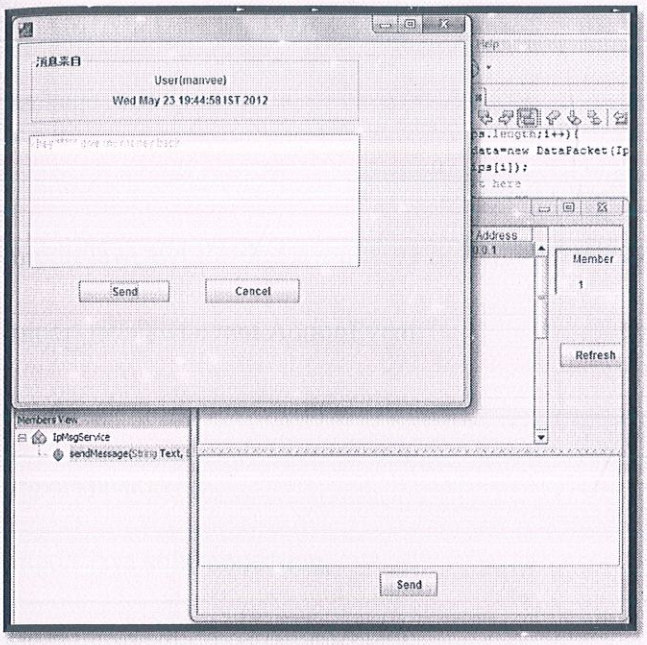

Figure 16.IP msg output

FLAMING DETECTOR CODE

```
package pro;


import java.awt.BorderLayout;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import java.io.*;
import java.sql.Connection;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.util.Scanner;
import javax.swing.JButton;
import javax.swing.JFileChooser;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JOptionPane;
import javax.swing.JPanel;
import javax.swing.JTextField;
public class Main extends JFrame implements ActionListener{
   JTextField filePath;
```

```
final JPanel inner,p;
int countWord,countP,countN;
public Main(){
   super("Flaming");
   countWord=countP=countN=0;
   setBounds(300,300,600,300);
   setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
   BorderLayout bframe=new BorderLayout();
   setLayout(bframe);
   BorderLayout bpanel=new BorderLayout();
   p=new JPanel(bpanel);
   inner=new JPanel();
   JLabel l=new JLabel("Please select the File");
   filePath=new JTextField(30);
   JButton browse=new JButton("Browse");
   JButton submit=new JButton("Submit");
   p.add(l,BorderLayout.NORTH);
   inner.add(filePath);
   inner.add(browse);
   p.add(inner,BorderLayout.CENTER);
   p.add(submit,BorderLayout.SOUTH);
```

```
    this.add(p,BorderLayout.CENTER);
    submit.addActionListener(this);
    browse.addActionListener(this);
    setVisible(true);
}
public void actionPerformed(ActionEvent e){
    if(e.getActionCommand().equals("Browse")){
        JFileChooser c=new JFileChooser();
        int r = c.showOpenDialog(new JFrame());
        if (r == JFileChooser.APPROVE_OPTION) {
            String fileName = c.getSelectedFile().getPath();
            filePath.setText(fileName);
        }
    }
    if(e.getActionCommand().equals("Submit")){
        try{
            read(new File(filePath.getText()));
            JPanel south=new JPanel();
            JButton p=new JButton("Positive");
            JButton n=new JButton("Negative");
            JButton per=new JButton("Flaming Percentage");
```

```
south.add(p);
south.add(n);
south.add(per);
inner.add(south,BorderLayout.SOUTH);
inner.repaint();
p.repaint();
p.addActionListener(new ActionListener() {
   public void actionPerformed(ActionEvent e) {
      try{
      Process process=Runtime.getRuntime().exec(
            "C:\\Windows\\notepad.exe Positive.txt");
      }catch(IOException ioexec){
         JOptionPane.showMessageDialog(null, "Error");
      }
   }
});
n.addActionListener(new ActionListener() {
   public void actionPerformed(ActionEvent e) {
      try{
      Process process=Runtime.getRuntime().exec(
            "C:\\Windows\\notepad.exe Negative.txt");
```

```
                }catch(IOException ioexec){
                    JOptionPane.showMessageDialog(null, "Error");
                }
            }
        });
        per.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                System.out.println(countWord+" "+countN);
                double res=(double)(countN*100)/(double)countWord;
                System.out.println(res);
                JOptionPane.showMessageDialog(null,"Flaming Percentage is
"+res,"Flaming:",JOptionPane.INFORMATION_MESSAGE);
            }
        });
        this.validate();
        this.repaint();
      }catch(Exception ex){
        JOptionPane.showMessageDialog(
            this, "Can't read","Sorry",JOptionPane.ERROR_MESSAGE);
        ex.printStackTrace();
      }
```

```
    }
}
public void read(File f)throws Exception{
    Scanner cin=new Scanner(f);
    PrintWriter cout1=new PrintWriter(new BufferedWriter(new FileWriter("Positive.txt")));
    PrintWriter cout2=new PrintWriter(new BufferedWriter(new FileWriter("Negative.txt")));
    String[] in;
    String query;
    PreparedStatement statement;
    ResultSet rs;
    while(cin.hasNext()){
        in=cin.nextLine().split(" ");
        countWord+=in.length;
        DatabaseConnection db=new DatabaseConnection();
        Connection c=db.getDatabaseConnection();
        for(int x=0;x<in.length;x++){
            query="select * from positive where word=?";
            statement=c.prepareStatement(query);
            statement.setString(1, in[x]);
            rs=statement.executeQuery();
            if(rs.next()){
```

```
                cout1.println(in[x]);
                countP++;
            }
            query="select * from negative where word=?";
            statement=c.prepareStatement(query);
            statement.setString(1, in[x]);
            rs=statement.executeQuery();
            if(rs.next()){
                cout2.println(in[x]);
                countN++;
            }
        }
    }
    cout1.flush();
    cout2.flush();
  }
  public static void main(String[] args) {
    Main m=new Main();
  }
}
```

IMPLEMENTATION

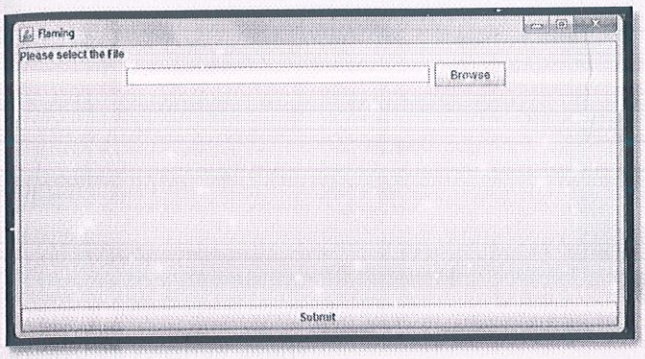

Figure 17. Flaming detector window

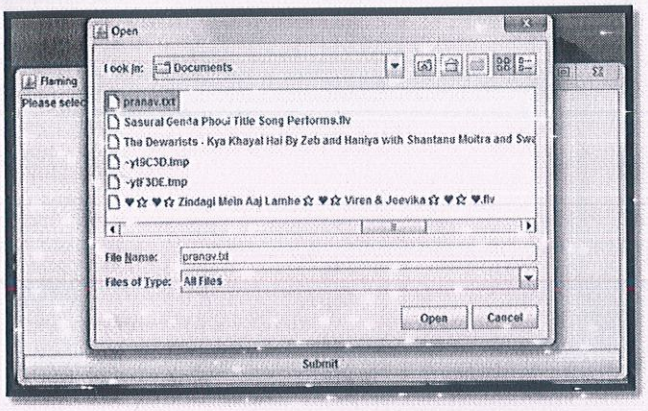

Figure 18. Browse window

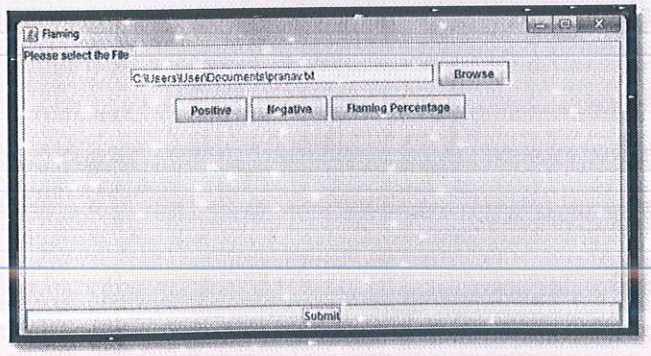

Figure 19. Message file

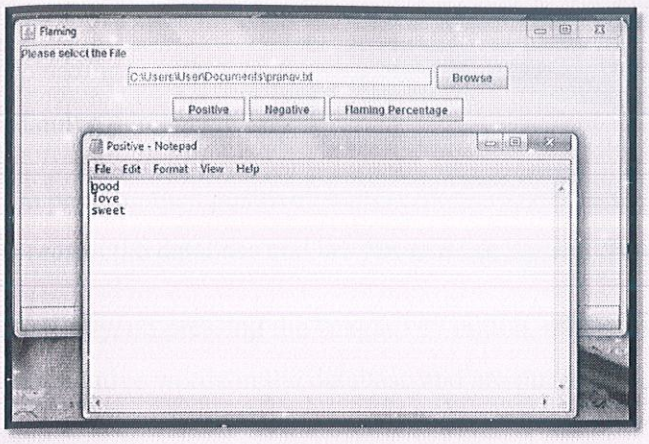

Figure 20. Positive words

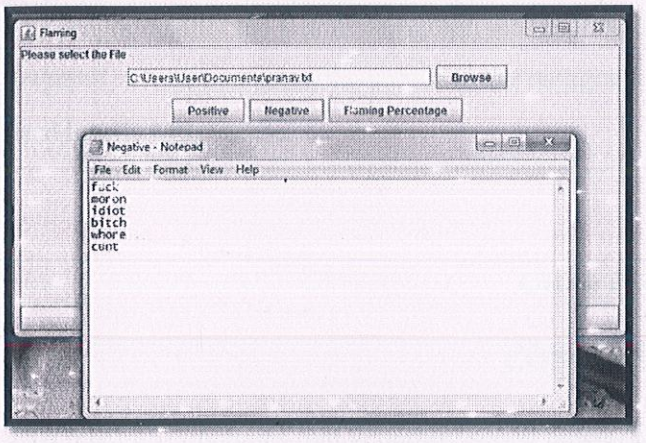

Figure 21. Negative words

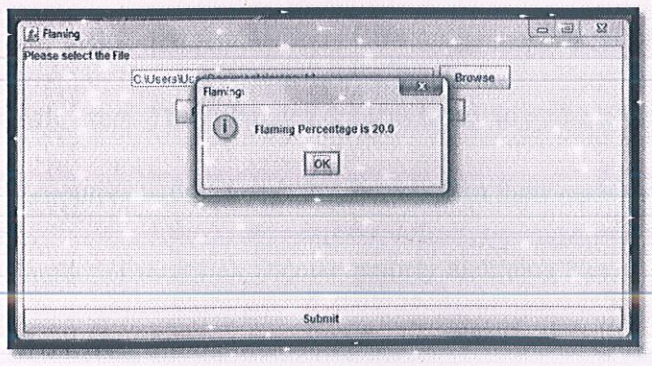

Figure 22. Flaming Percentage

The above code prompts the user to upload a file containing any sentence or paragraph. On uploading the file and pressing the submit button, three new buttons: Positive, Negative and Flaming percentage appear.

On pressing the "positive" button, all the words in the uploaded file are checked with the positive words in the database and are put in a file named "Positive.txt".

Similarly, on pressing the "negative" button, all the words in the uploaded file are checked with the negative words in the database and are put in a file named "Positive.txt".

And the "flaming percentage" button calculates the flaming percentage using the negative words earlier found.

The program splits the whole paragraph into individual words. Then a query statement is prepared, which compares the values in the paragraph with those in the database tables. Database used here is MS Access.

CHAPTER 6

CONCLUSION

This research concludes that generally social networking sites users tend to restrain themselves from responding to the highly flamed messages. The above analysis conducted draws the conclusion that female users have lesser number of 'Not-Met' friends on their friend lists than male users. Thus, females are less likely to make hostile and incendiary remarks during any computer mediated communication than their male counterparts. Secondly, people having more number of facebook friends majorly including Non-met friends are more intimidating on social networking sites during computer-mediated communication as well as through their reactions and responses towards different situations. The research also revealed that people preferred

flamed statuses for their own status but only up to a certain level of flaming. This indicates that users are aware about their social reputation and even though they might want to flame but they prefer to avoid or use a moderately flamed message.

These results will help researchers understand that even though computer mediated communication have more chances of flaming as compared to face-to-face communication, more use of social media will lessen the chances of flaming and will provide a better environment for users from different socio-cultural backgrounds.

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