part 3 markdown

Some R code and pdf to use with the markdown Phase 1

```
df <- read.csv("~/Desktop/packet", header = FALSE)
head(df)
```

```
##     V1       V2                V3                V4       V5     V6
## 1 No.     Time              Source       Destination Protocol Length
## 2   1 0.000000 CiscoInc_38:46:3b CiscoInc_38:46:3b     LOOP     60
## 3   2 1.214191       HP_dd:f9:a0       HP_dd:f9:a0      LLC     54
## 4   3 2.714738       HP_dd:f9:a0       HP_dd:f9:a0      LLC     54
## 5   4 4.214311       HP_dd:f9:a0       HP_dd:f9:a0      LLC     54
## 6   5 5.714803       HP_dd:f9:a0       HP_dd:f9:a0      LLC     54
##                                                                V7
## 1                                                             Info
## 2                                                            Reply
## 3 U P, func=TEST; DSAP NULL LSAP Individual, SSAP NetBIOS Command
## 4 U P, func=TEST; DSAP NULL LSAP Individual, SSAP NetBIOS Command
## 5 U P, func=TEST; DSAP NULL LSAP Individual, SSAP NetBIOS Command
## 6 U P, func=TEST; DSAP NULL LSAP Individual, SSAP NetBIOS Command
```

```
summary(df)
```

```
##       V1                  V2                      V3
## 1       :    1   0.000000    :    1   131.84.1.31    : 34316
## 10      :    1   10000.618991:    1   194.7.248.153  : 25827
## 100     :    1   10000.634153:    1   135.8.60.182   : 25065
## 1000    :    1   10000.644235:    1   172.16.113.148: 22434
## 10000   :    1   10000.657853:    1   172.16.112.194: 20163
## 100000  :    1   10000.727984:    1   197.182.91.233: 17268
## (Other):394084   (Other)     :394084   (Other)       :249017
##                V4                 V5                 V6
## 172.16.115.20 : 28271   TCP    :215636   60      :299241
## 135.8.60.182  : 22790   TELNET :130567   1514    : 33178
## 194.7.248.153 : 22735   HTTP   : 16854   74      : 17360
```

```
## 172.16.113.148: 18380    SMTP    :  7908   54       :  2432
## 172.16.112.194: 18284    SSHv1   :  4911   70       :  2302
## 197.218.177.69: 16582    FTP-DATA:  4370   1078     :  1556
## (Other)        :267048   (Other) : 13844   (Other): 38021
##                                                               V7
## Telnet Data ...                                        :129765
## [TCP segment of a reassembled PDU]                     :  7644
## Client: Encrypted packet (len=10)                      :  4631
## FTP Data: 1460 bytes                                   :  3905
## U P, func=TEST; DSAP NULL LSAP Individual, SSAP NetBIOS Command:  2423
## HTTP/1.1 200 OK  (GIF89a) (GIF89a) (image/gif)         :  2414
## (Other)                                                :243308
```

```r
d <- table(df$V5)

#linebar plot for protocols
plot(d,  xlab='number per protocol')
```
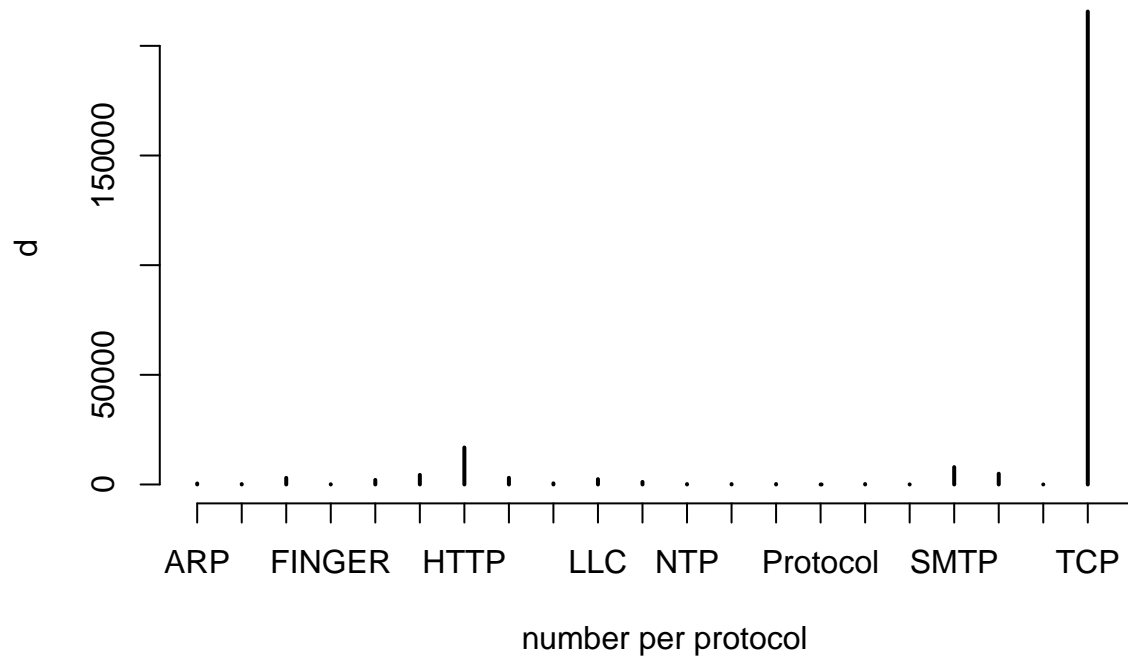
```r
#phase 2 line graph
df <- read.csv("~/Desktop/phase2", header = FALSE)
head(df)
```

```
##   V1       V2           V3       V4          V5     V6
## 1 No.    Time       Source   Destination Protocol Length
## 2   1  0.000000 202.77.162.213 172.16.115.1  Portmap     98
## 3   2  5.003893 202.77.162.213 172.16.115.1  Portmap     98
## 4   3 10.014027 202.77.162.213 172.16.115.1  Portmap     98
## 5   4 15.024106 202.77.162.213 172.16.115.1  Portmap     98
## 6   5 20.034167 202.77.162.213 172.16.115.1  Portmap     98
##                                                              V7
## 1                                                           Info
## 2                       V2 GETPORT Call SADMIND(100232) V:10 UDP
## 3 [RPC retransmission of #1]V2 GETPORT Call SADMIND(100232) V:10 UDP
## 4 [RPC retransmission of #1]V2 GETPORT Call SADMIND(100232) V:10 UDP
## 5 [RPC retransmission of #1]V2 GETPORT Call SADMIND(100232) V:10 UDP
## 6 [RPC retransmission of #1]V2 GETPORT Call SADMIND(100232) V:10 UDP
```

```r
summary(df)
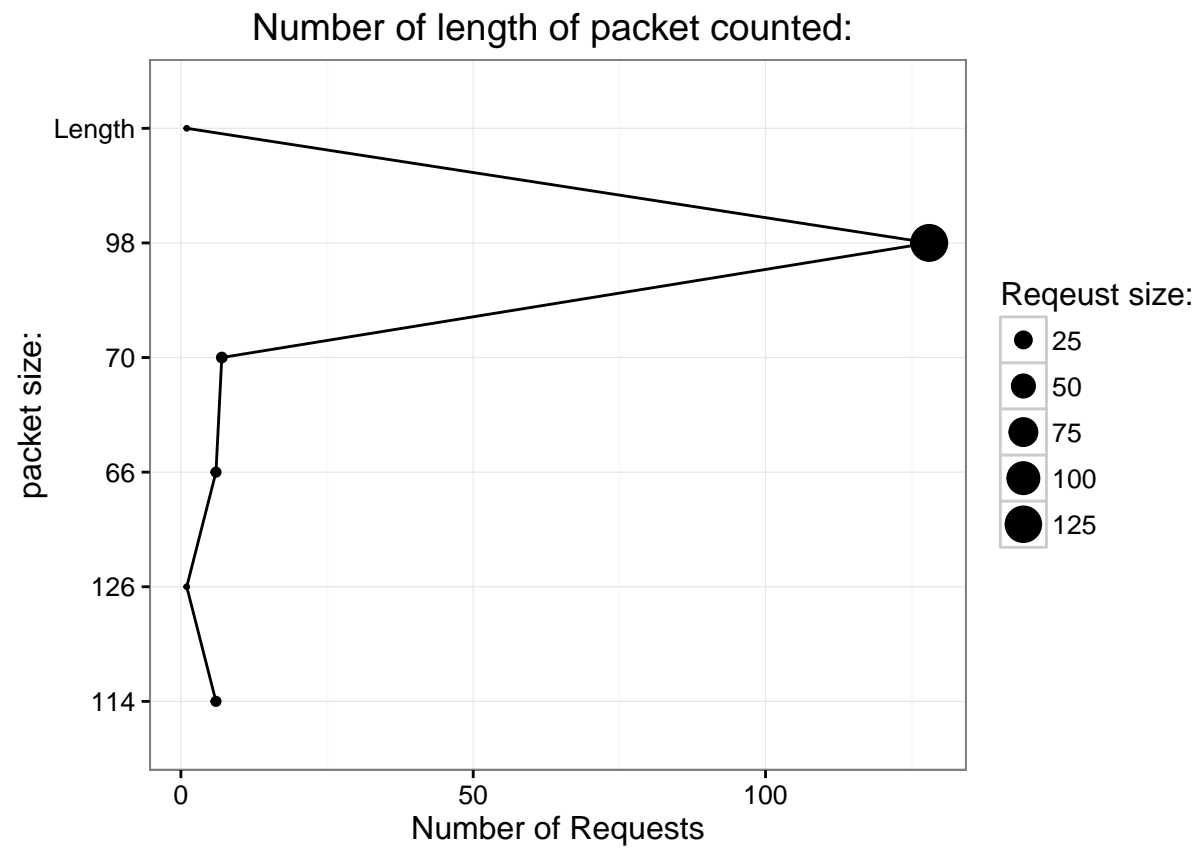```

```
##       V1              V2                      V3                      V4
##  1      :  1   0.000000  :  1   202.77.162.213:134   202.77.162.213:14
##  10     :  1   10.014027 :  1   172.16.112.10 :  2   172.16.112.1  :12
##  100    :  1   100.345194:  1   172.16.112.50 :  2   172.16.112.100:12
##  101    :  1   105.355235:  1   172.16.114.10 :  2   172.16.112.105:12
##  102    :  1   110.365332:  1   172.16.114.20 :  2   172.16.112.194:12
##  103    :  1   115.375358:  1   172.16.114.30 :  2   172.16.113.1  :12
##  (Other):143   (Other)   :143   (Other)       :  5   (Other)       :75
##        V5              V6
##  ICMP    :  1   114    :  6
##  Portmap :135   126    :  1
##  Protocol:  1   66     :  6
##  SADMIND : 12   70     :  7
##                 98     :128
##                 Length :  1
##
##                                                              V7
```

3

```
##   [RPC retransmission of #113]V2 GETPORT Call SADMIND(100232) V:10 UDP:11
##   [RPC retransmission of #125]V2 GETPORT Call SADMIND(100232) V:10 UDP:11
##   [RPC retransmission of #137]V2 GETPORT Call SADMIND(100232) V:10 UDP:11
##   [RPC retransmission of #17]V2 GETPORT Call SADMIND(100232) V:10 UDP :11
##   [RPC retransmission of #1]V2 GETPORT Call SADMIND(100232) V:10 UDP  :11
##   [RPC retransmission of #29]V2 GETPORT Call SADMIND(100232) V:10 UDP :11
##   (Other)                                                             :83
```

```r
d <- table(df$V6)
frame2<-as.data.frame(d)

library("Sleuth2")
library("ggplot2")
ggplot(frame2, aes(frame2$Var1, frame2$Freq, group=1)) +
  geom_line() +
  geom_point(aes(size=frame2$Freq)) +
  theme_bw() +
  labs(size="Reqeust size:" ) +
  scale_size_area() +
  xlab("packet size:") +
  ylab("Number of Requests") +
  coord_flip() +
  ggtitle("Number of length of packet counted: ")
```

Number of length of packet counted:


```r
df <- read.csv("~/Desktop/phase2", header = FALSE)
head(df)
```

```
##    V1       V2            V3         V4        V5    V6
## 1 No.     Time        Source   Destination  Protocol Length
## 2   1  0.000000 202.77.162.213 172.16.115.1  Portmap    98
## 3   2  5.003893 202.77.162.213 172.16.115.1  Portmap    98
## 4   3 10.014027 202.77.162.213 172.16.115.1  Portmap    98
## 5   4 15.024106 202.77.162.213 172.16.115.1  Portmap    98
## 6   5 20.034167 202.77.162.213 172.16.115.1  Portmap    98
##                                                              V7
```

```
## 1                                                               Info
## 2                      V2 GETPORT Call SADMIND(100232) V:10 UDP
## 3 [RPC retransmission of #1]V2 GETPORT Call SADMIND(100232) V:10 UDP
## 4 [RPC retransmission of #1]V2 GETPORT Call SADMIND(100232) V:10 UDP
## 5 [RPC retransmission of #1]V2 GETPORT Call SADMIND(100232) V:10 UDP
## 6 [RPC retransmission of #1]V2 GETPORT Call SADMIND(100232) V:10 UDP
```

summary(df)

```
##       V1               V2                    V3                    V4
## 1      : 1    0.000000  : 1    202.77.162.213:134    202.77.162.213:14
## 10     : 1    10.014027 : 1    172.16.112.10 :  2    172.16.112.1  :12
## 100    : 1    100.345194: 1    172.16.112.50 :  2    172.16.112.100:12
## 101    : 1    105.355235: 1    172.16.114.10 :  2    172.16.112.105:12
## 102    : 1    110.365332: 1    172.16.114.20 :  2    172.16.112.194:12
## 103    : 1    115.375358: 1    172.16.114.30 :  2    172.16.113.1  :12
## (Other):143   (Other)   :143   (Other)       :  5    (Other)       :75
##        V5            V6
## ICMP    : 1    114    : 6
## Portmap :135   126    : 1
## Protocol: 1    66     : 6
## SADMIND : 12   70     : 7
##                98     :128
##                Length:  1
##
##                                                                    V7
## [RPC retransmission of #113]V2 GETPORT Call SADMIND(100232) V:10 UDP:11
## [RPC retransmission of #125]V2 GETPORT Call SADMIND(100232) V:10 UDP:11
## [RPC retransmission of #137]V2 GETPORT Call SADMIND(100232) V:10 UDP:11
## [RPC retransmission of #17]V2 GETPORT Call SADMIND(100232) V:10 UDP :11
## [RPC retransmission of #1]V2 GETPORT Call SADMIND(100232) V:10 UDP  :11
## [RPC retransmission of #29]V2 GETPORT Call SADMIND(100232) V:10 UDP :11
## (Other)                                                            :83
```

```
d <- table(df$V4)
frame2<-as.data.frame(d)
print(frame2)
```

```
##                Var1 Freq
## 1      172.16.112.1   12
## 2     172.16.112.10    2
## 3    172.16.112.100   12
## 4    172.16.112.105   12
## 5    172.16.112.194   12
## 6     172.16.112.50    2
## 7      172.16.113.1   12
## 8    172.16.113.105   12
## 9    172.16.113.148   12
## 10    172.16.113.50    1
## 11    172.16.114.10    2
## 12     172.16.114.2   12
## 13    172.16.114.20    2
## 14    172.16.114.30    2
## 15    172.16.114.50    1
## 16     172.16.115.1   12
## 17    172.16.115.20    2
## 18    172.16.115.87   12
## 19   202.77.162.213   14
## 20       Destination    1
```

```r
library("Sleuth2")
library("ggplot2")


ggplot(frame2, aes(frame2$Var1, frame2$Freq, group=2)) +
  geom_point(aes(size=frame2$Freq)) +
  labs(size="Reqeust size:" ) +
  scale_size_area() +
  xlab("Ip address") +
  ylab("Number of Requests") +
  coord_flip() +
  coord_polar("y", start=0)
```

Number of Requests
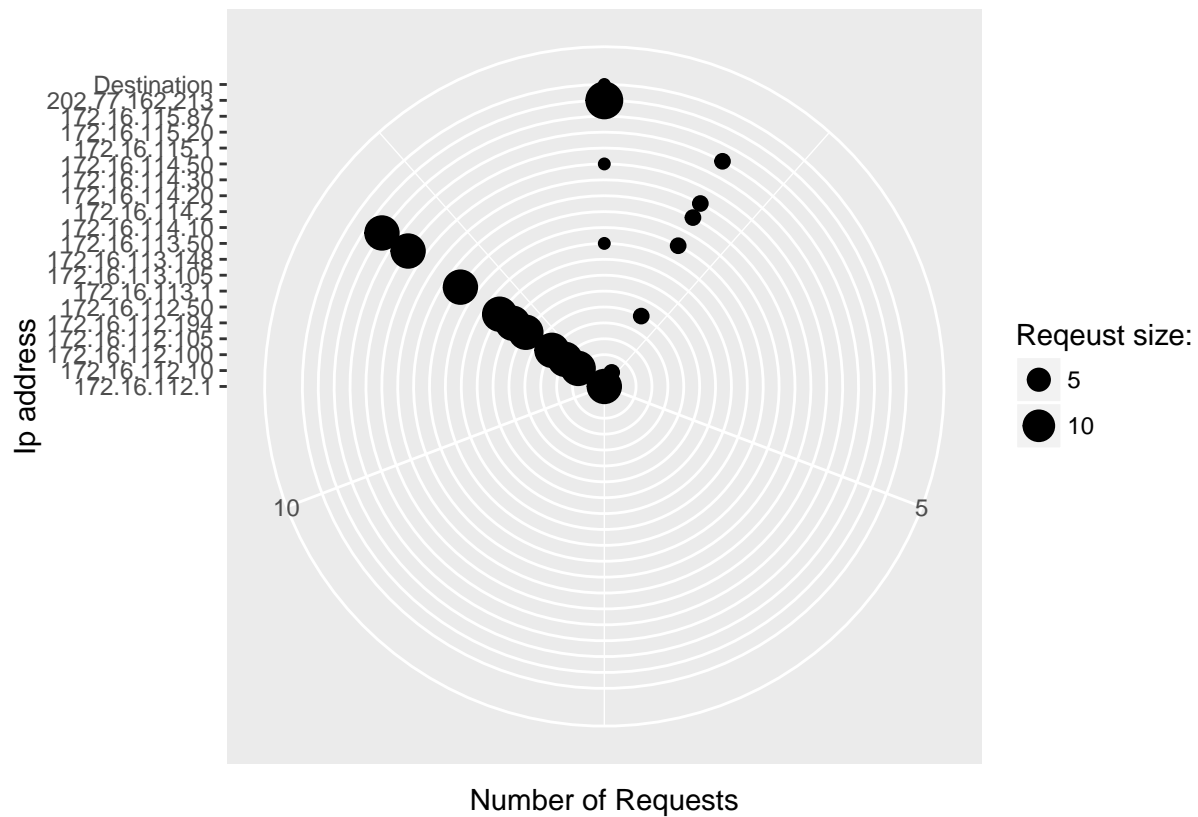
```
  ggtitle("Number of length of packet counted: ")
```

```
## $title
## [1] "Number of length of packet counted: "
##
## attr(,"class")
## [1] "labels"
```

```
#Phase 3 scatter plot
df <- read.csv("~/Desktop/phase3", header = FALSE)
head(df)
```

```
##     V1       V2            V3            V4       V5     V6
## 1 No.    Time        Source    Destination Protocol Length
## 2   1 0.000000 202.77.162.213  172.16.115.20  Portmap     98
## 3   2 0.001404  172.16.115.20 202.77.162.213  Portmap     70
## 4   3 0.005545 202.77.162.213  172.16.115.20  SADMIND    114
## 5   4 0.126891  172.16.115.20 202.77.162.213  SADMIND     66
## 6   5 0.141355 202.77.162.213  172.16.115.87  Portmap     98
##                                                                V7
## 1                                                            Info
## 2 V2 GETPORT Call (Reply In 2) SADMIND(100232) V:10 UDP
## 3            V2 GETPORT Reply (Call In 1) Port:32773
## 4                      V10 proc-0 Call (Reply In 4)
## 5                      V10 proc-0 Reply (Call In 3)
## 6            V2 GETPORT Call SADMIND(100232) V:10 UDP
```

summary(df)

```
##        V1              V2                   V3                    V4
## 1       : 1   0.000000: 1   202.77.162.213:79   202.77.162.213:79
## 10      : 1   0.001404: 1   172.16.112.194:40   172.16.112.100:12
## 100     : 1   0.005545: 1   172.16.112.100:12   172.16.112.105:12
## 101     : 1   0.126891: 1   172.16.112.105:12   172.16.112.194:12
## 102     : 1   0.141355: 1   172.16.113.148: 4   172.16.113.105:12
## 103     : 1   0.141623: 1   172.16.112.10 : 2   172.16.113.148:12
## (Other):153   (Other) :153  (Other)       :10   (Other)       :20
##        V5           V6
##  ICMP    :72   114   : 3
##  Portmap :80   126   :48
##  Protocol: 1   66    : 3
##  SADMIND : 6   70    :28
##                98    :76
##                Length: 1
##
##                                                                  V7
##  Destination unreachable (Port unreachable)                      :72
##  [RPC retransmission of #111]V2 GETPORT Call SADMIND(100232) V:10 UDP:11
##  [RPC retransmission of #135]V2 GETPORT Call SADMIND(100232) V:10 UDP:11
##  [RPC retransmission of #31]V2 GETPORT Call SADMIND(100232) V:10 UDP :11
```

```
##   [RPC retransmission of #55]V2 GETPORT Call SADMIND(100232) V:10 UDP :11
##   [RPC retransmission of #5]V2 GETPORT Call SADMIND(100232) V:10 UDP  :11
##   (Other)                                                            :32
```

```
d <- table(df$V3)
frame2<-as.data.frame(d)

library("Sleuth2")
library("ggplot2")
ggplot(frame2, aes(frame2$Var1, frame2$Freq)) +
  geom_point(aes(size=frame2$Freq)) +
  theme_bw() +
  labs(size="Reqeust size:" ) +
  scale_size_area() +
  xlab("IP ADDRESS") +
  ylab("Number of Requests") +
  coord_flip() +
  ggtitle("Number of request of each IP source for phase 3")
```

Number of request of each IP source for phase 3

Reqeust size:
- 20
- 40
- 60

IP ADDRESS

Source
202.77.162.213
172.16.117.132
172.16.115.87
172.16.115.20
172.16.113.50
172.16.113.148
172.16.113.105
172.16.112.50
172.16.112.194
172.16.112.105
172.16.112.100
172.16.112.10

Number of Requests