**Part 1**

library(devtools)

install\_github("verisr", "jayjacobs")

library(verisr)

jsondir <- 'data/vcdb2/'

vcdb<- json2veris(jsondir)

**Chart 1: Frequency of Attack Actors**

actors <- getenum(vcdb, "actor")

actors <- getenum(vcdb, "actor", add.freq=TRUE)

names(actors)[1]<-paste("Attack Actor")

names(actors)[2]<-paste("Frequency of Attacks")

ggplot(actors,aes(x=Actors,y=Attack\_Frequency)) +

ggtitle("Frequency of Attack Actors") +

geom\_bar(stat = "identity") +

geom\_text(aes(label = sprintf("%.2f%%", Attack\_Frequency/sum(Attack\_Frequency)\*100)),vjust = -.5)

**Chart 2: Type of External Actors**

external <- getenum(vcdb, "actor.external.variety", add.freq=TRUE)

barchart(enum~x, data=externalAr, main="Types of External Actors",ylab = "External Actor", xlab="Occurances", auto.key=TRUE)

**Chart 3: Different types of Attack Actions**

action <- getenum(vcdb, "action", add.freq=TRUE)

barchart(enum~x,data=action, main="Differnt Types of Attacks",ylab = "Action", xlab="Occurances")

**Chart 4: Physical types of Attacks**

phyvar <- getenum(vcdb, "action.physical.variety")

barchart(enum~x,data=phyvar, main="Types of Physical Attacks",ylab = "Physical Attacks", xlab="Occurancess")

**Chart 5: Types of Targeted Assets**

assets <- getenum(vcdb, "asset.assets")

barchart(enum~x,data=assets, main="Types of Assets",ylab = "Assets", xlab="Occurancess")

**Chart 6: CIA Attributes Attacked**

att <- getenum(vcdb, "attribute")

attar <- arrange(att,desc(x))

barchart(enum~x,data=attar, main="CIA Attributes Attacked",ylab = "Attributes", xlab="Occurancess")

**Chart 7: Types of Hacking Targets**

hck <- getenum(vcdb, "action.hacking.vector")

barchart(enum~x,data=hck, main="Types of Hacking Targets",ylab = "Hacking Types", xlab="Occurancess")

**Chart 8: Attacks on Assets**

actAss <- getenum(vcdb, enum="action", primary="asset.assets", add.freq=TRUE)

levelplot(x ~ enum\*enum1, data = actAss, shrink = c(0.5, 1), main = "Type of Attacks on Assets", xlab="Attacks", ylab="Assets",col.regions = colorRampPalette(c("#F5F5F5", "#01665E"))(20))

**Chart 9: Attack on CIA**

actCia <- getenum(vcdb, enum="action", primary="attribute", add.freq=TRUE)

levelplot(x ~ enum\*enum1, data = actCia, shrink = c(0.5, 1), main = "Type of Attacks on CIA", xlab="Attacks", ylab="CIA",col.regions = colorRampPalette(c("#F5F5F5", "#01665E"))(20))