SOCIAL AND INFORMATION NETWORKS

PROJECT REPORT

SOCIAL AND INFORMATION NETWORKS (CSE-3021)

By:

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ABSTRACT

The project deals with "*A STUDY OF MEME PROPAGATION: STATISTICS, RATES, AUTHORITIES AND SPREAD*".

By studying this project, we will use the technique of meme tracking system to reciprocate the concept of how phrases spread across news and the social media. The observation of how does the meme gains momentum and loses popularity has been recorded in our file. We begin by looking at various statistics from the frequency data to understand differences between the lifetime of memes across subject matter and media source, and look for methods to predict how the shape of the graph will change over time. Additionally, we consider the graph of news sources and directed edges from the sources that are hyperlinked in the original article. Here we find the top authoritative news sources and blogs. Additionally, we built a theoretical example to determine the actual influence network. Finally, we consider a cascade network on this graph to determine whether the SIS model is reasonable to model meme propagation.

Our main aim through the project of "*A STUDY OF MEME PROPAGATION: STATISTICS, RATES, AUTHORITIES AND SPREAD*" is to rightfully predict the winner of LOK SABHA Elections that is going to held in the year of 2019.

KEYWORDS:

- ✓ Meme-tracking
- ✓ Blogs
- ✓ News media
- ✓ News cycle
- ✓ Information Diffusion
- ✓ Social Networks.

INTRODUCTION:

Social networks have become increasingly popular and studied over recent years. In addition to the typical friendship networks (such as Facebook or MySpace), social networks have emerged in various fields: photo sharing, online game playing, and even the news media. We seek to explore the process of news information diffusion through the study of meme propagation. In this paper, a meme represents a phrase that travels through the news blog network. We hope to observe key characteristics of the propagation in order to understand and appropriately model the propagation of memes in online news cycle.

A STUDY OF MEME PROPAGATION

A meme is an idea, behaviour, or style that spreads from person to person within a culture, often with the aim of conveying a particular phenomenon, theme, or meaning represented by the meme. A meme acts as a unit for carrying cultural ideas, symbols, or practices, that can be transmitted from

one mind to another through writing, speech, gestures, rituals, or other imitable phenomena with a mimicked theme. Supporters of the concept regard memes as cultural analogues to genes in that they self-replicate, mutate, and respond to selective pressures.

Proponents theorise that memes are a viral phenomenon that may evolve by natural selection in a manner analogous to that of biological evolution. Memes do this through the processes of variation, mutation, competition, and inheritance, each of which influences a meme's reproductive success. Memes spread through the behaviour that they generate in their hosts. Memes that propagate less prolifically may become extinct, while others may survive, spread, and mutate. Memes that replicate most effectively enjoy more success, and some may replicate effectively even when they prove to be detrimental to the welfare of their hosts.

AIM OF OUR PROJECT

The aim of our project about social media memes based on global level is to efficiently study and report on the use and consequences of social media for peoples all around the world.
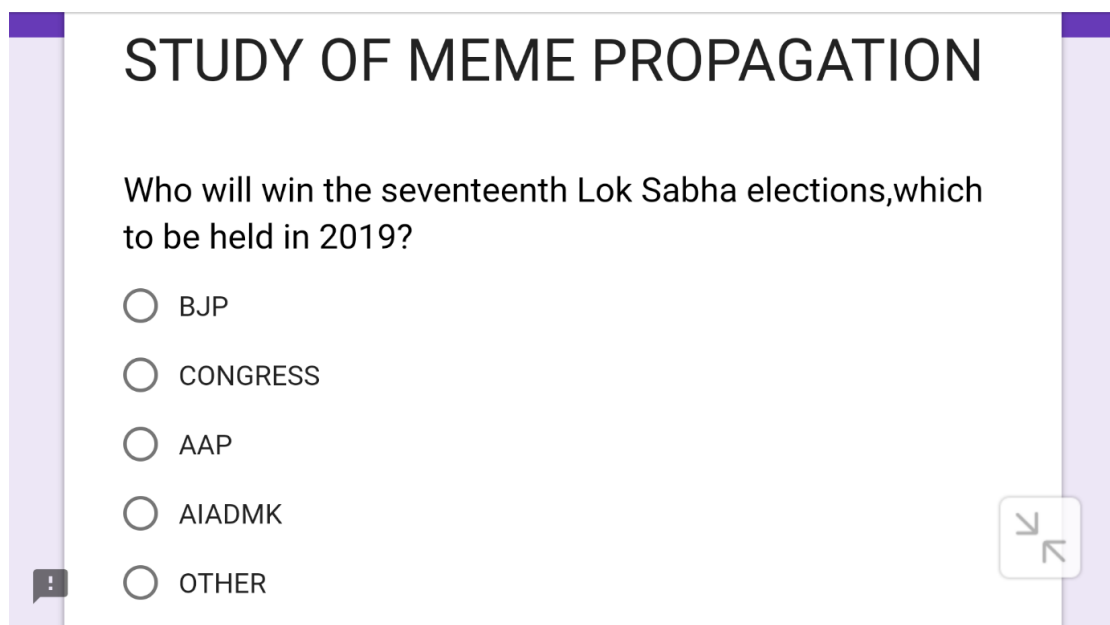
The second most important aim of our project is to rightfully predict the winners of LOK SABHA Elections of 2019 among the participating parties such as BHARAT JANTA PARTY, CONGRESS, AAM ADMI PARTY, ALL INDIA ANNA DRAVIDA MUNNETRA KAZHAGAM and other remaining parties.

METHODOLOGY OF OUR PROJECT

STEP 1:
IDENTIFYING A RELIABLE SOURCE OF COLLECTING THE DATA ON THE BASIS ON THE VIEWS OF THE PEOPLE REGARDING THEIR PREFERENCE ABOUT THE MEMES ASSOCIATED TO POLITICAL INFLUENCE AND THEIR OPINIONS ON THE LOK SABHA ELECTIONS OF 2019.
GOOGLE DOCUMENTATION FORMS

○ AAP

○ AIADMK

○ OTHER

Do you think that Political memes plays a vital role in elections?

○ Yes

○ No

○ Maybe
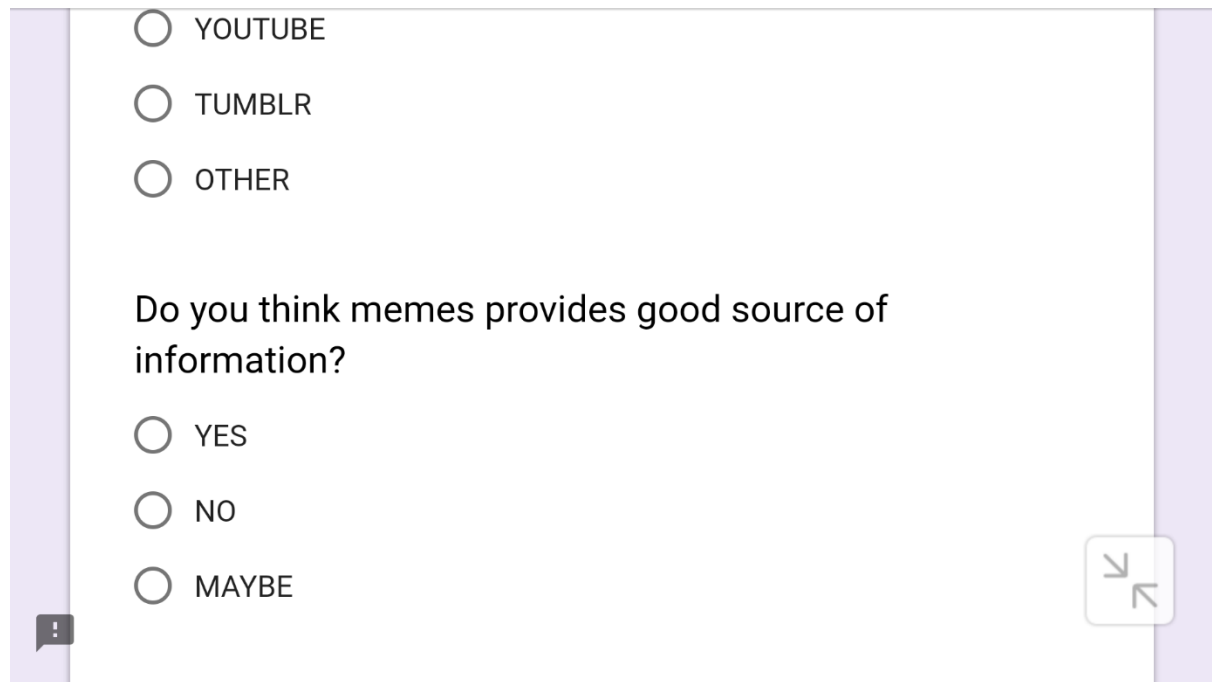
○ No

○ Maybe

Where do we frequently encounter with memes?

○ FACEBOOK

○ TWITTER

○ YOUTUBE

○ TUMBLR

○ OTHER

○ YOUTUBE

○ TUMBLR

○ OTHER
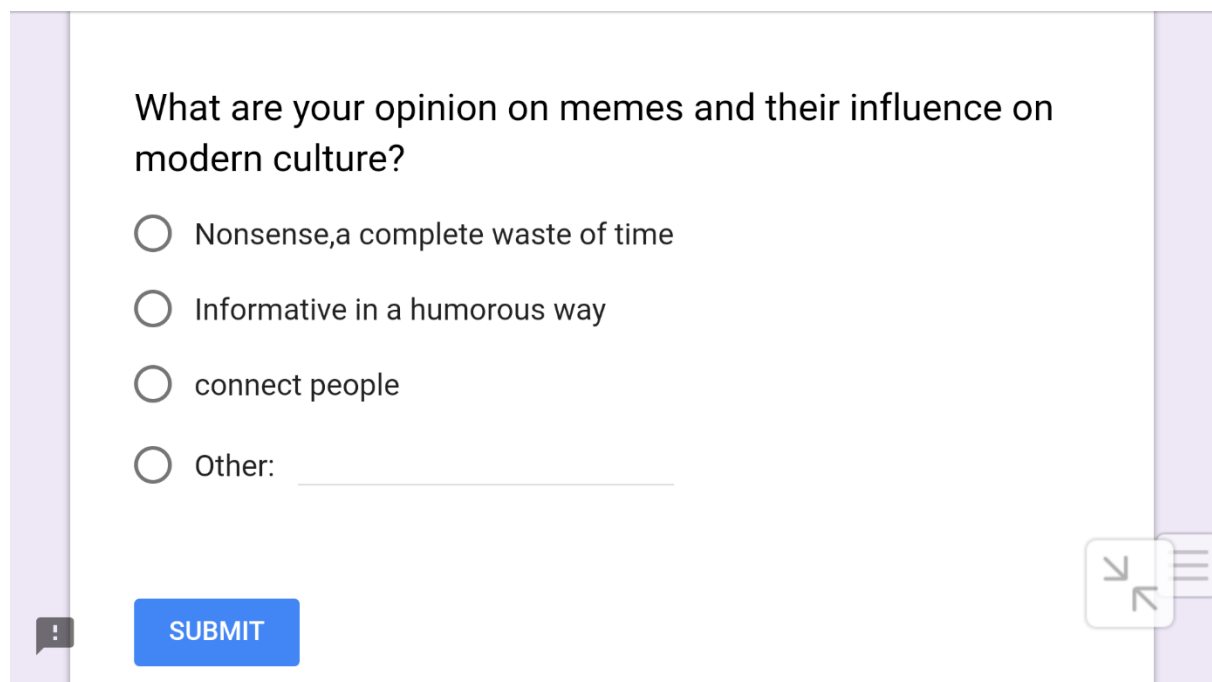
Do you think memes provides good source of information?

○ YES

○ NO

○ MAYBE

What are your opinion on memes and their influence on modern culture?

○ Nonsense,a complete waste of time

○ Informative in a humorous way

○ connect people

○ Other: _____

SUBMIT

STEP 2:
THE SECOND STEP OF THIS PROJECT WAS TO STORE THE DATA THAT WE COLLECTED THROUGH THE CIRCULATION OF GOOGLE DOCUMENTATION FORMS AND ANALYSING THE PEOPLE'S RESPONSES TO PROVIDE A STATISTICAL REPRESENTATION OF THEIR OPINIONS.

Here is the statistical result of our research:

Who will win the seventeenth Lok Sabha elections, which to be held in 2019?

144 responses

- BJP
- CONGRESS
- AAP
- AIADMK
- OTHER

8.3%
19.4%
11.8%
50%
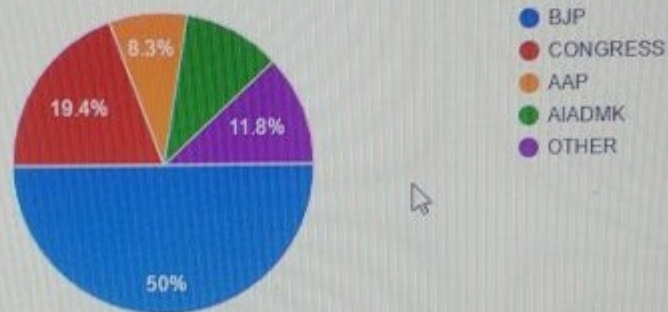
Do you think that Political memes plays a vital role in elections?

145 responses

- Yes
- No
- Maybe

18.6%
22.1%
59.3%
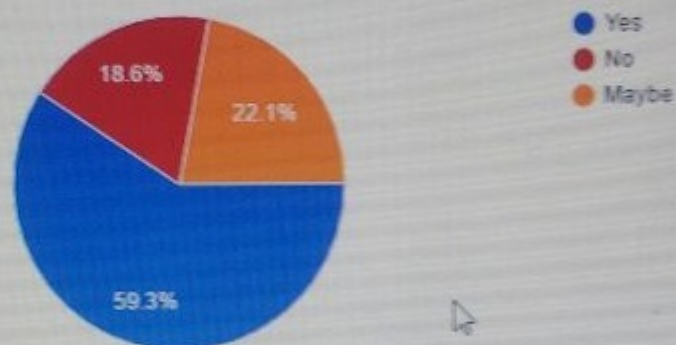
Where do we frequently encounter with memes?

145 responses

- ● FACEBOOK
- ● TWITTER
- ● YOUTUBE
- ● TUMBLR
- ● OTHER

11%
9.7%
22.8%
12.4%
44.1%
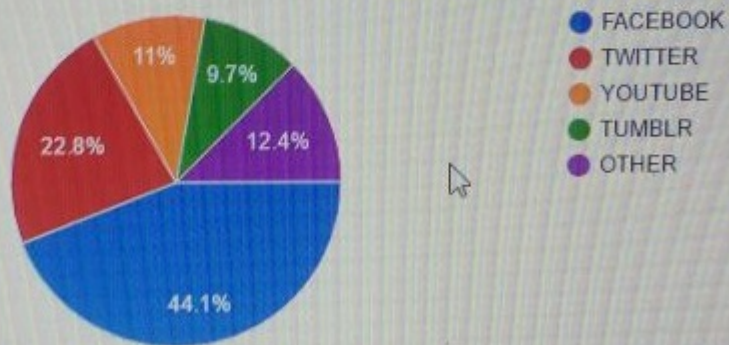
What are your opinion on memes and their influence on modern culture?

145 responses

- ● Nonsense,a complete waste of time
- ● Informative in a humorous way
- ● connect people
- ● Sometimes its informative , sometimes complete waste of time
- ● A good way of entertainment

21.4%
54.5%
22.8%

Do you think memes provides good source of information?

145 responses

- ● YES
- ● NO
- ● MAYBE

28.3%

24.1%

47.6%

Graphviz

Question 1:

Question 2:

Question 3:

Question 4:
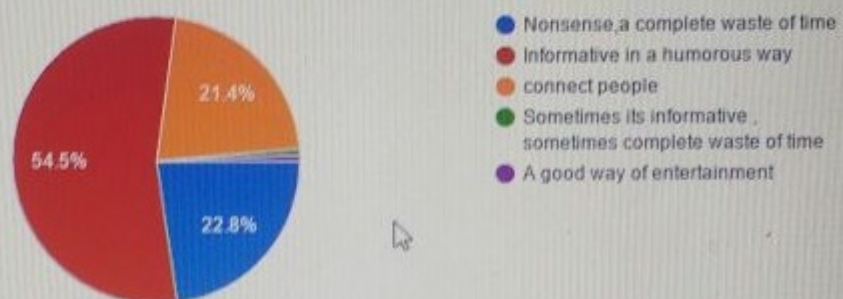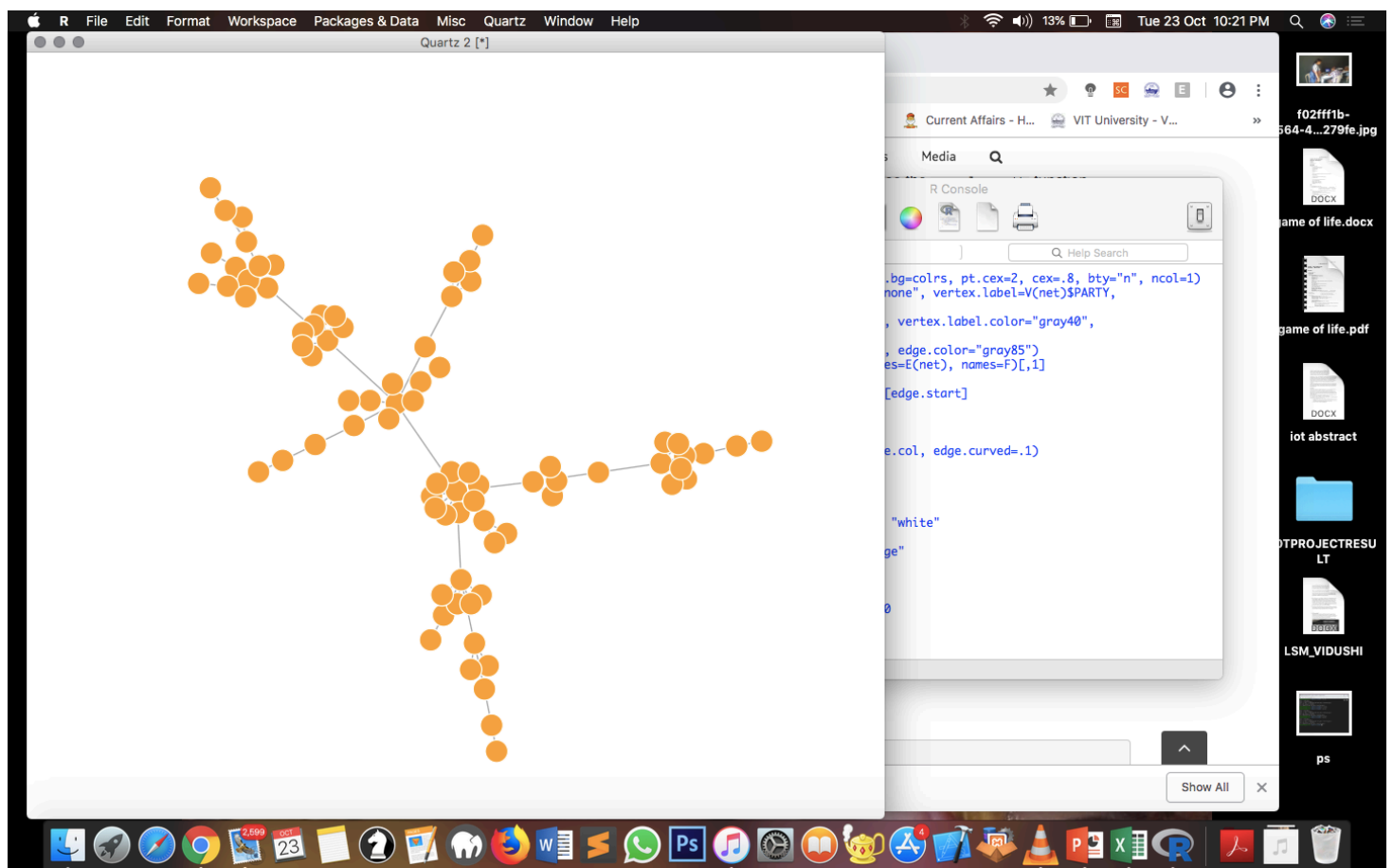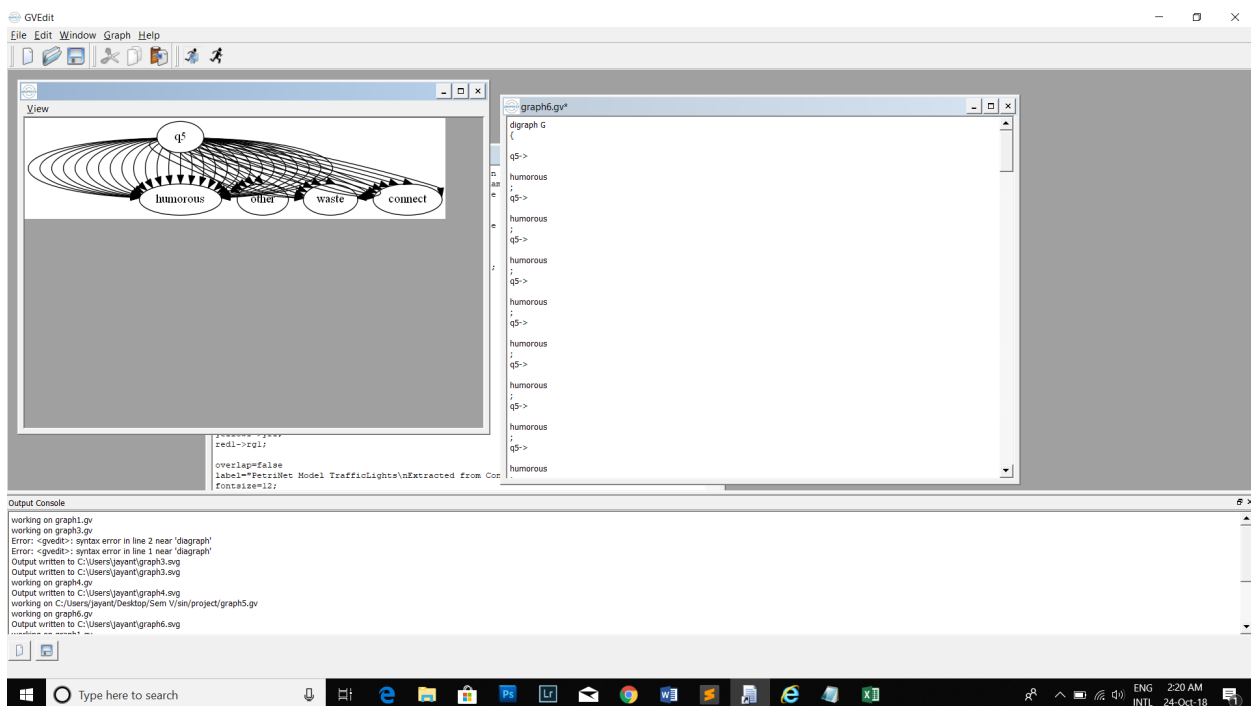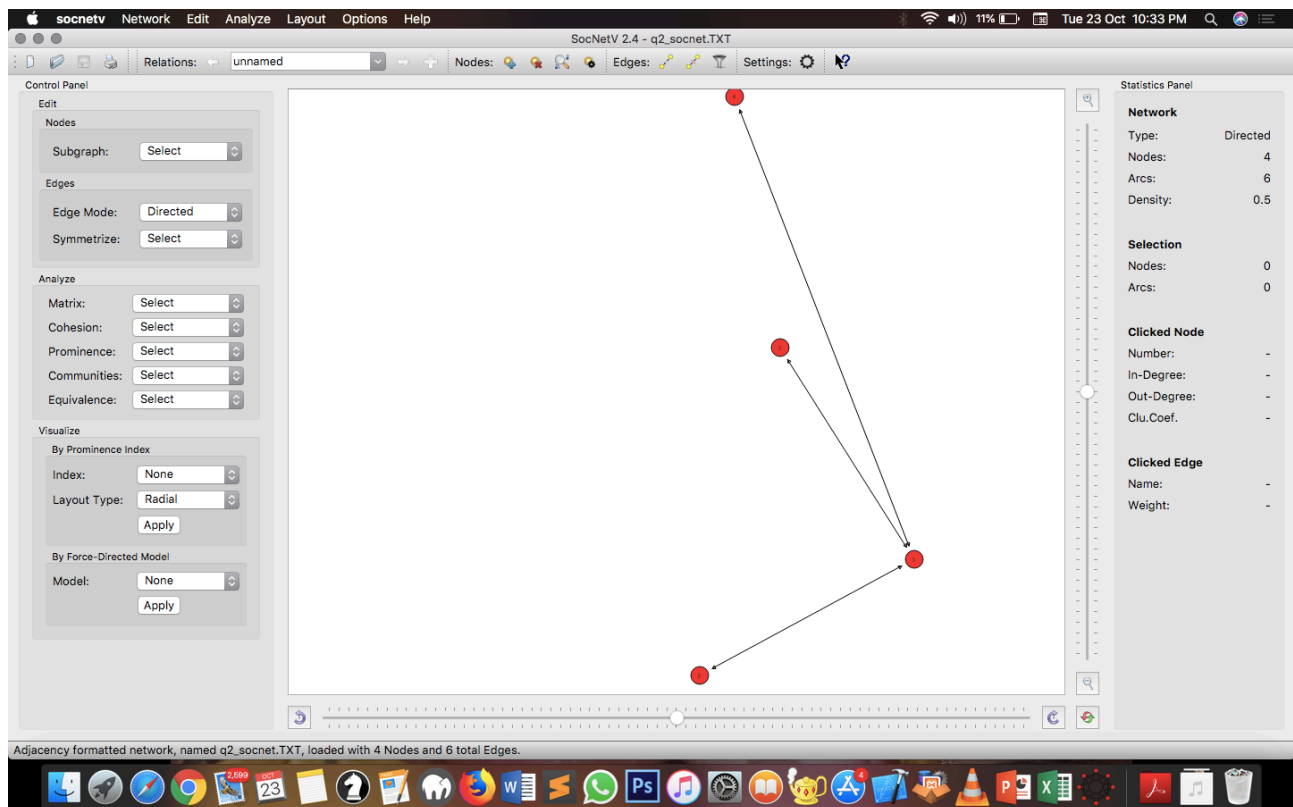
Question 5:

R:

R-Console

nodes <- read.csv("Dataset1-Media-Example-NODES.csv", header=T, as.is=T)

> links <- read.csv("Dataset1-Media-Example-EDGES.csv", header=T, as.is=T)

> head(nodes)

   id   PARTY

1 s01 QUESTION

2 s02   BJP

```
3 s03 CONGRESS
4 s04     AAP
5 s05   AIADMK
6 s06   OTHERS
> head(links)
  from  to      type
1  s01 s02 hyperlink
2  s01 s02 hyperlink
3  s01 s02 hyperlink
4  s01 s02 hyperlink
5  s01 s02 hyperlink
6  s01 s02 hyperlink
> nrow(nodes); length(unique(nodes$id))
[1] 6
[1] 6
> nrow(links); nrow(unique(links[,c("from", "to")]))
[1] 50
[1] 5
> library(igraph)
> net <- graph_from_data_frame(d=links, vertices=nodes, directed=T)
> class(net)
[1] "igraph"
> net
IGRAPH 35c989a DN-- 6 50 --
+ attr: name (v/c), PARTY (v/c), type (e/c)
+ edges from 35c989a (vertex names):
 [1] s01->s02 s01->s02 s01->s02 s01->s02 s01->s02 s01->s02 s01->s02
 [8] s01->s02 s01->s02 s01->s02 s01->s02 s01->s02 s01->s02 s01->s02
[15] s01->s02 s01->s02 s01->s02 s01->s02 s01->s02 s01->s02 s01->s02
[22] s01->s02 s01->s02 s01->s02 s01->s02 s01->s02 s01->s02 s01->s02
[29] s01->s02 s01->s02 s01->s02 s01->s03 s01->s03 s01->s03 s01->s03
[36] s01->s03 s01->s03 s01->s03 s01->s03 s01->s03 s01->s03 s01->s04
[43] s01->s04 s01->s04 s01->s05 s01->s06 s01->s06 s01->s06 s01->s06
[50] s01->s06
> plot(net, edge.arrow.size=.2, edge.curved=0,
+     vertex.color="orange", vertex.frame.color="#555555",
```

```
+       vertex.label=V(net)$TYPE, vertex.label.color="black",
+       vertex.label.cex=.7)
> plot(net, vertex.shape="none", vertex.label=V(net)$media,
+       vertex.label.font=2, vertex.label.color="gray40",
+       vertex.label.cex=.7, edge.color="gray85")
>       net.bg <- sample_pa(80)
> V(net.bg)$size <- 8
> V(net.bg)$frame.color <- "white"
> V(net.bg)$color <- "orange"
> V(net.bg)$label <- ""
> E(net.bg)$arrow.mode <- 0
> plot(net.bg)
> plot(net, edge.arrow.size=.2, edge.curved=0,
+       vertex.color="orange", vertex.frame.color="#555555",
+       vertex.label=V(net)$TYPE, vertex.label.color="black",
+       vertex.label.cex=.7)
> plot(net, vertex.shape="none", vertex.label=V(net)$media,
+       vertex.label.font=2, vertex.label.color="gray40",
+       vertex.label.cex=.7, edge.color="gray85")
>       net.bg <- sample_pa(80)
> plot(net, edge.arrow.size=.2, edge.curved=0,
+       vertex.color="orange", vertex.frame.color="#555555",
+       vertex.label=V(net)$PARTY, vertex.label.color="black",
+       vertex.label.cex=.7)
```

Question 1 :

```
library(igraph)
familynetwork<-
 graph(edges=c("Q1","BJP","Q1","CONGRESS","Q1","AIADMK","Q1","AAP","Q1",
OTHERS",),directed=FALSE)
plot(familynetwork)

> nodes <- read.csv("Dataset1-Media-Example-NODES.csv", header=T,
 as.is=T)
> links <- read.csv("Dataset1-Media-Example-EDGES.csv", header=T,
 as.is=T)
> head(nodes)
    id     PARTY
1 s01 QUESTION
```

```
2 s02      BJP
3 s03 CONGRESS
4 s04      AAP
5 s05   AIADMK
6 s06   OTHERS
> head(links)
  from  to      type
1  s01 s02 hyperlink
2  s01 s02 hyperlink
3  s01 s02 hyperlink
4  s01 s02 hyperlink
5  s01 s02 hyperlink
6  s01 s02 hyperlink
> nrow(nodes); length(unique(nodes$id))
[1] 6
[1] 6
> nrow(links); nrow(unique(links[,c("from", "to")]))
[1] 50
[1] 5
> library(igraph)
> net <- graph_from_data_frame(d=links, vertices=nodes, directed=T)
> class(net)
[1] "igraph"
> net
IGRAPH 9496961 DN-- 6 50 --
+ attr: name (v/c), PARTY (v/c), type (e/c)
+ edges from 9496961 (vertex names):
 [1] s01->s02 s01->s02 s01->s02 s01->s02 s01->s02 s01->s02 s01->s02
 [8] s01->s02 s01->s02 s01->s02 s01->s02 s01->s02 s01->s02 s01->s02
[15] s01->s02 s01->s02 s01->s02 s01->s02 s01->s02 s01->s02 s01->s02
[22] s01->s02 s01->s02 s01->s02 s01->s02 s01->s02 s01->s02 s01->s02
[29] s01->s02 s01->s02 s01->s02 s01->s03 s01->s03 s01->s03 s01->s03
[36] s01->s03 s01->s03 s01->s03 s01->s03 s01->s03 s01->s03 s01->s04
[43] s01->s04 s01->s04 s01->s05 s01->s06 s01->s06 s01->s06 s01->s06
[50] s01->s06
> plot(net, edge.arrow.size=.2, edge.curved=0,
+
+      vertex.color="orange", vertex.frame.color="#555555",
+
+      vertex.label=V(net)$PARTY, vertex.label.color="black",
+
+      vertex.label.cex=.7)
> plot(net, edge.arrow.size=.4, edge.curved=.1)
> colrs <- c("gray50", "tomato", "gold")
> V(net)$color <- colrs[V(net)$media.type]
> # Set node size based on audience size:
> V(net)$size <- V(net)$audience.size*0.7
> V(net)$label.color <- "black"
```

```
> V(net)$label <- NA
> E(net)$width <- E(net)$weight/6
> E(net)$arrow.size <- .2
> E(net)$edge.color <- "gray80"
> E(net)$width <- 1+E(net)$weight/12
> plot(net, edge.color="orange", vertex.color="gray50")
> plot(net)
> legend(x=-1.5, y=-1.1,
 c("BJP","CONGRESS","AAP","AIADMK","OTHERS","QUESTION"), pch=21,
+        col="#777777", pt.bg=colrs, pt.cex=2, cex=.8, bty="n", ncol=1)
> plot(net, vertex.shape="none", vertex.label=V(net)$PARTY,
+       vertex.label.font=2, vertex.label.color="gray40",
+       vertex.label.cex=.7, edge.color="gray85")
> edge.start <- ends(net, es=E(net), names=F)[,1]
> edge.col <- V(net)$color[edge.start]
> plot(net, edge.color=edge.col, edge.curved=.1)
> net.bg <- sample_pa(80)
> V(net.bg)$size <- 8
> V(net.bg)$frame.color <- "white"
> V(net.bg)$color <- "orange"
> V(net.bg)$label <- ""
> E(net.bg)$arrow.mode <- 0
> plot(net.bg)
```
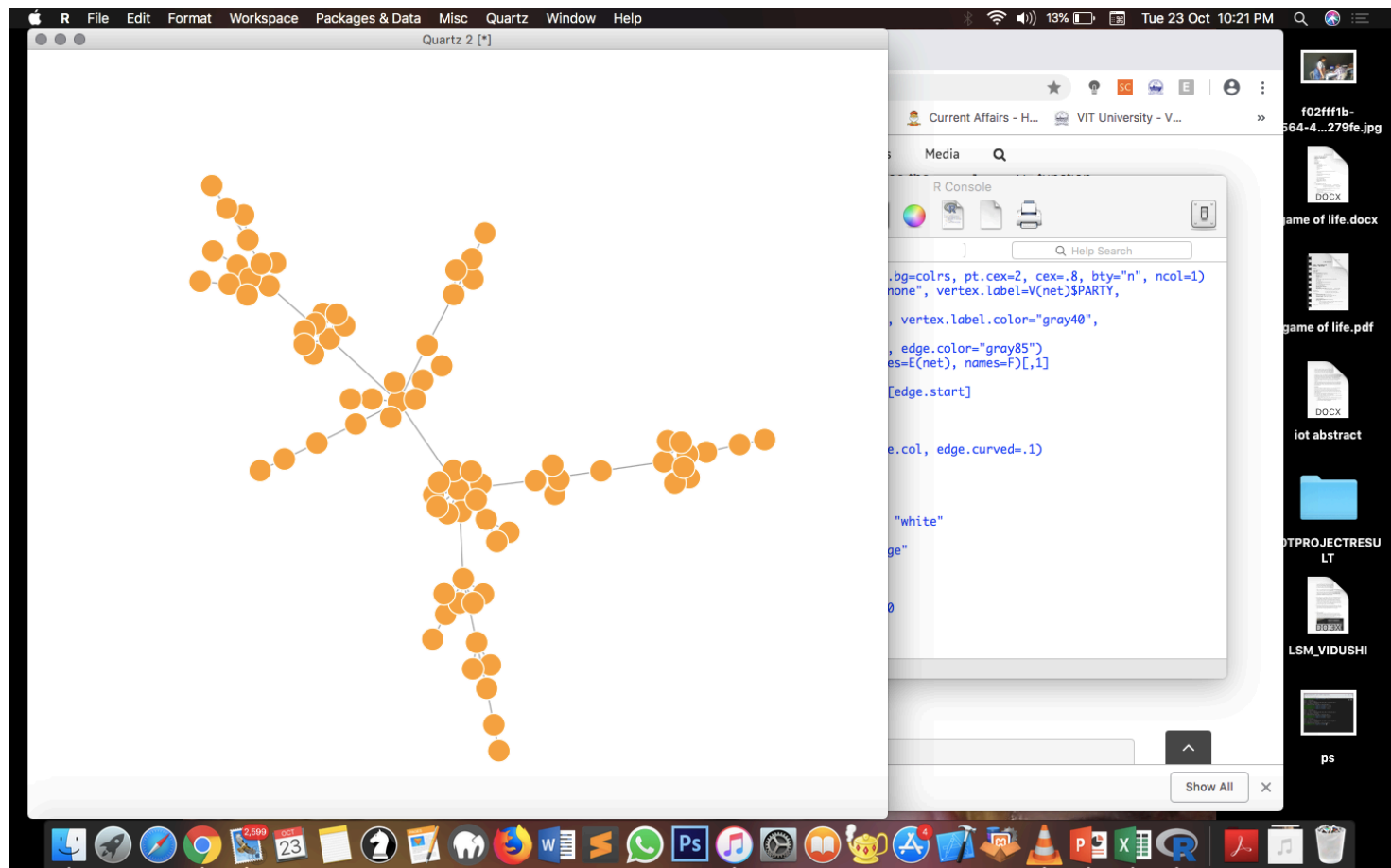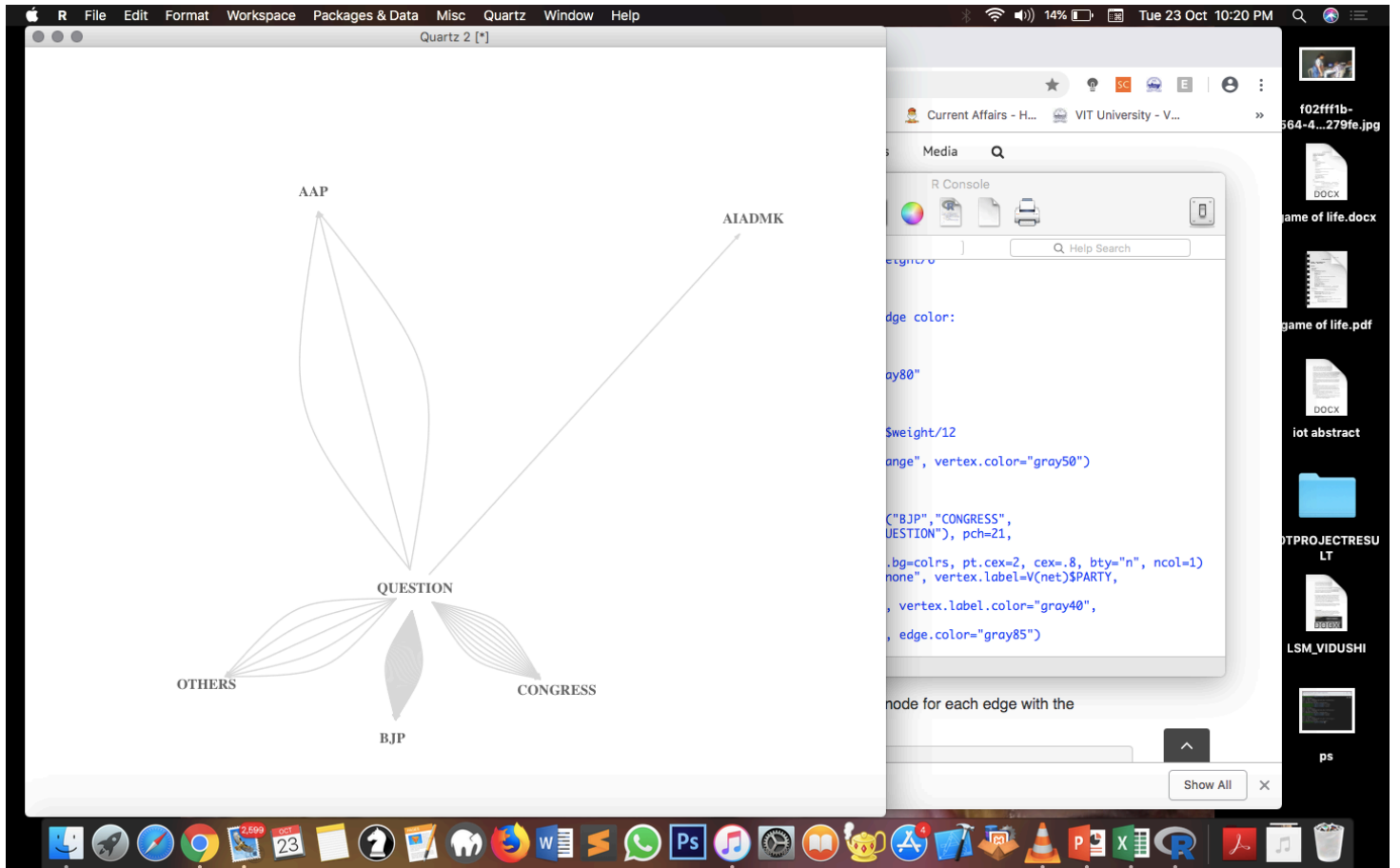
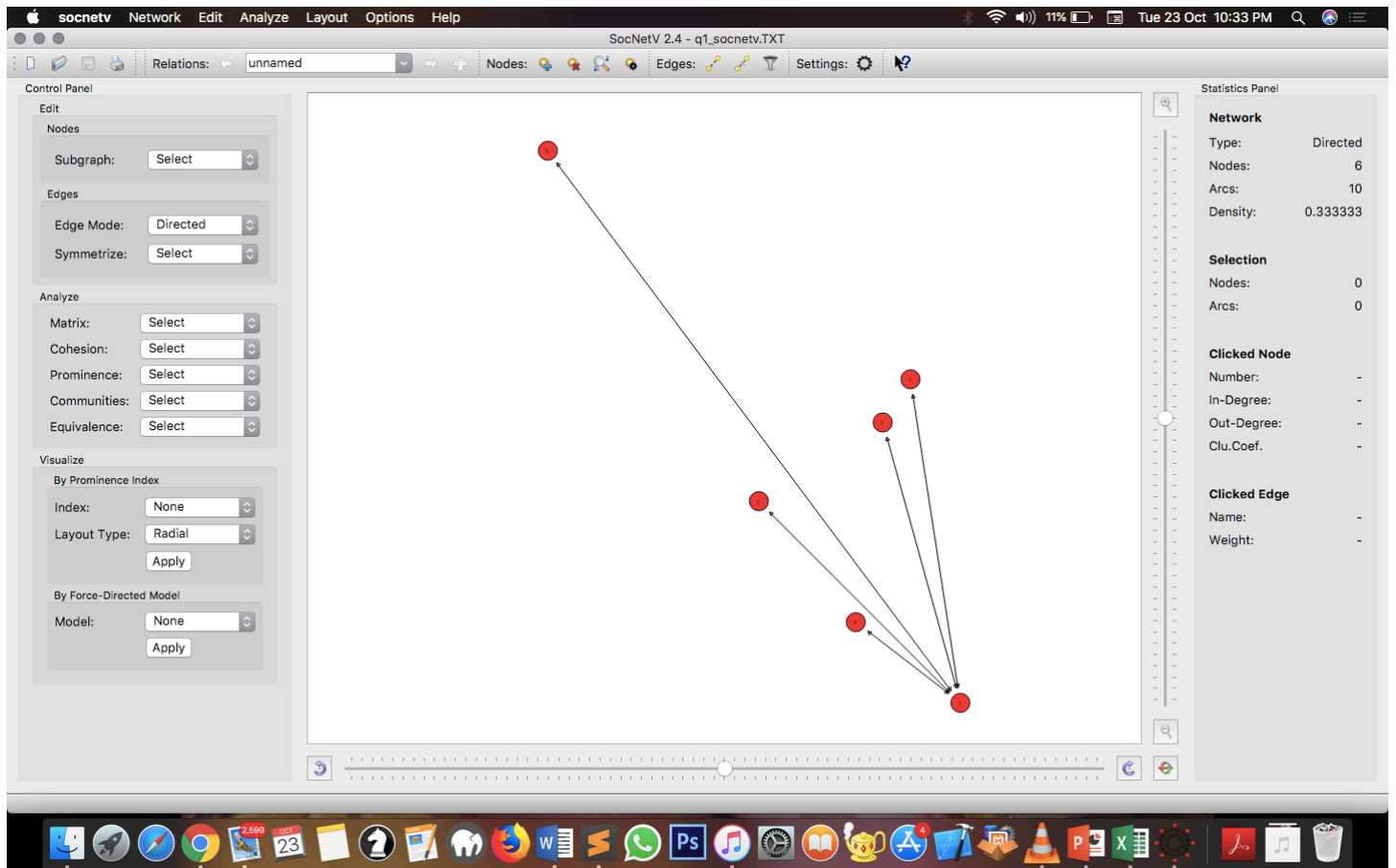OTHERS

AAP

QUESTION

AIADMK

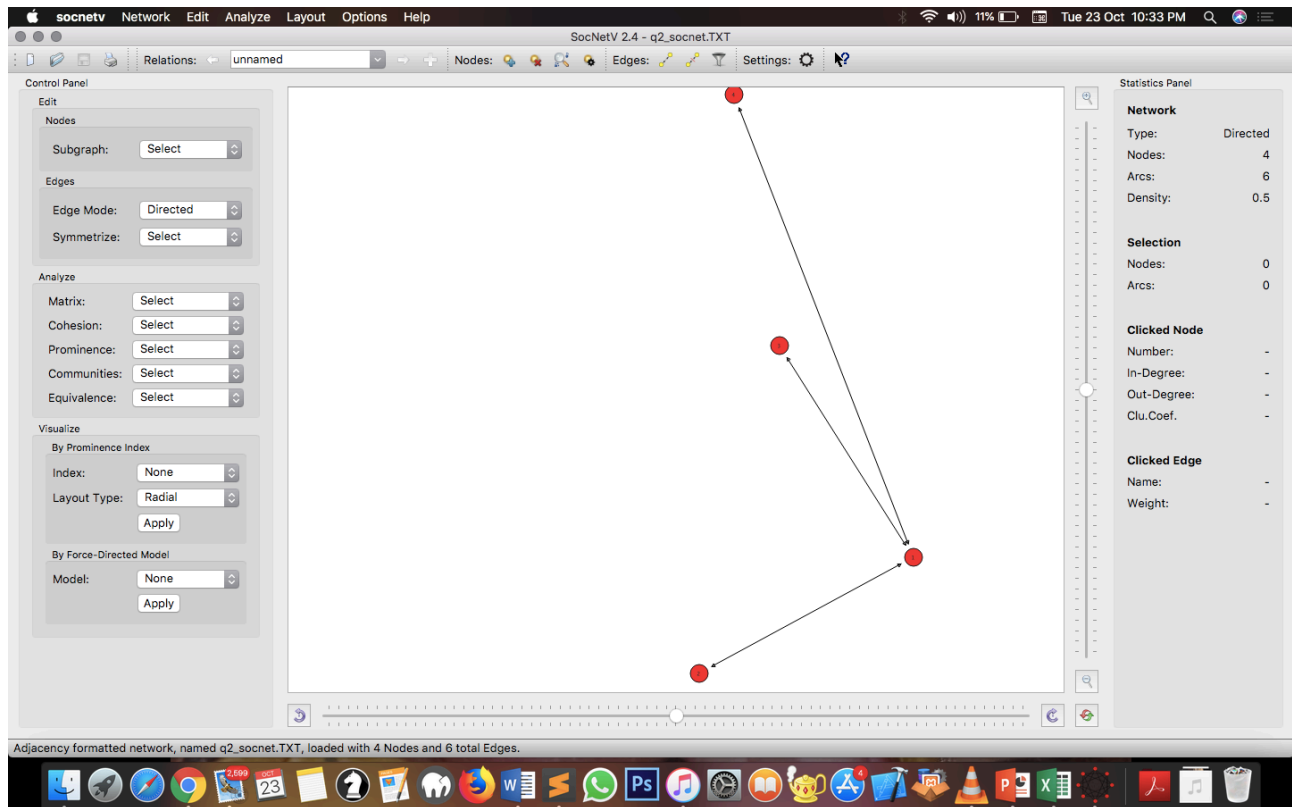BJP

CONGRESS
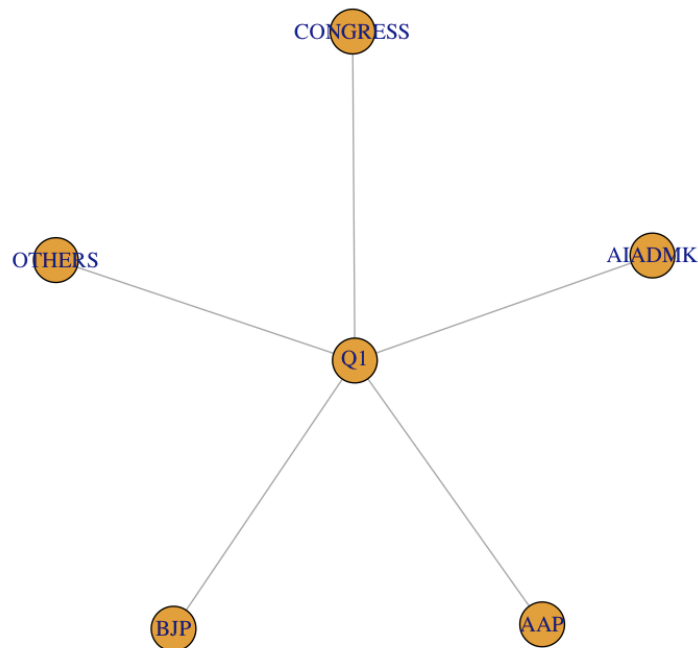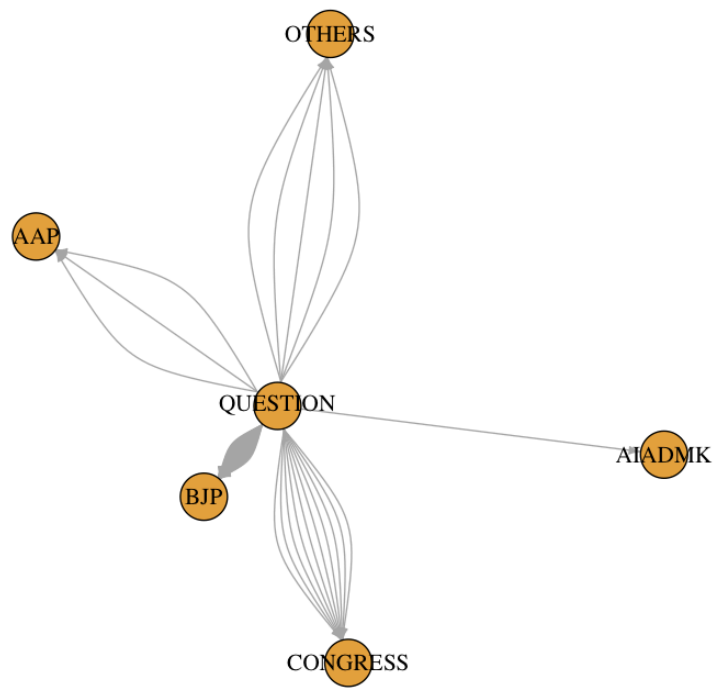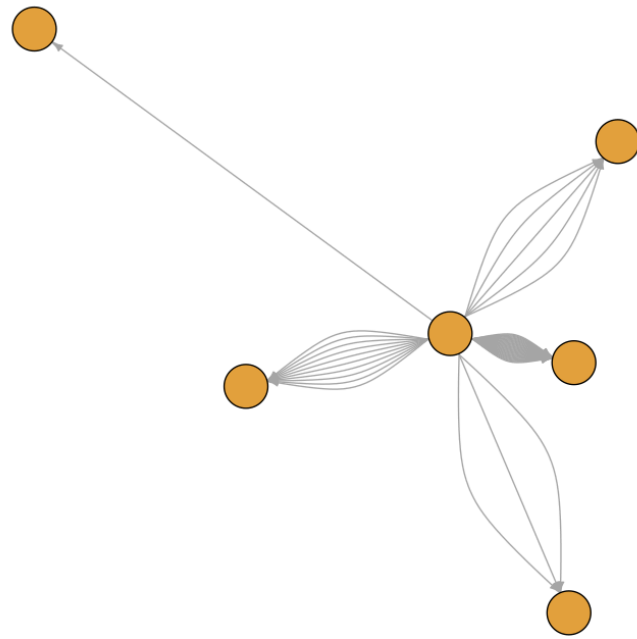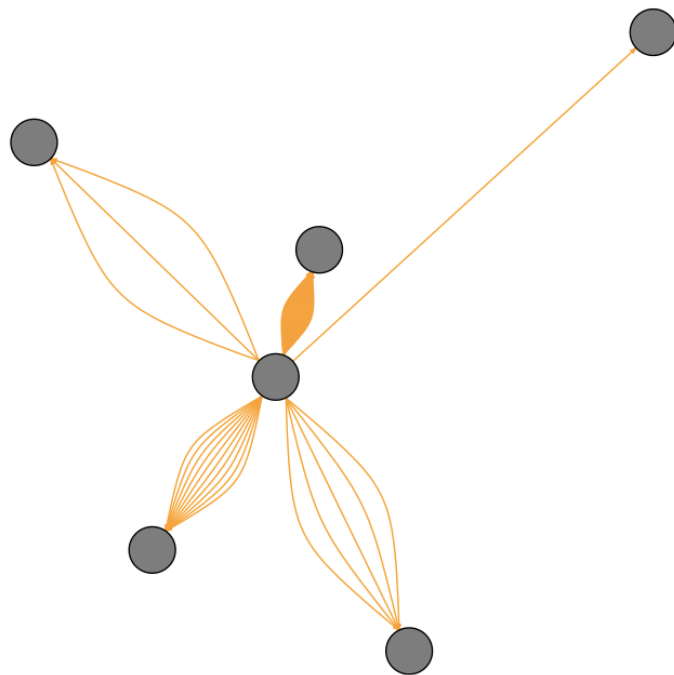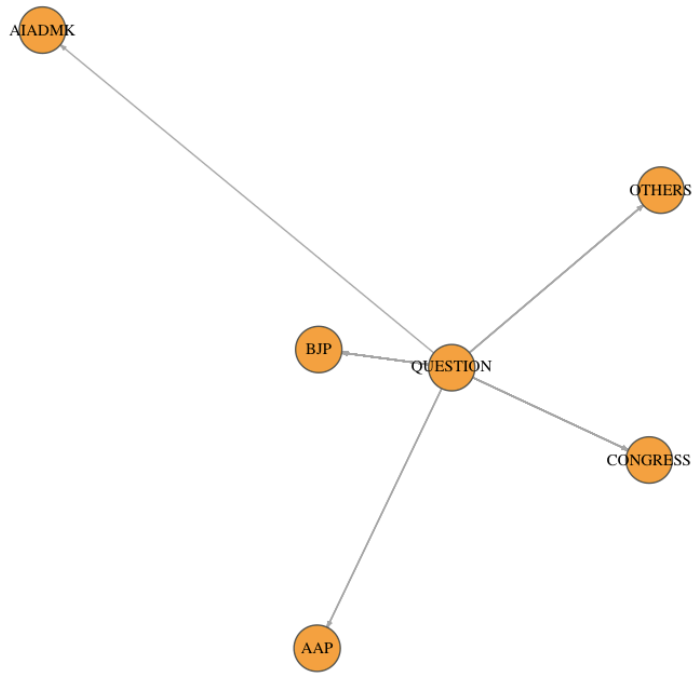
SOCNETV :

Question 1 :

```
0 1 1 1 1 1
1 0 0 0 0 0
1 0 0 0 0 0
1 0 0 0 0 0
1 0 0 0 0 0
1 0 0 0 0 0
```


Question 2 :

```
0 1 1 1
1 0 0 0
1 0 0 0
1 0 0 0
```

GEPHI :

Question 1 :

```xml
<?xml version="1.0" encoding="UTF-8"?>
<gexf xmlns:viz="http:///www.gexf.net/1.1draft/viz" version="1.1"
 xmlns="http://www.gexf.net/1.1draft">
<meta lastmodifieddate="2010-03-03+23:44">
<creator>Gephi 0.7</creator>
</meta>
<graph defaultedgetype="undirected" idtype="string" type="static">
<nodes count="6">
<node id="0.0" label="BJP"/>
<node id="1.0" label="CONGRESS"/>
<node id="2.0" label="AAP"/>
<node id="3.0" label="AIADMK"/>
<node id="4.0" label="OTHERS"/>
<node id="5.0" label="Q1"/>
</nodes>
<edges count="51">
<edge id="0" source="5.0" target="0.0"/>
<edge id="1" source="5.0" target="0.0" />
<edge id="2" source="5.0" target="0.0" />
<edge id="3" source="5.0" target="0.0" />
<edge id="4" source="5.0" target="0.0"/>
<edge id="5" source="5.0" target="0.0"/>
<edge id="6" source="5.0" target="0.0"/>
<edge id="7" source="5.0" target="0.0"/>
<edge id="8" source="5.0" target="0.0"/>
```

```xml
<edge id="9" source="5.0" target="0.0"/>
<edge id="10" source="5.0" target="0.0"/>
<edge id="11" source="5.0" target="0.0"/>
<edge id="12" source="5.0" target="0.0"/>
<edge id="13" source="5.0" target="0.0"/>
<edge id="14" source="5.0" target="0.0"/>
<edge id="15" source="5.0" target="0.0"/>
<edge id="16" source="5.0" target="0.0"/>
<edge id="17" source="5.0" target="0.0"/>
<edge id="18" source="5.0" target="0.0"/>
<edge id="19" source="5.0" target="0.0"/>
<edge id="20" source="5.0" target="0.0"/>
<edge id="21" source="5.0" target="0.0"/>
<edge id="22" source="5.0" target="0.0"/>
<edge id="23" source="5.0" target="0.0"/>
<edge id="24" source="5.0" target="0.0"/>
<edge id="25" source="5.0" target="0.0"/>
<edge id="26" source="5.0" target="0.0"/>
<edge id="27" source="5.0" target="0.0"/>
<edge id="28" source="5.0" target="0.0"/>
<edge id="29" source="5.0" target="0.0"/>
<edge id="30" source="5.0" target="0.0"/>
<edge id="31" source="5.0" target="0.0"/>
<edge id="32" source="5.0" target="0.0"/>
<edge id="33" source="5.0" target="1.0"/>
<edge id="34" source="5.0" target="1.0"/>
<edge id="35" source="5.0" target="1.0"/>
<edge id="36" source="5.0" target="1.0"/>
<edge id="37" source="5.0" target="1.0"/>
<edge id="38" source="5.0" target="1.0"/>
<edge id="39" source="5.0" target="1.0"/>
<edge id="40" source="5.0" target="1.0"/>
<edge id="41" source="5.0" target="1.0"/>
<edge id="42" source="5.0" target="1.0"/>
<edge id="43" source="5.0" target="1.0"/>
<edge id="44" source="5.0" target="1.0"/>
<edge id="45" source="5.0" target="2.0"/>
<edge id="46" source="5.0" target="2.0"/>
<edge id="47" source="5.0" target="2.0"/>
<edge id="48" source="5.0" target="3.0"/>
<edge id="49" source="5.0" target="4.0"/>
<edge id="50" source="5.0" target="4.0"/>
</edges>
</graph>
</gexf>
```

Question 2

```xml
<?xml version="1.0" encoding="UTF-8"?>
<gexf xmlns:viz="http:///www.gexf.net/1.1draft/viz" version="1.1"
 xmlns="http://www.gexf.net/1.1draft">
<meta lastmodifieddate="2010-03-03+23:44">
<creator>Gephi 0.7</creator>
</meta>
<graph defaultedgetype="undirected" idtype="string" type="static">
<nodes count="6">
<node id="0.0" label="Q2"/>
<node id="1.0" label="YES"/>
<node id="2.0" label="NO"/>
<node id="3.0" label="OTHERS"/>
</nodes>
<edges count="51">
<edge id="0" source="0.0" target="1.0"/>
<edge id="1" source="0.0" target="1.0" />
<edge id="2" source="0.0" target="1.0" />
<edge id="3" source="0.0" target="1.0" />
<edge id="4" source="0.0" target="1.0"/>
<edge id="5" source="0.0" target="1.0"/>
<edge id="6" source="0.0" target="1.0"/>
<edge id="7" source="0.0" target="1.0"/>
<edge id="8" source="0.0" target="1.0"/>
<edge id="9" source="0.0" target="1.0"/>
<edge id="10" source="0.0" target="1.0"/>
<edge id="11" source="0.0" target="1.0"/>
<edge id="12" source="0.0" target="1.0"/>
<edge id="13" source="0.0" target="1.0"/>
<edge id="14" source="0.0" target="1.0"/>
<edge id="15" source="0.0" target="1.0"/>
<edge id="16" source="0.0" target="1.0"/>
<edge id="17" source="0.0" target="1.0"/>
<edge id="18" source="0.0" target="1.0"/>
```
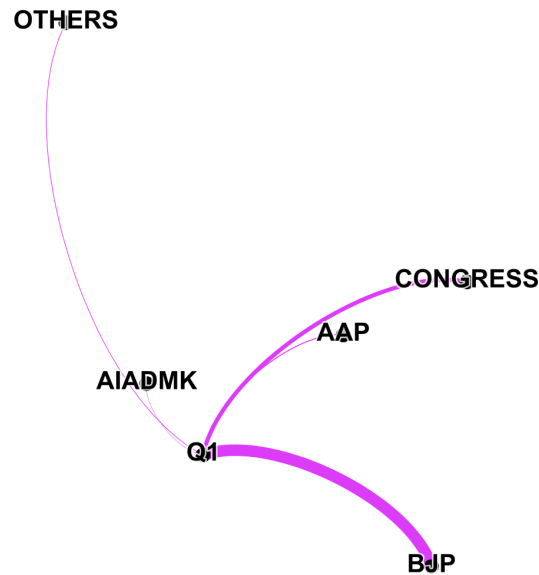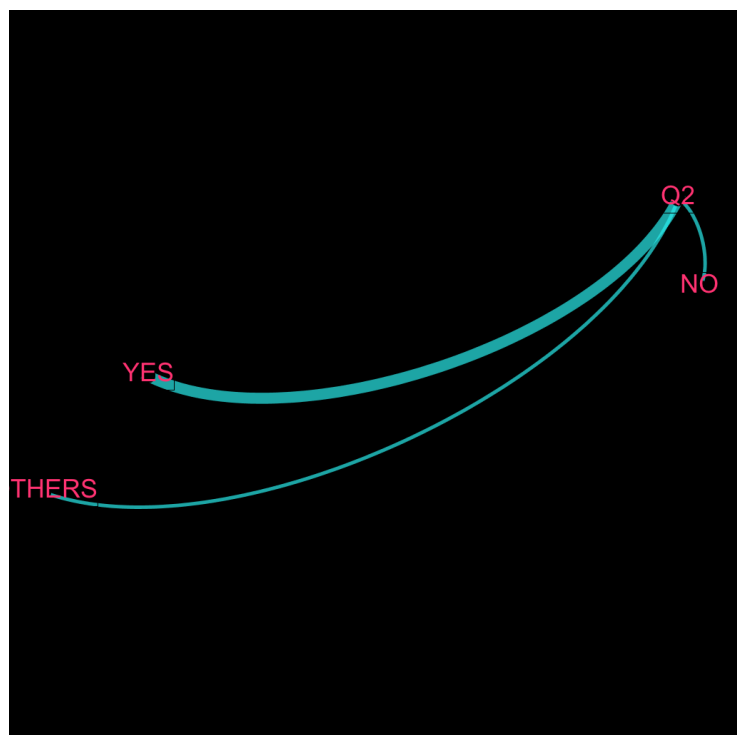
```xml
<edge id="19" source="0.0" target="1.0"/>
<edge id="20" source="0.0" target="1.0"/>
<edge id="21" source="0.0" target="1.0"/>
<edge id="22" source="0.0" target="1.0"/>
<edge id="23" source="0.0" target="1.0"/>
<edge id="24" source="0.0" target="1.0"/>
<edge id="25" source="0.0" target="1.0"/>
<edge id="26" source="0.0" target="1.0"/>
<edge id="27" source="0.0" target="1.0"/>
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CONCLUSION

According to our survey and questionnaire form, we came to the conclusion that **Bharat Janta Party** is supposed to win the elections of Lok Shabha in 2019.

People also estimated that the **political memes** has a **strong influence** on determining the results of the results of the elections as any publicity is a good publicity.

The most popular medium to encounter memes in our daily life is through none other than **facebook** and after that we have twitter and various other media sources.

From the public's point of view, memes indeed provide an **useful information and news** about our current happenings.

The most common opinion on memes and their influence on the modern culture is that **they are informative in a humorous kind of way**.

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