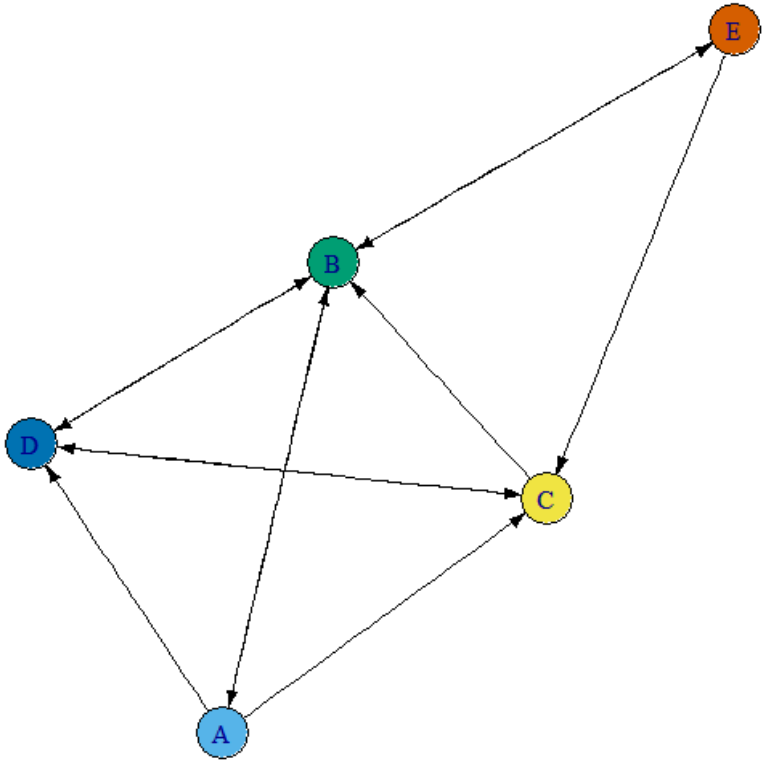
Exercises

1. Message channels of the network X are as follows:

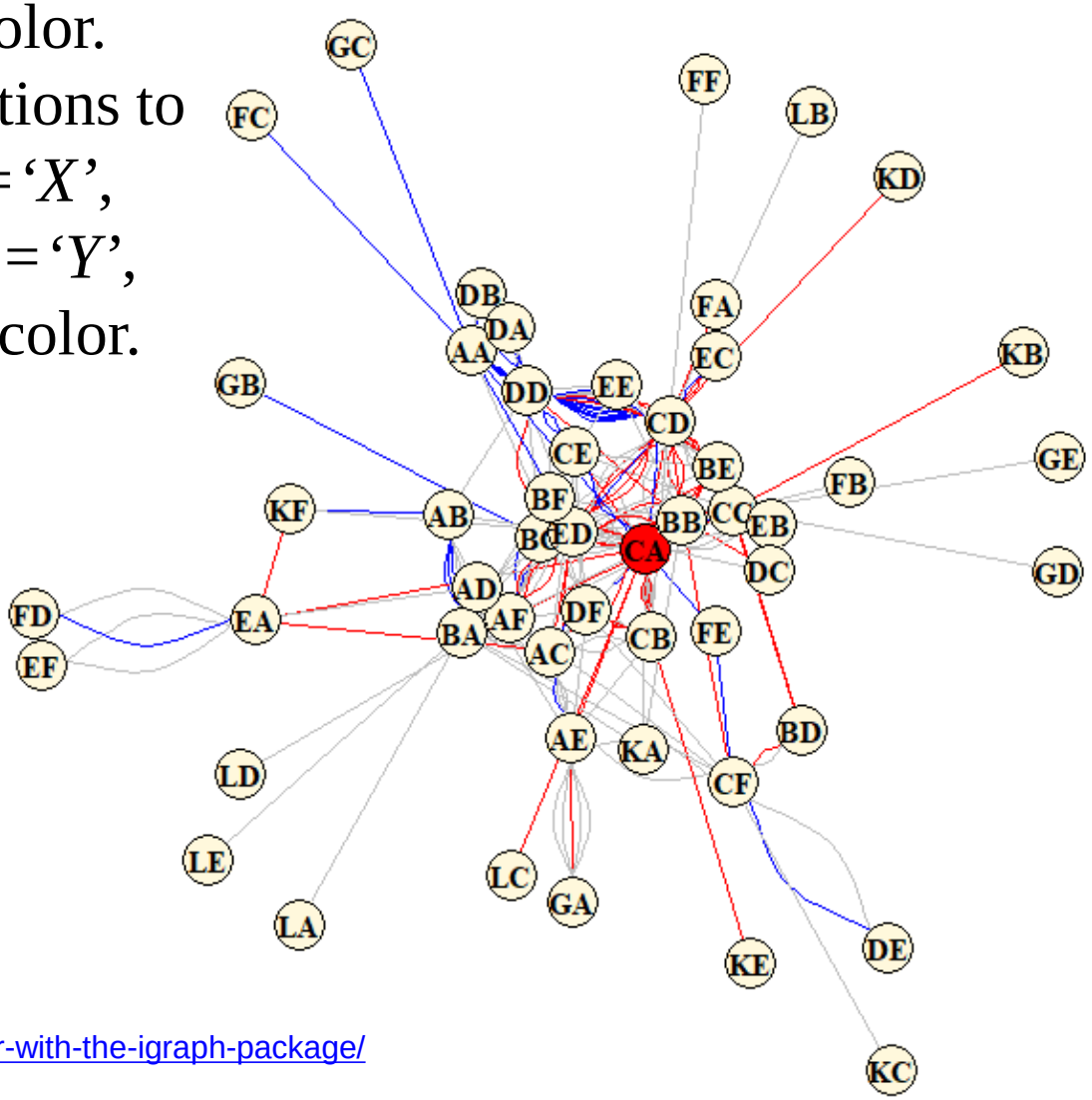
$A \rightarrow B,\ A \rightarrow C,\ A \rightarrow D,\ B \rightarrow A,\ B \rightarrow D,\ B \rightarrow E,\ C \rightarrow B$

$C \rightarrow D,\ D \rightarrow B,\ D \rightarrow C,\ E \rightarrow B,\ E \rightarrow C$

Draw this network by defining the adjacency matrix.
Make sure to add the node names on the graph along with the direction of the edges.

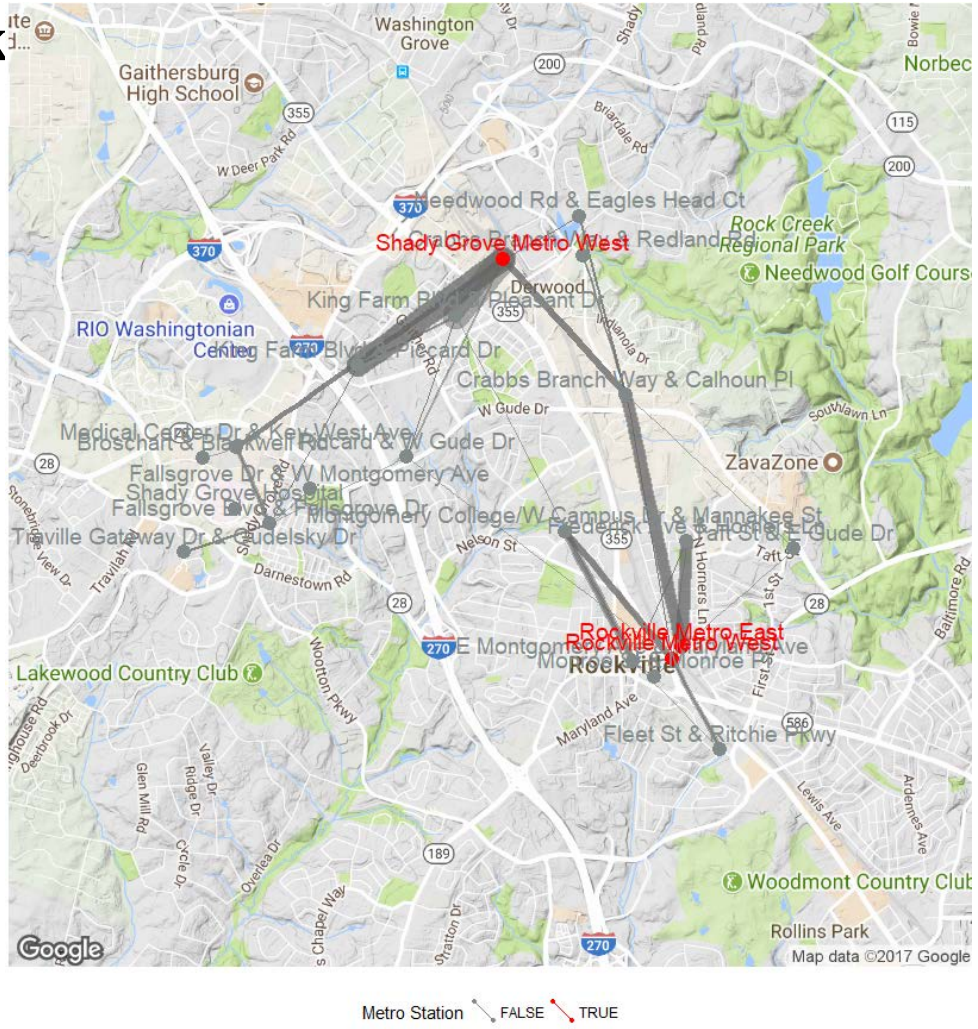


2. Using the edgesdata3.txt data set, draw a decorated network displayed as follows.
   - Mark the "CA" node *red* colors, otherwise use the *cornsilk* color.
   - Write a nested ifelse conditions to plot edges *red* color if *spec*='*X*', plot edges *blue* color if *spec*='*Y*', otherwise plot them in *grey* color.



http://www.r-bloggers.com/network-visualization-in-r-with-the-igraph-package/

3. In today's lecture, you have made a plot of the bike sharing network. Now overlay the bike sharing network on the geographic map as the following figure.
Hint: utilize the code below.




```
#3.
#Geographical Layout
library(mapproj)
library(ggmap)
metro_map <- get_map(location=c(left=-77.22257,bottom=39.05721,
                                right=-77.11271,top=39.14247))
# geomnet: overlay bike sharing network on geographic map
ggmap(metro_map) +
  geom_net(
```

Fill out this part by yourself

```
  scale_colour_manual("Metro Station", values= c("azure4", "red")) +
  theme_net() %+replace% theme(aspect.ratio=NULL, legend.position="bottom") +
  coord_map()
```