

# Data Visualization-Assignment 2

Code ▾

Raghu Sanugommula and Subhash Pemmaraju  
22nd February 2019

## Introduction: Initial Summary

kable function is used to wrap the variables and descriptions into a table for displaying information on the HTML

Hide

kable(Assignmentvariables)

sei	sex	region	year	owngun	tvhours	age3	race
Hodge/Siegel/Rossi prestige scale score for respondent's occupation.Actual score recorded	Sex Coded by interviewer; Male/Female	region of interview	year of sample	Do you happen to have in your home any guns or revolvers? yes/no	On the average day, about how many hours do you personally watch television?	AGE variable recoded into thirds	What race do you consider yourself?

## Exploratory Question 1:

How many people from the sample own a gun; filtered by sex(Male/Female)?

Hide

```
havegunyes<-filter( assignment2,owngun=="YES",sex=="MALE")
havegunno<-filter(assignment2,owngun=="NO",sex=="FEMALE")

havegunyesmale<-filter(assignment2,owngun=="YES",sex=="MALE")
havegunyesmale1<-havegunyesmale$owngun=="YES"
maleowngunyes<-sum(havegunyesmale1,na.rm=TRUE)

havegunyesfemale<-filter(assignment2,owngun=="YES",sex=="FEMALE")
havegunyesfemale1<-havegunyesfemale$owngun=="YES"
femaleowngunyes<-sum(havegunyesfemale1,na.rm=TRUE)

havegunnomale<-filter(assignment2,owngun=="NO",sex=="MALE")
havegunnomale1<-havegunnomale$owngun=="NO"
maleowngunno<-sum(havegunnomale1,na.rm=TRUE)

havegunnofemale<-filter(assignment2,owngun=="NO",sex=="FEMALE")
havegunnofemale1<-havegunnofemale$owngun=="NO"
femaleowngunno<-sum(havegunnofemale1,na.rm=TRUE)

sample<-c(maleowngunyes,femaleowngunyes,maleowngunno,femaleowngunno)
plot1<-matrix(sample,nrow=2,dimnames=list(c("YES","NO"),c("Male","Female")))
##To create a table with variables and values###
kable(plot1)
```

	Male	Female
YES	343	491
NO	282	754

Hide

```
plotowngun<-melt(plot1)
colnames(plotowngun)<-c("OwnGun","Sex","value")

#### Visual####
Figure1<-ggplot(plotowngun, aes(x=OwnGun, y=value,group=Sex,color=Sex))+ggtitle("Chart1:owngunbysex")+xlab("OwnGun:Yes/No")+
ylab("Value") + geom_point(size=4)+geom_text(aes(label=value), hjust=0,vjust=0, color="blue", size=3.5)+theme_minimal()+anno
tate("text",x=1,y=505,label="Majority are the females said:Yes")
Figure1
```



The idea behind developing the above plot is to find the ratio between male and female own a gun. We predicted, obviously men ratio would be higher, but interestingly, the female is higher compared to men. We have not included the empty columns where men's likely left the column unfilled, which is interpretable by looking at the graph.

## Exploratory Question 2:

Prestige Score by race for Year 2000

Hide

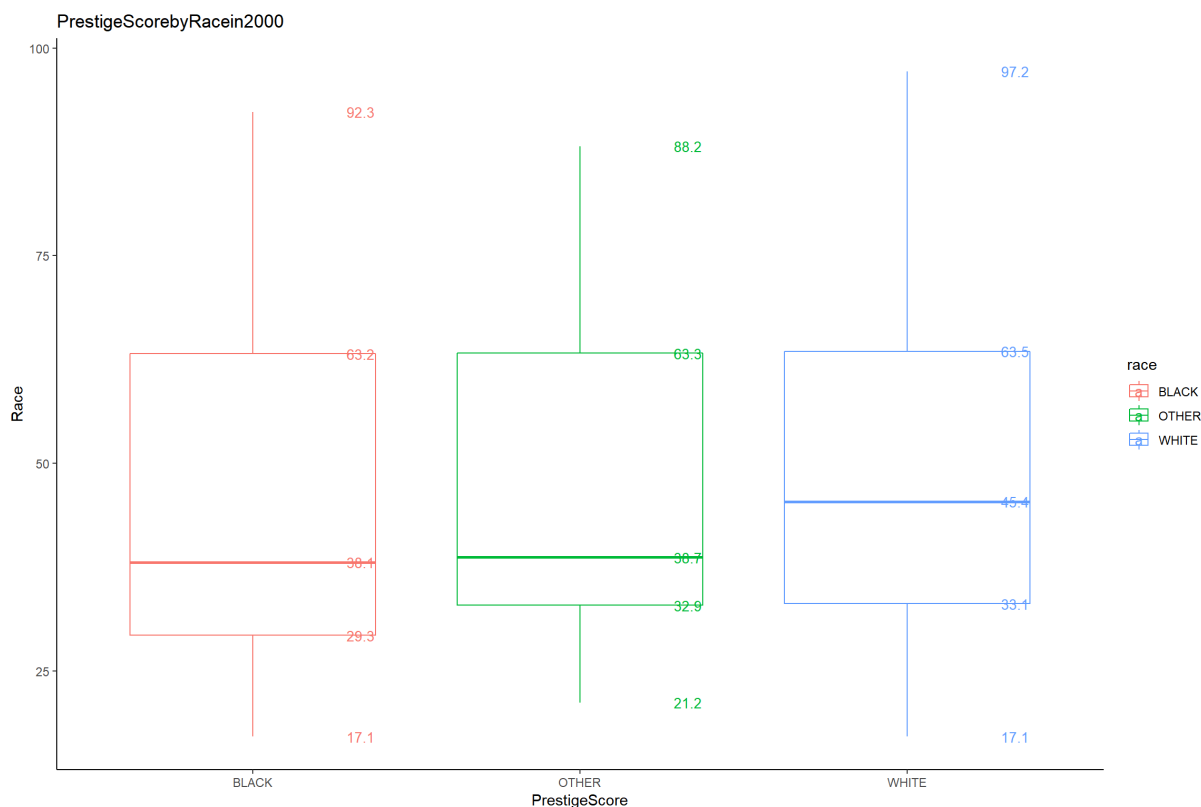
```
question2<-filter(assignment2,year==2000,race %in% c("WHITE","BLACK","OTHER"),sei!="NA")
prestigescore2000<-data.frame(question2$sei,question2$race)
prestigescore2000 %>% glimpse()
```

```
## Observations: 1,424
## Variables: 2
## $ question2.sei <dbl> 45.7, 38.4, 37.5, 64.0, 48.6, 66.1, 63.5, 76.4,...
## $ question2.race <fct> WHITE, WHITE, WHITE, WHITE, WHITE, WHITE, WHITE...
```

Hide

```
colnames(prestigescore2000)<-c("prestigescore","race")

Figure2<-ggplot(data=prestigescore2000, aes(x=race,y=prestigescore,color=race))+geom_boxplot(outlier.colour="red",outlier.shape=8,outlier.size=4)+ stat_summary(geom="text",fun.y=quantile,aes(label=sprintf("%1.1f", ..y..), color=factor(race)),position=position_nudge(x=0.33), size=3.5)+scale_fill_brewer(palette="Blues") + theme_classic()+ggtitle("PrestigeScorebyRacein2000")+xlab("PrestigeScore")+ylab("Race")
Figure2
```



Prestige Score by Race for year 2010

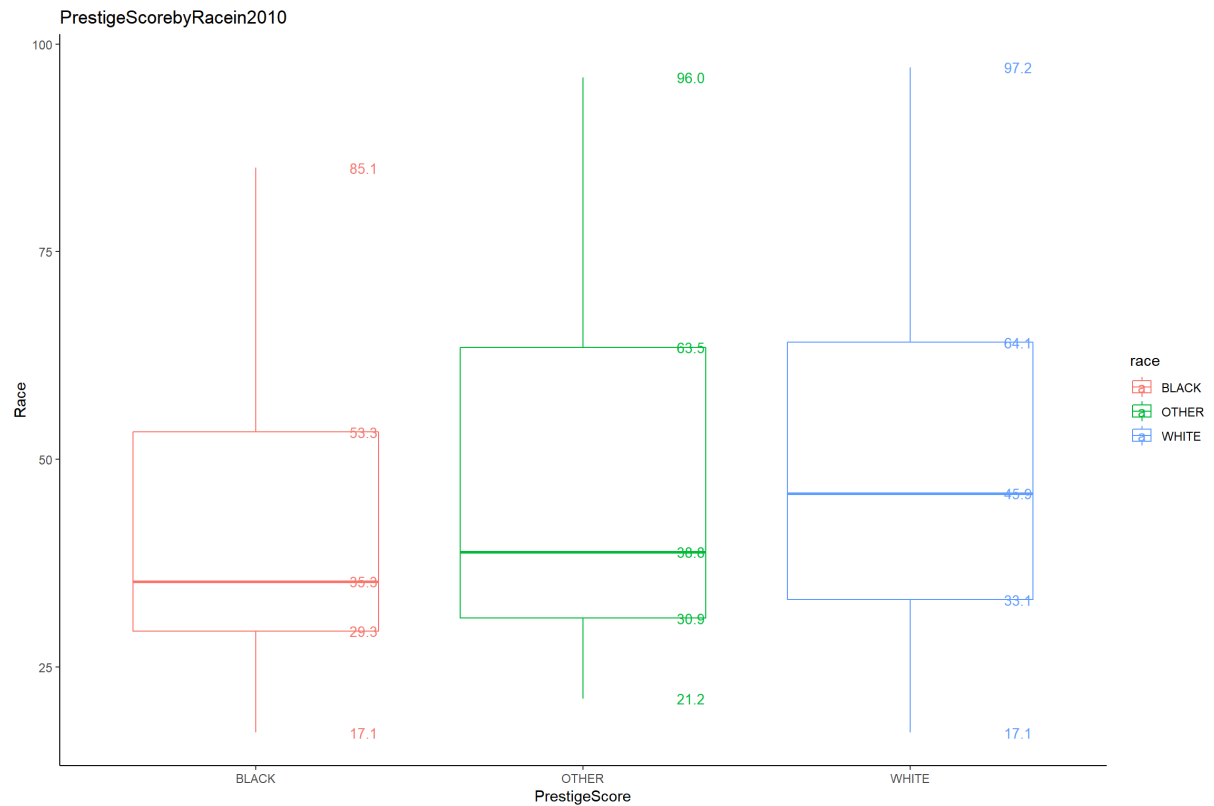
Hide

```
question2010<-filter(assignment2,year==2010,race %in% c("WHITE","BLACK","OTHER"),sei!="NA")
prestigescore2010<-data.frame(question2010$sei,question2010$race)
prestigescore2010 %>% glimpse()
```

```
## Observations: 1,369
## Variables: 2
## $ question2010.sei <dbl> 76.4, 85.1, 32.3, 63.5, 31.2, 34.4, 28.4, 28...
## $ question2010.race <fct> OTHER, WHITE, BLACK, BLACK, BLACK, BLACK, BL...
```

Hide

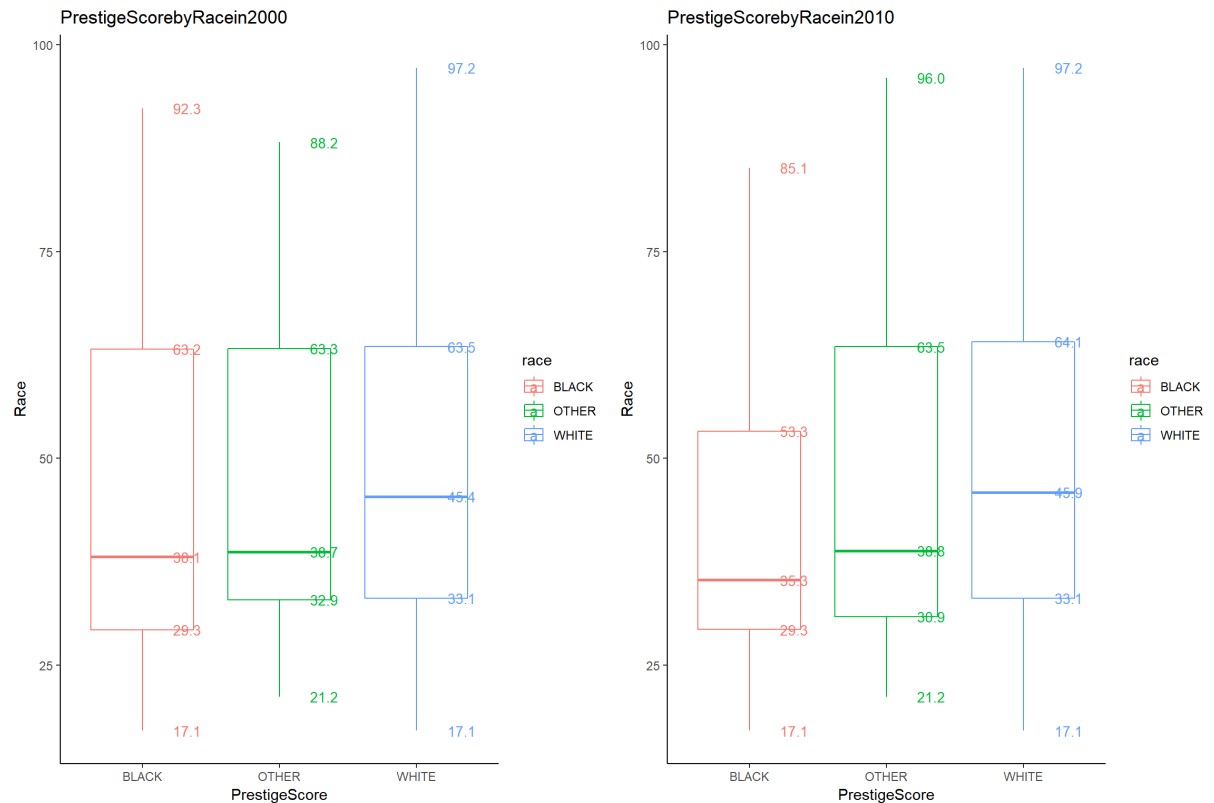
```
colnames(prestigescore2010)<-c("prestigescore","race")
Figure3<-ggplot(data=prestigescore2010, aes(x=race,y=prestigescore,color=race))+geom_boxplot(outlier.color="red",outlier.sha
pe=8,outlier.size=4)+ stat_summary(geom="text",fun.y=quantile,aes(label=sprintf("%1.1f", ..y..), color=factor(race)),positio
n=position_nudge(x=0.33), size=3.5)+scale_fill_brewer(palette="Blues") + theme_classic()+ggtitle("PrestigeScorebyRacein2010"
)+xlab("PrestigeScore")+ylab("Race")
Figure3
```



Prestige Score by Race for year 2000 vs 2010

Hide

```
Figure2vs3<- ggarrange(Figure2,Figure3,ncol = 2, nrow = 1)
Figure2vs3
```



SEI score<sup>1,2</sup> is determined based on individual occupation. After observing the results, it seems, black and other races prestige median scores are equal compared to white individuals in 2000. Interesting comparison between the two graphs are; Minimum prestige score has not changed from 2000 to 2010. However, there are slight changes in median scores between 2000 and 2010. White individuals recorded the highest prestige score assuming they have a decent occupation. In 2010, other race type individuals saw a spike in highest SEI score compare to 2000 although there are no significant changes in quartiles and median scores.

## Exploratory Question 3 and 4:

## Prestige Score by region: 2000

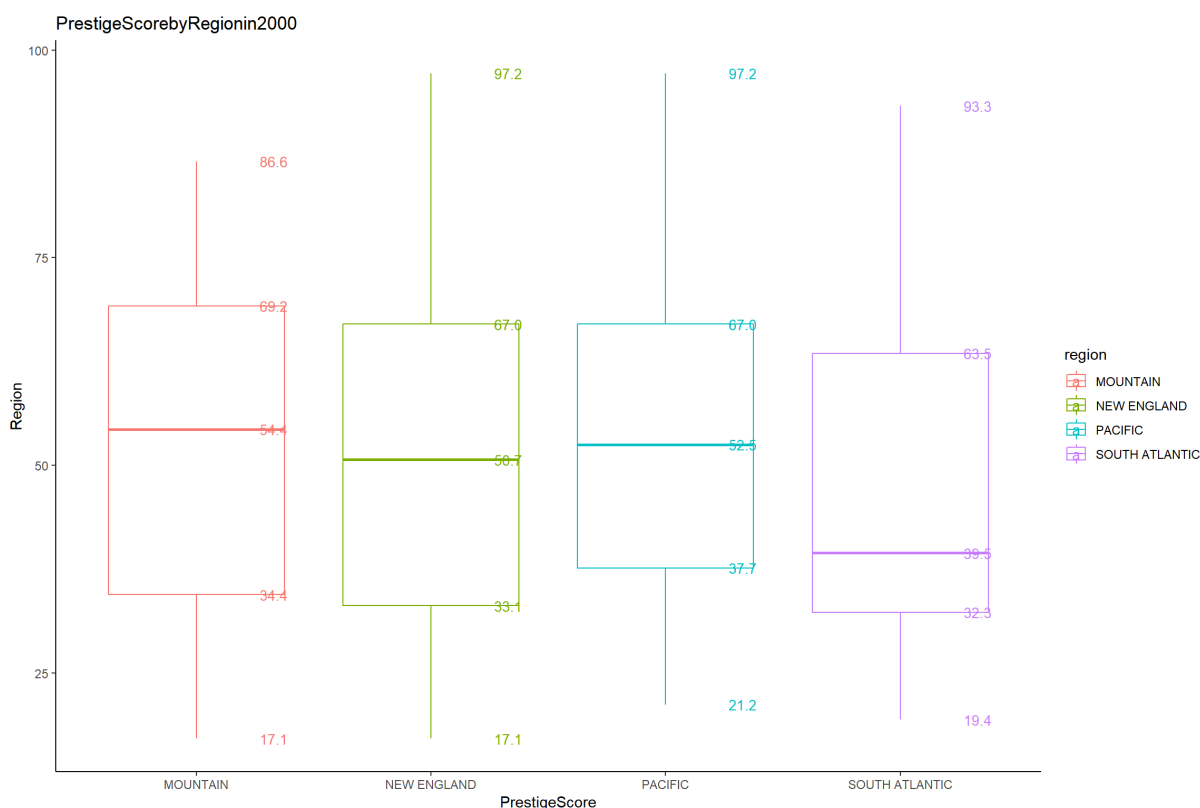
Hide

```
PSRegion<-filter(assignment2,year==2000,region %in% c("%E.NOR. CENTRAL%", "%E.SOU. CENTRAL%", "%MIDDLE ATLANTIC%", "MOUNTAIN",
"NEW ENGLAND", "PACIFIC", "SOUTH ATLANTIC", "%W.NOR. CENTRAL%", "%W.SOU. CENTRAL%"),sei!="NA")
PSRegion1<-data.frame(PSRegion$sei,PSRegion$region)
PSRegion1 %>% glimpse()
```

```
## Observations: 582
## Variables: 2
## $ PSRegion.sei    <dbl> 64.8, 63.5, 33.1, 76.3, 80.9, 56.6, 36.5, 63.5...
## $ PSRegion.region <fct> SOUTH ATLANTIC, SOUTH ATLANTIC, SOUTH ATLANTIC...
```

Hide

```
colnames(PSRegion1)<-c("prestigescore", "region")
Figure4<-ggplot(data=PSRegion1, aes(x=region,y=prestigescore,color=region))+geom_boxplot(outlier.colour="red",outlier.shape=
8,outlier.size=4)+ stat_summary(geom="text",fun.y=quantile,aes(label=sprintf("%1.1f", ..y..), color=factor(region)),position
=position_nudge(x=0.33), size=3.5)+scale_fill_brewer(palette="Blues") + theme_classic()+ggtitle("PrestigeScorebyRegionin200
0")+xlab("PrestigeScore")+ylab("Region")
Figure4
```



## Prestige Score by region: 2010

Hide

```
PSRegion2<-filter(assignment2,year==2010,region %in% c("%E.NOR. CENTRAL%", "%E.SOU. CENTRAL%", "%MIDDLE ATLANTIC%", "MOUNTAIN",
"NEW ENGLAND", "PACIFIC", "SOUTH ATLANTIC", "%W.NOR. CENTRAL%", "%W.SOU. CENTRAL%"),sei!="NA")
PSRegion3<-data.frame(PSRegion2$sei,PSRegion2$region)
PSRegion3 %>% glimpse()
```

```
## Observations: 645
## Variables: 2
## $ PSRegion2.sei    <dbl> 38.5, 26.4, 69.2, 86.6, 63.2, 78.5, 27.5, 26...
## $ PSRegion2.region <fct> NEW ENGLAND, NEW ENGLAND, NEW ENGLAND, NEW EN...
```

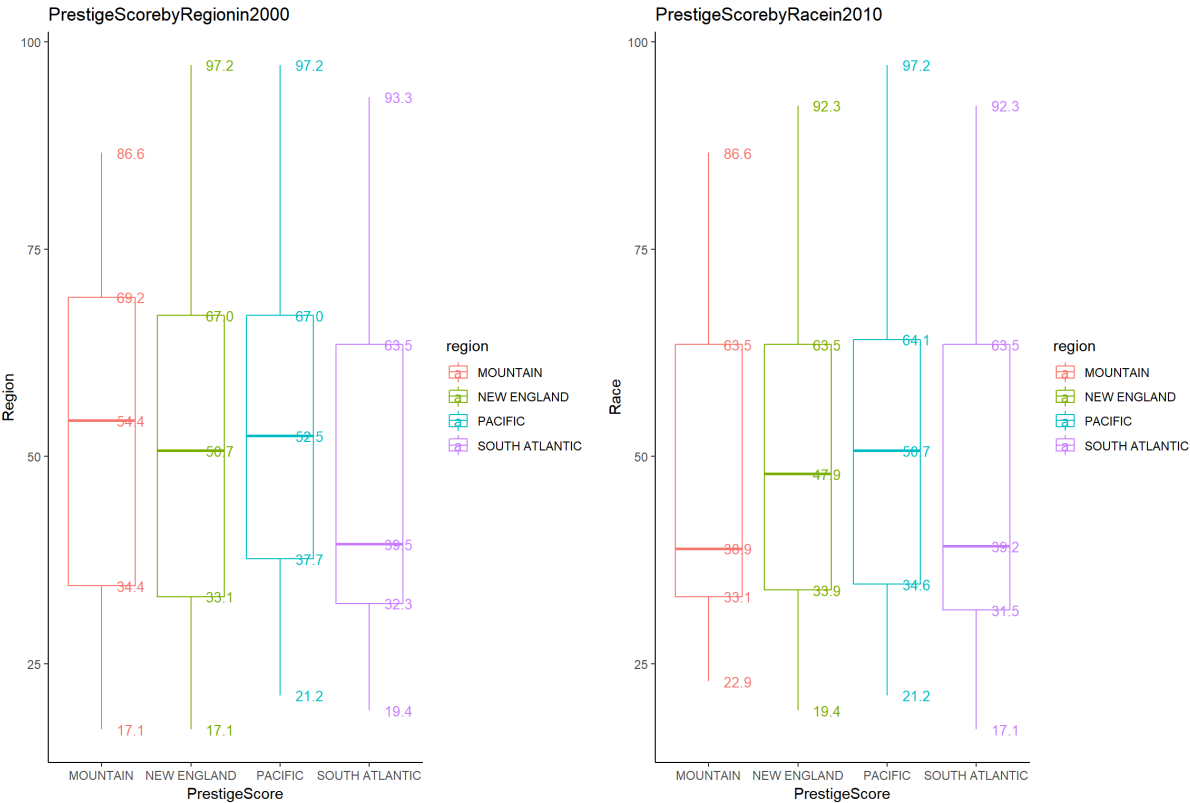
Hide

```
colnames(PSRegion3)<-c("prestigescore","region")

Figure5<-ggplot(data=PSRegion3, aes(x=region,y=prestigescore,color=region))+geom_boxplot(outlier.color="red",outlier.shape=8
,outlier.size=4)+ stat_summary(geom="text",fun.y=quantile,aes(label=sprintf("%1.1f", ..y..), color=factor(region)),position=
position_nudge(x=0.33), size=3.5)+scale_fill_brewer(palette="Blues") + theme_classic()+ggtitle("PrestigeScorebyRacein2010")+
xlab("PrestigeScore")+ylab("Race")

Figure4vs5<-ggarrange(Figure4,Figure5,ncol=2,nrow=1)

Figure4vs5
```



After analyzing the prestige scores by race, we thought, it would be better to construct a graph to see what regions have the highest prestige scores and how they have been changing over time. It explains the economy of countries within these regions. First; we interpret the results for individual graphs; in 2000, though New England and Pacific regions have the highest prestige score, (it is determined in previous paragraphs) mountain region has the highest median scores, which could tell us how occupations are being equally credited in this region. Interestingly, there is no much difference in medians between Pacific, Mountain and New England. However, Mountain takes the stab of having the lowest prestige score compared to others in 2000. South Atlantic region countries seem are not doing an excellent job in maintaining the prestige of their occupations compare to other regions, but, south Atlantic stands in the race for highest prestige score with minimum difference. Prestige scores comparison 2000vs 2010; interestingly, Pacific region does not change much with regards to the highest prestige score since 2000 although it saw a drop in median score in 2010. Mountain region median prestige score seems dropped tremendously in 2010 although not much decrease in upper quartile and no change in max prestige score. New England also had a drop in max, top quartile, median. However, there is a slight increase in min prestige score, which seems reasonable. Pacific region countries prestige scores seems not much a difference from 2000. However, minor changes are being observed in the upper and lower quartiles and median as well.

Exploratory Question 5 and 6: Tv hours by region  
for Year 2000

Hide

```
assignment2 %>% glimpse()
```

```
## Observations: 3,000
## Variables: 51
## $ X      <int> 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16...
## $ abany   <fct> NA, NA, NA, NA, YES, NO, YES, NA, NO, NO, NO, NA, NA,...
## $ abdefect <fct> NA, NA, NA, NA, YES, YES, YES, NA, YES, NO, NO, NA, N...
## $ abhlth   <fct> NA, NA, NA, NA, YES, YES, YES, NA, YES, NO, NO, NA, N...
## $ abrape   <fct> NA, NA, NA, NA, YES, YES, YES, NA, YES, NO, NO, NA, N...
## $ absingle <fct> NA, NA, NA, NA, YES, NO, YES, NA, NO, NO, NO, NA, NA,...
## $ age      <fct> 31, 23, 82, 40, 46, 31, NA, 31, 21, 58, 36, 57, 84, 3...
## $ aged     <fct> A GOOD IDEA, DEPENDS, A GOOD IDEA, DEPENDS, A GOOD ID...
## $ attend   <fct> ONCE A YR THRU SEV TIMES A YEAR, LT ONCE A YEAR, ONCE...
## $ cappun   <fct> NA, OPPOSE, OPPOSE, OPPOSE, OPPOSE, OPPOSE, OPPOSE, F...
## $ childs   <fct> 0, 0, 5, 2, 1, 3, 2, 1, 0, 2, 3, 1, 3, 0, 0, 5, 2, 4,...
## $ coneduc  <fct> ONLY SOME, ONLY SOME, A GREAT DEAL, ONLY SOME, ONLY S...
## $ compress <fct> ONLY SOME, HARDLY ANY, A GREAT DEAL, ONLY SOME, ONLY ...
## $ degree   <fct> BACHELOR, BACHELOR, LT HIGH SCHOOL, LT HIGH SCHOOL, J...
## $ divlaw   <fct> EASIER, STAY SAME, MORE DIFFICULT, EASIER, NA, NA, EA...
## $ eqwlth   <fct> 3, 2, NO GOVT ACTION, 4, 4, 4, NA, GOVT REDUCE DIFF, ...
## $ fechld   <fct> AGREE, AGREE, DISAGREE, AGREE, NA, NA, STRONGLY AGREE...
## $ fefam    <fct> NA, STRONGLY DISAGREE, DISAGREE, AGREE, NA, NA, STRON...
## $ fepol    <fct> DISAGREE, DISAGREE, DISAGREE, NA, NA, NA, DISAGREE, D...
## $ finalter <fct> BETTER, STAYED SAME, WORSE, WORSE, WORSE, BETTER, WOR...
## $ goodlife <fct> AGREE, AGREE, STRONGLY AGREE, NEITHER, AGREE, STRONGL...
## $ grass    <fct> NA, LEGAL, NOT LEGAL, LEGAL, NA, NOT LEGAL, NA, NA, N...
## $ gunlaw   <fct> NA, NA, NA, NA, FAVOR, FAVOR, FAVOR, NA, FAVOR, FAVOR...
## $ happy    <fct> PRETTY HAPPY, NOT TOO HAPPY, NOT TOO HAPPY, PRETTY HA...
## $ health   <fct> NA, NA, NA, NA, GOOD, EXCELLENT, EXCELLENT, NA, GOOD,...
## $ helpful  <fct> LOOKOUT FOR SELF, LOOKOUT FOR SELF, LOOKOUT FOR SELF,...
## $ homosex  <fct> NA, NA, NA, NA, NOT WRONG AT ALL, NA, ALWAYS WRONG, N...
## $ kidssol  <fct> MUCH BETTER, ABOUT THE SAME, MUCH BETTER, SOMEWHAT BE...
## $ letdie1  <fct> NA, YES, NO, NO, NA, NA, YES, NO, YES, NO, NO, NO, NO...
## $ marital  <fct> NEVER MARRIED, NEVER MARRIED, WIDOWED, NEVER MARRIED,...
## $ natcrime <fct> NA, TOO LITTLE, NA, TOO LITTLE, NA, TOO LITTLE, NA, A...
## $ nateduc  <fct> NA, TOO LITTLE, NA, TOO LITTLE, NA, TOO LITTLE, NA, T...
## $ partyid  <fct> DEMOCRAT, DEMOCRAT, REPUBLICAN, DEMOCRAT, INDEPENDENT...
## $ polviews <fct> LIBERAL, LIBERAL, LIBERAL, LIBERAL, CONSERVATIVE, LIB...
## $ owngun   <fct> NA, NA, NA, NA, NO, NO, NO, NA, NO, NO, NO, NA, NA, N...
## $ premarsx <fct> NOT WRONG AT ALL, NOT WRONG AT ALL, SOMETIMES WRONG, ...
## $ race     <fct> OTHER, WHITE, WHITE, BLACK, BLACK, BLACK, BLACK, BLAC...
## $ region   <fct> MIDDLE ATLANTIC, MIDDLE ATLANTIC, MIDDLE ATLANTIC, MI...
## $ relig    <fct> CATHOLIC, NONE, CATHOLIC, NONE, CATHOLIC, CATHOLIC, C...
## $ satfin   <fct> MORE OR LESS, MORE OR LESS, SATISFIED, MORE OR LESS, ...
## $ sei      <dbl> 76.4, 85.1, NA, 32.3, 63.5, NA, 31.2, 34.4, NA, 28.4,...
## $ sex      <fct> MALE, FEMALE, FEMALE, MALE, FEMALE, FEMALE, FEMALE, F...
## $ sexfreq  <fct> ONCE A YR THRU ONCE A MNTH, WEEKLY, NA, NA, NA, NA, N...
## $ sibs     <int> 2, 3, 10, 11, 2, 1, 7, 6, 3, 4, 4, 5, 2, 1, 1, 3, 14,...
## $ socfrend <fct> SEV TIMES A MNTH, SEV TIMES A WEEK OR MORE, ONCE A YE...
## $ soccommun <fct> ONCE A YEAR OR LESS, ONCE A MONTH, ONCE A YEAR OR LES...
## $ suicide1 <fct> NA, YES, NO, NO, NA, NA, YES, NO, YES, NO, NO, YES, Y...
## $ tvhours  <int> 1, 0, 3, 4, NA, NA, 1, 4, 2, 2, 2, 6, 5, 0, 0, 5, 4, ...
## $ year     <int> 2010, 2010, 2010, 2010, 2010, 2010, 2010, 2010, 2010,...
## $ age3     <fct> 18 THRU 36, 18 THRU 36, 54 THRU 89, 37 THRU 53, 37 TH...
## $ SEI3     <fct> HIGH, HIGH, NA, LOW, HIGH, NA, LOW, LOW, NA, LOW, NA,...
```

Hide

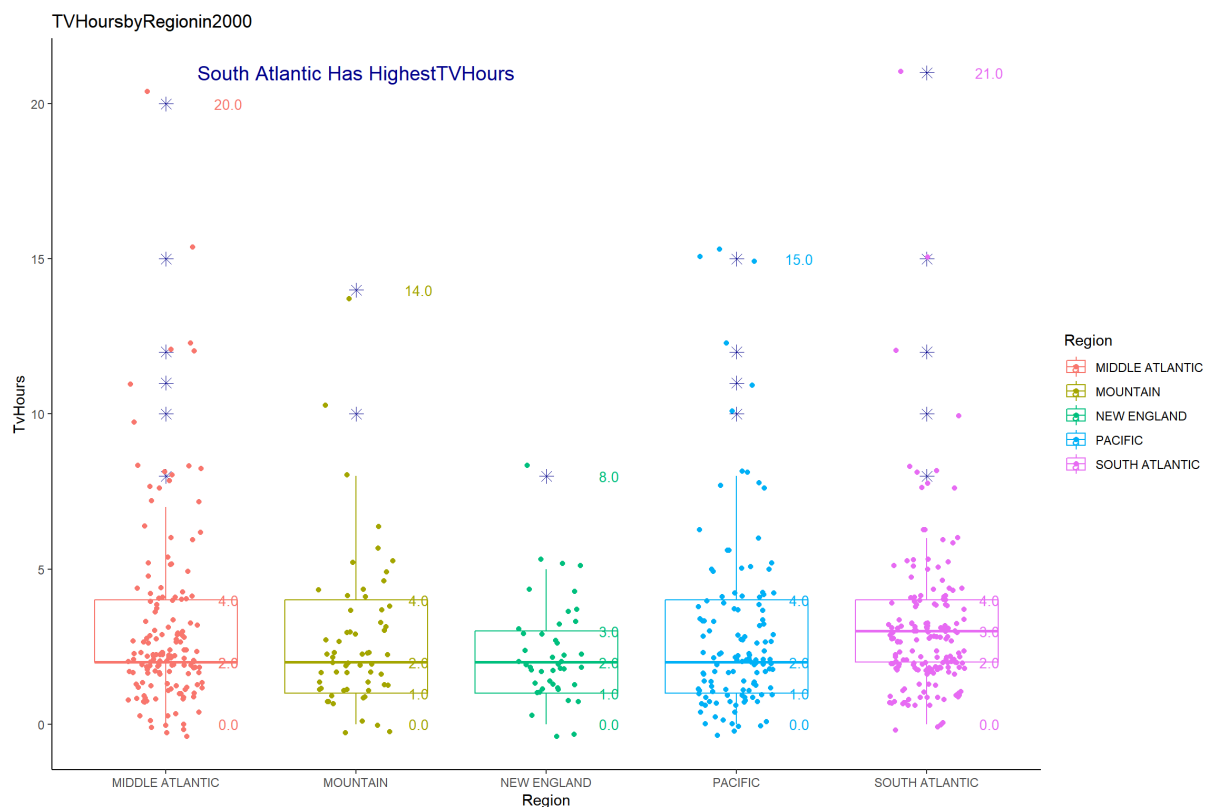
```
tvhours<- filter(assignment2, year==2000,region %in% c("E.NOR. CENTRAL","E.SOU. CENTRAL","MIDDLE ATLANTIC","MOUNTAIN","NEW E
NGLAND","PACIFIC","SOUTH ATLANTIC","W.NOR. CENTRAL","W.SOU. CENTRAL"),tvhours!="NA")
tvhoursbyregion<-data.frame(tvhours$year,tvhours$region,tvhours$tvhours)
tvhoursbyregion %>% glimpse()
```

```
## Observations: 561
## Variables: 3
## $ tvhours.year   <int> 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000...
## $ tvhours.region <fct> MIDDLE ATLANTIC, MIDDLE ATLANTIC, MIDDLE ATLAN...
## $ tvhours.tvhours <int> 3, 3, 3, 0, 12, 0, 3, 5, 1, 3, 4, 2, 6, 2, 2, ...
```

Hide

```
colnames(tvhoursbyregion)<-c("year","Region","TvHours")
Figure6<-ggplot(data=tvhoursbyregion,aes(x=Region,y=TVHours,color=Region))+geom_boxplot(outlier.color="darkblue",outlier.sha
pe=8,outlier.size=3,notch=FALSE)+stat_summary(geom="text",fun.y=quantile,aes(label=sprintf("%1.1f", ..y..),color=factor(Regi
on)),position=position_nudge(x=0.33), size=3.5)+scale_fill_brewer(palette="Blues")+theme_classic()+ggtitle("TVHoursbyRegioni
n2000")+geom_jitter(shape=16,position=position_jitter(0.2))+annotate(geom="text",x=2,y=21,size=5,label="South Atlantic Has H
ighestTVHours",color="darkblue")
```

Figure6



for Year 2010

Hide

```
tvhours<- filter(assignment2, year==2010,region %in% c("E.NOR. CENTRAL","E.SOU. CENTRAL","MIDDLE ATLANTIC","MOUNTAIN","NEW E
NGLAND","PACIFIC","SOUTH ATLANTIC","W.NOR. CENTRAL","W.SOU. CENTRAL"),tvhours!="NA")
tvhoursbyregion<-data.frame(tvhours$year,tvhours$region,tvhours$tvhours)
tvhoursbyregion %>% glimpse()
```

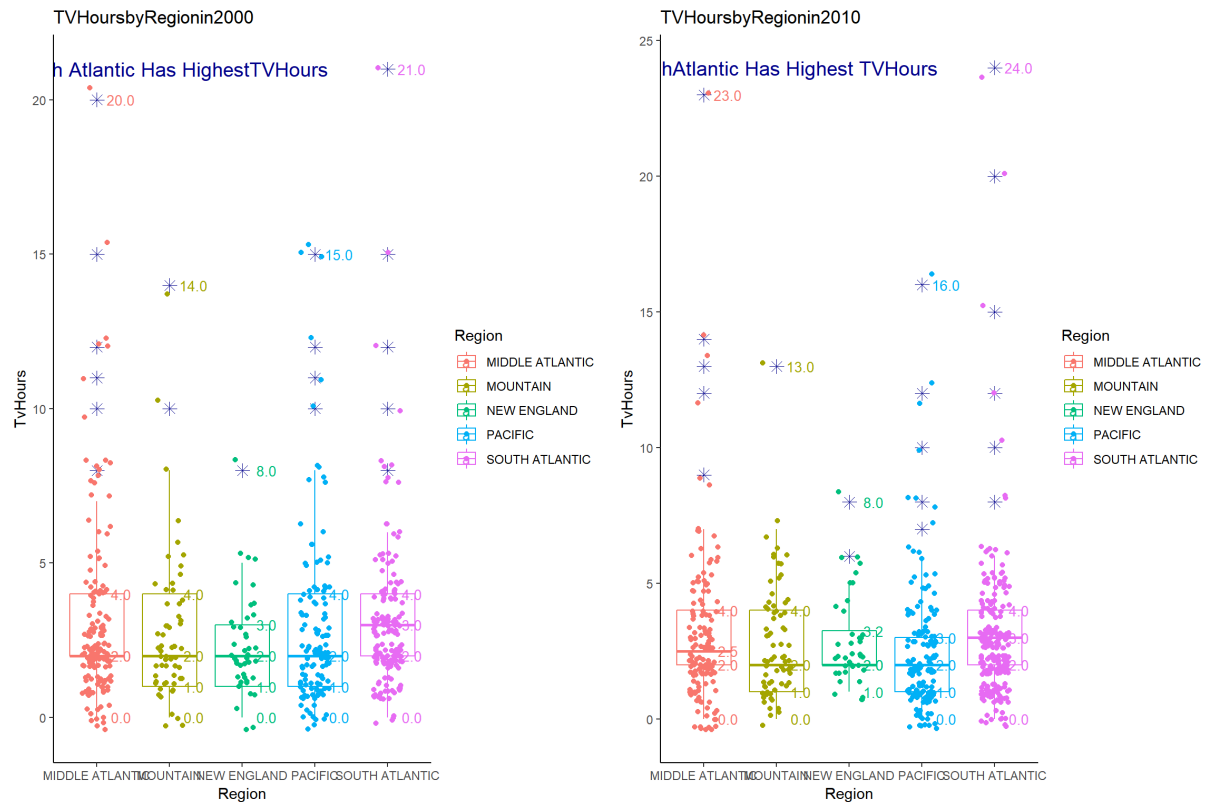
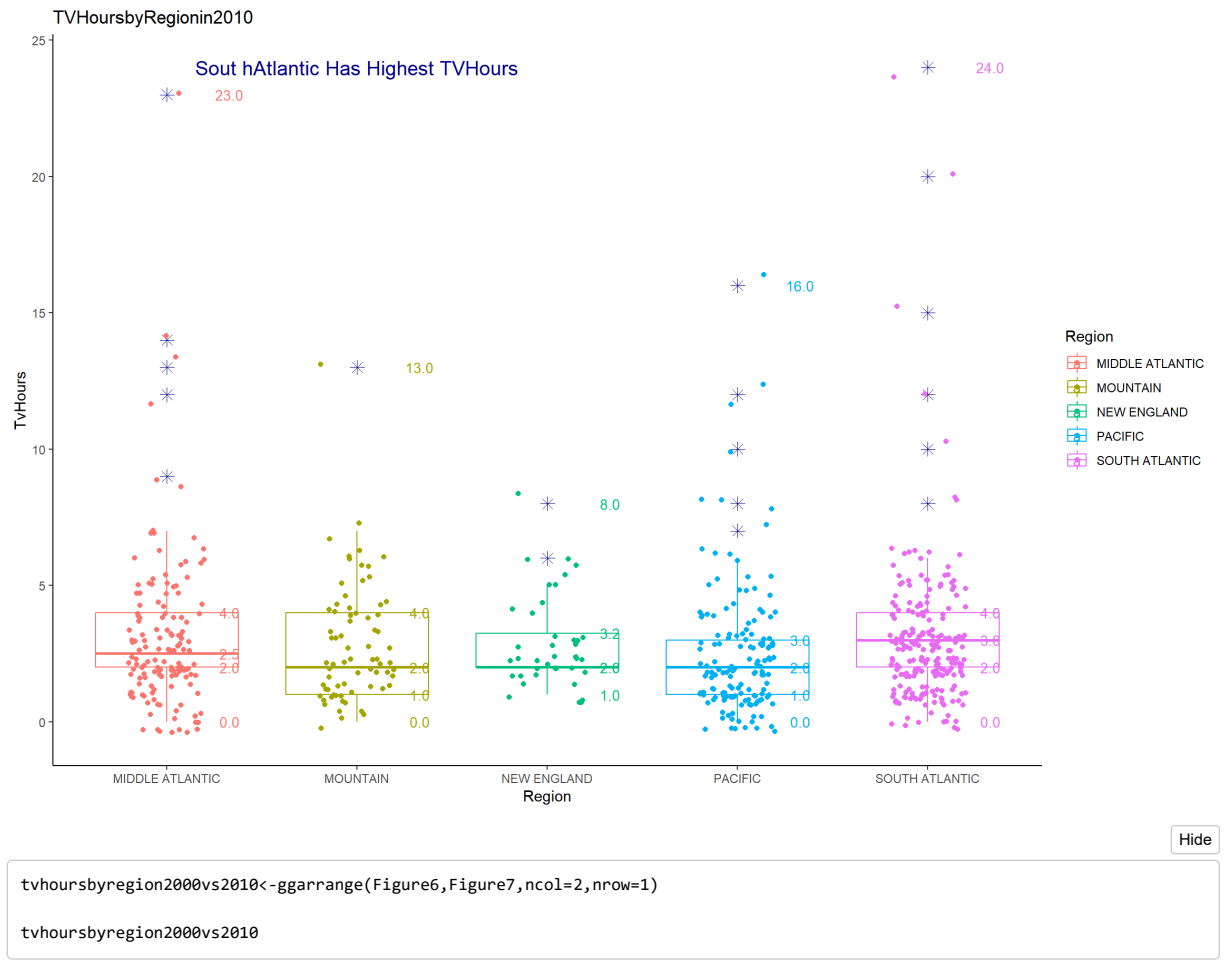
```
## Observations: 621
## Variables: 3
## $ tvhours.year    <int> 2010, 2010, 2010, 2010, 2010, 2010, 2010, 2010...
## $ tvhours.region  <fct> MIDDLE ATLANTIC, MIDDLE ATLANTIC, MIDDLE ATLANTIC...
## $ tvhours.tvhours <int> 1, 0, 3, 4, 1, 4, 2, 2, 2, 6, 5, 0, 0, 5, 4, 4...
```

Hide

```
colnames(tvhoursbyregion)<-c("year","Region","TvHours")
```

```
Figure7<-ggplot(data=tvhoursbyregion,aes(x=Region,y=TvHours,color=Region))+geom_boxplot(outlier.color="darkblue",outlier.sha
pe=8,outlier.size=3,notch=FALSE)+stat_summary(geom="text",fun.y=quantile,aes(label=sprintf("%1.1f", ..y..),color=factor(Regi
on)),position=position_nudge(x=0.33), size=3.5)+scale_fill_brewer(palette="Blues")+theme_classic()+ggtitle("TVHoursbyRegioni
n2010")+geom_jitter(shape=16,position=position_jitter(0.2))+annotate(geom="text",x=2,y=24,size=5,label="Sout hAtlantic Has H
ighest TVHours",color="darkblue")
Figure7
```





Visual Breif For Figure 6 vs 7

This graph explains; the number of hours an individual may watch television on a given day by region. The findings are as follows; in 2000, median and min hours seems the same for all five areas; however, there are differences in maximum hours. Middle Atlantic and south Atlantic sample have recorded maximum hours. We could say it was just entered for fun since no individual can watch television for 20/21 hours. If we compare 2000

results with 2010, we see a difference in maximum television hours, but regions remain the same, which seems unusual. Another observation would be; no changes in New England Values. We can conclude this interpretation by saying, Middle Atlantic and South Atlantic countries are watching more television and seems no many differences from 2000 to 2010 although there is a big difference in globalization.

Exploratory Question 8: Tv hours by age in a given day

Hide

```
tvhoursbyage<-filter(assignment2,age3 %in% c("18 THRU 36","37 THRU 53","54 THRU 89","NA"),tvhours!="NA")
tvhoursbyage1<-data.frame(tvhoursbyage$age3,tvhoursbyage$tvhours)
tvhoursbyage1%>% glimpse
```

```
## Observations: 2,025
## Variables: 2
## $ tvhoursbyage.age3    <fct> 18 THRU 36, 18 THRU 36, 54 THRU 89, 37 TH...
## $ tvhoursbyage.tvhours <int> 1, 0, 3, 4, 4, 2, 2, 2, 6, 5, 0, 0, 5, 4,...
```

Hide

```
kable(tvhoursbyage1)
```

tvhoursbyage.age3	tvhoursbyage.tvhours
18 THRU 36	1
18 THRU 36	0
54 THRU 89	3
37 THRU 53	4
18 THRU 36	4
18 THRU 36	2
54 THRU 89	2
18 THRU 36	2
54 THRU 89	6
54 THRU 89	5
18 THRU 36	0
37 THRU 53	0
54 THRU 89	5
54 THRU 89	4
18 THRU 36	4
18 THRU 36	0
18 THRU 36	6
18 THRU 36	1
54 THRU 89	3
54 THRU 89	3
37 THRU 53	2
54 THRU 89	5
18 THRU 36	3
18 THRU 36	3
54 THRU 89	3
18 THRU 36	3
37 THRU 53	1
37 THRU 53	2
54 THRU 89	4
54 THRU 89	2
18 THRU 36	0
18 THRU 36	2
18 THRU 36	3

tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	2
54 THRU 89	5
37 THRU 53	4
18 THRU 36	7
37 THRU 53	1
37 THRU 53	4
37 THRU 53	4
37 THRU 53	1
37 THRU 53	2
37 THRU 53	1
54 THRU 89	3
37 THRU 53	9
37 THRU 53	4
54 THRU 89	3
54 THRU 89	5
37 THRU 53	2
18 THRU 36	3
37 THRU 53	2
18 THRU 36	2
37 THRU 53	1
54 THRU 89	2
37 THRU 53	3
37 THRU 53	1
54 THRU 89	6
54 THRU 89	3
37 THRU 53	3
37 THRU 53	3
37 THRU 53	0
18 THRU 36	7
37 THRU 53	2
54 THRU 89	3
18 THRU 36	3
37 THRU 53	2
18 THRU 36	2
18 THRU 36	1
18 THRU 36	0
54 THRU 89	1
54 THRU 89	2
37 THRU 53	1
37 THRU 53	2
37 THRU 53	4
18 THRU 36	1
54 THRU 89	1
18 THRU 36	0
37 THRU 53	2
37 THRU 53	0

tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	1
18 THRU 36	3
37 THRU 53	6
54 THRU 89	2
18 THRU 36	2
54 THRU 89	2
54 THRU 89	4
18 THRU 36	2
18 THRU 36	1
18 THRU 36	4
18 THRU 36	3
37 THRU 53	1
18 THRU 36	3
18 THRU 36	1
18 THRU 36	1
37 THRU 53	3
18 THRU 36	12
18 THRU 36	1
37 THRU 53	0
37 THRU 53	3
18 THRU 36	0
18 THRU 36	0
54 THRU 89	2
54 THRU 89	3
54 THRU 89	1
54 THRU 89	4
18 THRU 36	3
37 THRU 53	7
54 THRU 89	6
18 THRU 36	6
37 THRU 53	1
18 THRU 36	2
18 THRU 36	4
18 THRU 36	3
37 THRU 53	2
37 THRU 53	1
54 THRU 89	3
54 THRU 89	1
18 THRU 36	3
54 THRU 89	3
54 THRU 89	3
54 THRU 89	3
37 THRU 53	2
18 THRU 36	4
37 THRU 53	3
54 THRU 89	1

tvhoursbyage.age3	tvhoursbyage.tvhours
54 THRU 89	2
54 THRU 89	8
54 THRU 89	2
18 THRU 36	2
37 THRU 53	1
18 THRU 36	1
18 THRU 36	4
37 THRU 53	3
54 THRU 89	3
37 THRU 53	0
54 THRU 89	2
18 THRU 36	2
18 THRU 36	4
37 THRU 53	3
37 THRU 53	3
37 THRU 53	3
18 THRU 36	1
18 THRU 36	0
18 THRU 36	1
18 THRU 36	3
54 THRU 89	2
54 THRU 89	1
18 THRU 36	3
37 THRU 53	5
37 THRU 53	1
54 THRU 89	2
18 THRU 36	0
54 THRU 89	5
37 THRU 53	2
54 THRU 89	3
37 THRU 53	2
37 THRU 53	0
37 THRU 53	5
54 THRU 89	2
54 THRU 89	9
37 THRU 53	4
37 THRU 53	5
37 THRU 53	2
54 THRU 89	3
37 THRU 53	4
37 THRU 53	2
54 THRU 89	6
18 THRU 36	0
18 THRU 36	2
18 THRU 36	2
18 THRU 36	2

tvhoursbyage.age3	tvhoursbyage.tvhours
54 THRU 89	6
37 THRU 53	2
18 THRU 36	1
18 THRU 36	23
54 THRU 89	1
54 THRU 89	1
37 THRU 53	2
18 THRU 36	0
18 THRU 36	13
18 THRU 36	12
37 THRU 53	2
54 THRU 89	0
37 THRU 53	4
54 THRU 89	10
54 THRU 89	1
37 THRU 53	4
54 THRU 89	2
37 THRU 53	2
54 THRU 89	6
54 THRU 89	2
18 THRU 36	2
37 THRU 53	2
18 THRU 36	0
37 THRU 53	1
54 THRU 89	3
54 THRU 89	3
54 THRU 89	21
54 THRU 89	24
37 THRU 53	7
37 THRU 53	2
54 THRU 89	4
37 THRU 53	3
54 THRU 89	7
18 THRU 36	1
37 THRU 53	4
18 THRU 36	2
18 THRU 36	1
18 THRU 36	7
18 THRU 36	0
18 THRU 36	2
37 THRU 53	2
37 THRU 53	1
37 THRU 53	1
37 THRU 53	0
54 THRU 89	3
37 THRU 53	2

tvhoursbyage.age3	tvhoursbyage.tvhours
18 THRU 36	1
37 THRU 53	5
18 THRU 36	3
18 THRU 36	4
37 THRU 53	3
37 THRU 53	5
54 THRU 89	6
18 THRU 36	3
54 THRU 89	1
18 THRU 36	2
54 THRU 89	2
54 THRU 89	3
18 THRU 36	1
54 THRU 89	2
37 THRU 53	2
18 THRU 36	3
37 THRU 53	1
54 THRU 89	5
37 THRU 53	2
54 THRU 89	2
54 THRU 89	2
54 THRU 89	4
37 THRU 53	2
18 THRU 36	3
18 THRU 36	2
18 THRU 36	5
18 THRU 36	8
37 THRU 53	2
18 THRU 36	4
54 THRU 89	3
54 THRU 89	5
37 THRU 53	2
37 THRU 53	3
18 THRU 36	5
37 THRU 53	3
37 THRU 53	2
54 THRU 89	3
37 THRU 53	2
54 THRU 89	1
54 THRU 89	3
54 THRU 89	4
18 THRU 36	4
54 THRU 89	2
54 THRU 89	1
54 THRU 89	3
54 THRU 89	6

tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	2
18 THRU 36	2
54 THRU 89	4
37 THRU 53	2
37 THRU 53	3
37 THRU 53	2
37 THRU 53	1
18 THRU 36	1
37 THRU 53	1
54 THRU 89	3
18 THRU 36	1
37 THRU 53	3
18 THRU 36	2
37 THRU 53	2
18 THRU 36	4
18 THRU 36	6
54 THRU 89	3
54 THRU 89	3
54 THRU 89	7
18 THRU 36	1
54 THRU 89	6
54 THRU 89	3
54 THRU 89	3
54 THRU 89	3
54 THRU 89	2
37 THRU 53	3
18 THRU 36	4
54 THRU 89	2
18 THRU 36	2
18 THRU 36	0
18 THRU 36	3
54 THRU 89	2
54 THRU 89	3
18 THRU 36	1
54 THRU 89	1
18 THRU 36	2
37 THRU 53	1
54 THRU 89	4
18 THRU 36	1
37 THRU 53	3
54 THRU 89	2
18 THRU 36	2
37 THRU 53	3
37 THRU 53	4
54 THRU 89	2
54 THRU 89	2



tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	1
54 THRU 89	3
37 THRU 53	1
18 THRU 36	1
54 THRU 89	6
54 THRU 89	5
18 THRU 36	1
37 THRU 53	3
37 THRU 53	1
54 THRU 89	3
54 THRU 89	3
54 THRU 89	4
37 THRU 53	6
37 THRU 53	5
54 THRU 89	0
18 THRU 36	2
54 THRU 89	3
54 THRU 89	1
37 THRU 53	1
54 THRU 89	7
54 THRU 89	1
54 THRU 89	8
18 THRU 36	3
37 THRU 53	0
54 THRU 89	10
54 THRU 89	3
54 THRU 89	14
37 THRU 53	1
37 THRU 53	4
18 THRU 36	8
18 THRU 36	3
37 THRU 53	1
37 THRU 53	2
54 THRU 89	2
54 THRU 89	5
37 THRU 53	2
37 THRU 53	2
37 THRU 53	2
37 THRU 53	20
18 THRU 36	4
18 THRU 36	2
54 THRU 89	0
54 THRU 89	1
54 THRU 89	3
54 THRU 89	3
37 THRU 53	2

tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	7
18 THRU 36	6
18 THRU 36	1
18 THRU 36	2
37 THRU 53	1
54 THRU 89	4
18 THRU 36	3
54 THRU 89	1
37 THRU 53	1
37 THRU 53	1
37 THRU 53	12
54 THRU 89	0
54 THRU 89	8
37 THRU 53	6
54 THRU 89	3
18 THRU 36	2
54 THRU 89	14
18 THRU 36	0
18 THRU 36	2
18 THRU 36	4
37 THRU 53	5
37 THRU 53	2
54 THRU 89	0
18 THRU 36	2
18 THRU 36	1
37 THRU 53	2
37 THRU 53	4
18 THRU 36	5
54 THRU 89	5
37 THRU 53	6
54 THRU 89	1
37 THRU 53	0
54 THRU 89	8
54 THRU 89	2
37 THRU 53	1
37 THRU 53	2
18 THRU 36	1
18 THRU 36	3
18 THRU 36	2
54 THRU 89	2
54 THRU 89	2
37 THRU 53	2
37 THRU 53	2
54 THRU 89	3
37 THRU 53	5
18 THRU 36	0

tvhoursbyage.age3	tvhoursbyage.tvhours
18 THRU 36	2
18 THRU 36	7
18 THRU 36	5
18 THRU 36	0
18 THRU 36	1
18 THRU 36	2
54 THRU 89	2
54 THRU 89	2
18 THRU 36	1
54 THRU 89	4
54 THRU 89	2
54 THRU 89	2
54 THRU 89	3
54 THRU 89	7
37 THRU 53	1
54 THRU 89	2
54 THRU 89	2
18 THRU 36	0
18 THRU 36	3
54 THRU 89	3
37 THRU 53	1
18 THRU 36	5
18 THRU 36	0
54 THRU 89	5
18 THRU 36	3
37 THRU 53	3
54 THRU 89	10
54 THRU 89	6
18 THRU 36	1
37 THRU 53	2
18 THRU 36	0
54 THRU 89	2
18 THRU 36	0
37 THRU 53	1
54 THRU 89	5
54 THRU 89	5
54 THRU 89	12
18 THRU 36	9
18 THRU 36	0
54 THRU 89	5
18 THRU 36	3
37 THRU 53	2
54 THRU 89	2
37 THRU 53	2
54 THRU 89	0
18 THRU 36	2

tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	3
18 THRU 36	1
37 THRU 53	2
18 THRU 36	4
54 THRU 89	3
54 THRU 89	2
18 THRU 36	3
18 THRU 36	2
18 THRU 36	1
54 THRU 89	1
18 THRU 36	4
18 THRU 36	2
18 THRU 36	1
37 THRU 53	3
54 THRU 89	3
18 THRU 36	1
18 THRU 36	4
18 THRU 36	1
54 THRU 89	2
37 THRU 53	3
37 THRU 53	13
54 THRU 89	8
37 THRU 53	2
54 THRU 89	5
18 THRU 36	3
54 THRU 89	1
18 THRU 36	1
18 THRU 36	2
18 THRU 36	4
18 THRU 36	3
54 THRU 89	2
37 THRU 53	2
18 THRU 36	3
54 THRU 89	2
18 THRU 36	5
18 THRU 36	2
18 THRU 36	2
54 THRU 89	2
54 THRU 89	1
54 THRU 89	2
54 THRU 89	1
54 THRU 89	6
54 THRU 89	5
18 THRU 36	0
37 THRU 53	3
54 THRU 89	2

tvhoursbyage.age3	tvhoursbyage.tvhours
54 THRU 89	3
54 THRU 89	1
37 THRU 53	2
37 THRU 53	1
54 THRU 89	3
18 THRU 36	1
37 THRU 53	4
18 THRU 36	2
18 THRU 36	1
54 THRU 89	0
37 THRU 53	2
54 THRU 89	4
18 THRU 36	3
18 THRU 36	1
18 THRU 36	0
18 THRU 36	5
37 THRU 53	3
54 THRU 89	0
54 THRU 89	6
37 THRU 53	2
54 THRU 89	3
54 THRU 89	7
54 THRU 89	1
54 THRU 89	2
54 THRU 89	2
18 THRU 36	0
37 THRU 53	2
37 THRU 53	2
54 THRU 89	2
37 THRU 53	2
37 THRU 53	4
18 THRU 36	1
18 THRU 36	3
37 THRU 53	1
54 THRU 89	0
54 THRU 89	4
54 THRU 89	10
37 THRU 53	1
18 THRU 36	3
54 THRU 89	3
37 THRU 53	3
18 THRU 36	1
18 THRU 36	1
18 THRU 36	1
18 THRU 36	4
37 THRU 53	3

tvhoursbyage.age3	tvhoursbyage.tvhours
54 THRU 89	1
18 THRU 36	2
37 THRU 53	1
54 THRU 89	3
18 THRU 36	2
37 THRU 53	8
18 THRU 36	10
54 THRU 89	5
37 THRU 53	1
18 THRU 36	8
54 THRU 89	5
18 THRU 36	2
54 THRU 89	8
54 THRU 89	5
37 THRU 53	4
37 THRU 53	2
37 THRU 53	1
18 THRU 36	5
37 THRU 53	0
18 THRU 36	2
18 THRU 36	1
37 THRU 53	2
54 THRU 89	3
18 THRU 36	1
54 THRU 89	2
37 THRU 53	4
37 THRU 53	5
54 THRU 89	6
18 THRU 36	6
37 THRU 53	3
18 THRU 36	4
18 THRU 36	7
54 THRU 89	4
54 THRU 89	2
54 THRU 89	3
54 THRU 89	5
18 THRU 36	3
18 THRU 36	0
18 THRU 36	0
37 THRU 53	4
54 THRU 89	2
18 THRU 36	2
37 THRU 53	0
54 THRU 89	6
54 THRU 89	1
54 THRU 89	3

tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	5
37 THRU 53	1
18 THRU 36	0
54 THRU 89	8
54 THRU 89	5
54 THRU 89	2
18 THRU 36	4
18 THRU 36	1
54 THRU 89	1
54 THRU 89	3
18 THRU 36	5
37 THRU 53	1
18 THRU 36	4
54 THRU 89	1
37 THRU 53	2
18 THRU 36	3
54 THRU 89	5
37 THRU 53	1
54 THRU 89	3
18 THRU 36	1
54 THRU 89	4
37 THRU 53	5
37 THRU 53	3
37 THRU 53	4
18 THRU 36	0
37 THRU 53	0
54 THRU 89	1
54 THRU 89	3
37 THRU 53	3
54 THRU 89	0
37 THRU 53	3
18 THRU 36	3
37 THRU 53	4
54 THRU 89	0
18 THRU 36	3
54 THRU 89	4
37 THRU 53	2
37 THRU 53	5
37 THRU 53	2
54 THRU 89	1
54 THRU 89	3
54 THRU 89	3
37 THRU 53	2
37 THRU 53	15
54 THRU 89	5
18 THRU 36	1

tvhoursbyage.age3	tvhoursbyage.tvhours
18 THRU 36	2
18 THRU 36	2
54 THRU 89	1
37 THRU 53	2
37 THRU 53	1
37 THRU 53	2
54 THRU 89	3
37 THRU 53	2
54 THRU 89	8
37 THRU 53	1
54 THRU 89	2
54 THRU 89	1
18 THRU 36	4
37 THRU 53	2
37 THRU 53	5
37 THRU 53	1
18 THRU 36	1
18 THRU 36	1
37 THRU 53	1
18 THRU 36	2
18 THRU 36	6
37 THRU 53	1
37 THRU 53	4
18 THRU 36	6
37 THRU 53	8
54 THRU 89	2
37 THRU 53	5
54 THRU 89	2
18 THRU 36	2
54 THRU 89	4
37 THRU 53	2
18 THRU 36	1
37 THRU 53	2
37 THRU 53	2
18 THRU 36	7
18 THRU 36	1
37 THRU 53	4
54 THRU 89	2
54 THRU 89	3
37 THRU 53	1
37 THRU 53	6
37 THRU 53	7
54 THRU 89	6
37 THRU 53	2
37 THRU 53	2
37 THRU 53	1



tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	2
18 THRU 36	2
37 THRU 53	1
37 THRU 53	2
18 THRU 36	0
54 THRU 89	8
18 THRU 36	4
18 THRU 36	3
18 THRU 36	3
37 THRU 53	1
18 THRU 36	1
37 THRU 53	1
37 THRU 53	3
37 THRU 53	3
37 THRU 53	2
54 THRU 89	1
18 THRU 36	1
54 THRU 89	2
54 THRU 89	4
18 THRU 36	3
18 THRU 36	2
54 THRU 89	2
54 THRU 89	2
18 THRU 36	0
18 THRU 36	2
18 THRU 36	3
54 THRU 89	2
18 THRU 36	1
37 THRU 53	6
37 THRU 53	1
18 THRU 36	0
54 THRU 89	4
18 THRU 36	4
54 THRU 89	1
54 THRU 89	5
54 THRU 89	2
18 THRU 36	3
18 THRU 36	2
37 THRU 53	1
18 THRU 36	2
37 THRU 53	1
54 THRU 89	3
18 THRU 36	1
54 THRU 89	4
54 THRU 89	1
54 THRU 89	4

tvhoursbyage.age3	tvhoursbyage.tvhours
54 THRU 89	2
18 THRU 36	3
37 THRU 53	2
54 THRU 89	6
37 THRU 53	2
37 THRU 53	1
37 THRU 53	1
18 THRU 36	2
37 THRU 53	1
54 THRU 89	8
18 THRU 36	0
37 THRU 53	5
18 THRU 36	1
18 THRU 36	5
37 THRU 53	1
54 THRU 89	5
37 THRU 53	3
37 THRU 53	1
18 THRU 36	0
54 THRU 89	5
37 THRU 53	2
37 THRU 53	1
18 THRU 36	0
54 THRU 89	1
37 THRU 53	1
54 THRU 89	4
18 THRU 36	6
54 THRU 89	7
54 THRU 89	6
54 THRU 89	2
54 THRU 89	1
54 THRU 89	2
18 THRU 36	1
37 THRU 53	1
54 THRU 89	1
18 THRU 36	13
54 THRU 89	5
18 THRU 36	1
18 THRU 36	2
18 THRU 36	0
37 THRU 53	1
18 THRU 36	2
54 THRU 89	2
37 THRU 53	4
37 THRU 53	4
37 THRU 53	3

tvhoursbyage.age3	tvhoursbyage.tvhours
54 THRU 89	1
54 THRU 89	3
54 THRU 89	6
18 THRU 36	4
54 THRU 89	5
54 THRU 89	16
54 THRU 89	2
18 THRU 36	1
18 THRU 36	4
37 THRU 53	2
54 THRU 89	1
18 THRU 36	0
37 THRU 53	2
54 THRU 89	3
18 THRU 36	1
18 THRU 36	1
37 THRU 53	2
18 THRU 36	8
18 THRU 36	2
18 THRU 36	3
54 THRU 89	5
54 THRU 89	3
54 THRU 89	10
54 THRU 89	3
54 THRU 89	3
37 THRU 53	2
54 THRU 89	4
37 THRU 53	3
18 THRU 36	1
37 THRU 53	1
54 THRU 89	4
54 THRU 89	0
54 THRU 89	2
54 THRU 89	2
54 THRU 89	2
54 THRU 89	2
54 THRU 89	6
54 THRU 89	6
37 THRU 53	1
37 THRU 53	3
54 THRU 89	5
37 THRU 53	1
54 THRU 89	2
37 THRU 53	5
37 THRU 53	2
18 THRU 36	2

tvhoursbyage.age3	tvhoursbyage.tvhours
54 THRU 89	2
37 THRU 53	1
37 THRU 53	2
37 THRU 53	6
54 THRU 89	1
37 THRU 53	1
18 THRU 36	3
54 THRU 89	0
18 THRU 36	1
54 THRU 89	7
54 THRU 89	0
54 THRU 89	1
54 THRU 89	0
54 THRU 89	1
18 THRU 36	0
18 THRU 36	3
37 THRU 53	0
54 THRU 89	3
54 THRU 89	4
37 THRU 53	2
37 THRU 53	4
54 THRU 89	2
37 THRU 53	4
54 THRU 89	1
18 THRU 36	1
54 THRU 89	3
37 THRU 53	1
54 THRU 89	6
37 THRU 53	1
37 THRU 53	2
18 THRU 36	2
37 THRU 53	6
54 THRU 89	3
54 THRU 89	3
54 THRU 89	4
54 THRU 89	4
54 THRU 89	4
37 THRU 53	2
54 THRU 89	2
37 THRU 53	3
37 THRU 53	4
37 THRU 53	4
54 THRU 89	4
54 THRU 89	3
18 THRU 36	1
37 THRU 53	0

tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	5
37 THRU 53	2
54 THRU 89	4
54 THRU 89	4
37 THRU 53	1
18 THRU 36	2
18 THRU 36	0
54 THRU 89	3
37 THRU 53	1
54 THRU 89	2
54 THRU 89	3
54 THRU 89	7
18 THRU 36	2
54 THRU 89	2
37 THRU 53	0
54 THRU 89	3
37 THRU 53	1
37 THRU 53	2
54 THRU 89	5
54 THRU 89	1
54 THRU 89	6
54 THRU 89	3
54 THRU 89	12
18 THRU 36	3
37 THRU 53	5
18 THRU 36	1
54 THRU 89	5
54 THRU 89	3
18 THRU 36	1
37 THRU 53	0
18 THRU 36	3
18 THRU 36	2
54 THRU 89	4
18 THRU 36	3
54 THRU 89	3
54 THRU 89	12
37 THRU 53	1
37 THRU 53	1
54 THRU 89	3
54 THRU 89	3
37 THRU 53	2
54 THRU 89	3
54 THRU 89	2
37 THRU 53	2
54 THRU 89	2
54 THRU 89	1

tvhoursbyage.age3	tvhoursbyage.tvhours
54 THRU 89	18
54 THRU 89	8
37 THRU 53	0
18 THRU 36	1
54 THRU 89	1
37 THRU 53	3
54 THRU 89	3
37 THRU 53	3
54 THRU 89	4
54 THRU 89	8
18 THRU 36	2
37 THRU 53	4
37 THRU 53	5
37 THRU 53	2
54 THRU 89	4
54 THRU 89	4
37 THRU 53	12
18 THRU 36	4
54 THRU 89	0
54 THRU 89	1
37 THRU 53	1
54 THRU 89	3
54 THRU 89	2
54 THRU 89	4
54 THRU 89	1
54 THRU 89	3
54 THRU 89	2
18 THRU 36	6
54 THRU 89	5
18 THRU 36	4
54 THRU 89	5
37 THRU 53	4
18 THRU 36	2
54 THRU 89	3
18 THRU 36	3
54 THRU 89	2
54 THRU 89	3
54 THRU 89	1
54 THRU 89	2
37 THRU 53	24
54 THRU 89	3
37 THRU 53	1
37 THRU 53	2
37 THRU 53	3
54 THRU 89	3
54 THRU 89	4

tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	5
37 THRU 53	6
37 THRU 53	5
18 THRU 36	2
37 THRU 53	6
18 THRU 36	3
18 THRU 36	6
18 THRU 36	5
54 THRU 89	7
18 THRU 36	6
18 THRU 36	2
18 THRU 36	6
18 THRU 36	2
18 THRU 36	5
37 THRU 53	2
18 THRU 36	5
54 THRU 89	4
54 THRU 89	3
37 THRU 53	5
54 THRU 89	3
37 THRU 53	2
37 THRU 53	3
18 THRU 36	3
37 THRU 53	5
37 THRU 53	4
37 THRU 53	1
18 THRU 36	8
18 THRU 36	4
37 THRU 53	4
54 THRU 89	4
37 THRU 53	1
54 THRU 89	5
37 THRU 53	6
54 THRU 89	3
54 THRU 89	0
18 THRU 36	2
54 THRU 89	3
54 THRU 89	7
54 THRU 89	4
37 THRU 53	3
37 THRU 53	5
54 THRU 89	6
18 THRU 36	0
18 THRU 36	2
37 THRU 53	2
37 THRU 53	1

tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	3
54 THRU 89	2
54 THRU 89	5
54 THRU 89	2
54 THRU 89	3
54 THRU 89	8
54 THRU 89	9
18 THRU 36	2
54 THRU 89	2
37 THRU 53	2
54 THRU 89	2
18 THRU 36	2
18 THRU 36	6
54 THRU 89	5
54 THRU 89	6
37 THRU 53	2
37 THRU 53	1
54 THRU 89	4
54 THRU 89	0
37 THRU 53	2
37 THRU 53	3
18 THRU 36	3
37 THRU 53	4
18 THRU 36	4
18 THRU 36	1
18 THRU 36	3
18 THRU 36	1
18 THRU 36	0
54 THRU 89	2
37 THRU 53	1
37 THRU 53	2
54 THRU 89	2
18 THRU 36	5
37 THRU 53	6
54 THRU 89	2
37 THRU 53	2
54 THRU 89	4
54 THRU 89	4
37 THRU 53	1
18 THRU 36	4
54 THRU 89	3
18 THRU 36	1
54 THRU 89	1
18 THRU 36	0
18 THRU 36	12
37 THRU 53	4



tvhoursbyage.age3	tvhoursbyage.tvhours
18 THRU 36	1
18 THRU 36	3
37 THRU 53	0
37 THRU 53	3
37 THRU 53	2
37 THRU 53	3
37 THRU 53	1
18 THRU 36	2
54 THRU 89	1
54 THRU 89	4
54 THRU 89	7
54 THRU 89	3
54 THRU 89	1
37 THRU 53	4
18 THRU 36	2
18 THRU 36	2
37 THRU 53	1
54 THRU 89	1
37 THRU 53	4
54 THRU 89	3
18 THRU 36	2
37 THRU 53	2
18 THRU 36	0
18 THRU 36	2
37 THRU 53	3
18 THRU 36	2
54 THRU 89	2
54 THRU 89	4
54 THRU 89	8
18 THRU 36	2
18 THRU 36	4
37 THRU 53	1
37 THRU 53	3
37 THRU 53	1
18 THRU 36	2
54 THRU 89	8
37 THRU 53	1
37 THRU 53	2
37 THRU 53	4
37 THRU 53	2
37 THRU 53	2
37 THRU 53	2
54 THRU 89	3
54 THRU 89	3
37 THRU 53	3
54 THRU 89	3

tvhoursbyage.age3	tvhoursbyage.tvhours
54 THRU 89	0
54 THRU 89	12
54 THRU 89	0
37 THRU 53	3
18 THRU 36	5
37 THRU 53	1
37 THRU 53	3
18 THRU 36	4
54 THRU 89	2
54 THRU 89	6
37 THRU 53	2
37 THRU 53	2
18 THRU 36	1
18 THRU 36	2
18 THRU 36	2
18 THRU 36	5
37 THRU 53	15
54 THRU 89	2
18 THRU 36	2
37 THRU 53	0
54 THRU 89	2
37 THRU 53	1
54 THRU 89	1
54 THRU 89	1
18 THRU 36	4
18 THRU 36	8
18 THRU 36	6
37 THRU 53	4
54 THRU 89	2
37 THRU 53	10
18 THRU 36	1
37 THRU 53	3
37 THRU 53	1
54 THRU 89	5
18 THRU 36	5
18 THRU 36	2
18 THRU 36	2
37 THRU 53	6
54 THRU 89	8
18 THRU 36	1
37 THRU 53	1
37 THRU 53	1
37 THRU 53	4
18 THRU 36	11
54 THRU 89	1
18 THRU 36	4

tvhoursbyage.age3	tvhoursbyage.tvhours
54 THRU 89	3
54 THRU 89	3
54 THRU 89	1
37 THRU 53	1
54 THRU 89	1
37 THRU 53	1
18 THRU 36	2
37 THRU 53	5
54 THRU 89	4
54 THRU 89	3
54 THRU 89	6
18 THRU 36	6
37 THRU 53	6
54 THRU 89	6
18 THRU 36	1
37 THRU 53	2
18 THRU 36	0
37 THRU 53	5
18 THRU 36	3
54 THRU 89	2
54 THRU 89	1
18 THRU 36	1
18 THRU 36	3
18 THRU 36	1
18 THRU 36	3
37 THRU 53	1
37 THRU 53	3
54 THRU 89	1
37 THRU 53	1
37 THRU 53	2
37 THRU 53	2
54 THRU 89	1
37 THRU 53	2
54 THRU 89	8
37 THRU 53	3
54 THRU 89	4
18 THRU 36	7
37 THRU 53	8
37 THRU 53	12
37 THRU 53	2
18 THRU 36	2
18 THRU 36	2
37 THRU 53	1
54 THRU 89	4
37 THRU 53	2
37 THRU 53	1

tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	1
37 THRU 53	2
37 THRU 53	2
37 THRU 53	2
18 THRU 36	1
37 THRU 53	0
18 THRU 36	2
37 THRU 53	1
54 THRU 89	3
37 THRU 53	1
18 THRU 36	1
37 THRU 53	3
18 THRU 36	2
37 THRU 53	6
18 THRU 36	4
37 THRU 53	2
18 THRU 36	2
18 THRU 36	4
18 THRU 36	4
18 THRU 36	6
54 THRU 89	4
37 THRU 53	15
18 THRU 36	0
37 THRU 53	12
18 THRU 36	1
37 THRU 53	1
18 THRU 36	1
37 THRU 53	1
37 THRU 53	4
54 THRU 89	3
18 THRU 36	2
18 THRU 36	3
37 THRU 53	2
37 THRU 53	8
18 THRU 36	5
18 THRU 36	2
18 THRU 36	2
37 THRU 53	1
18 THRU 36	2
18 THRU 36	2
18 THRU 36	2
18 THRU 36	0
37 THRU 53	1
37 THRU 53	3
54 THRU 89	2
37 THRU 53	1

tvhoursbyage.age3	tvhoursbyage.tvhours
18 THRU 36	2
18 THRU 36	10
54 THRU 89	5
37 THRU 53	1
18 THRU 36	20
37 THRU 53	3
18 THRU 36	4
37 THRU 53	2
18 THRU 36	2
18 THRU 36	3
37 THRU 53	2
37 THRU 53	6
18 THRU 36	2
18 THRU 36	2
37 THRU 53	2
37 THRU 53	2
37 THRU 53	1
37 THRU 53	0
18 THRU 36	1
37 THRU 53	0
18 THRU 36	2
54 THRU 89	4
54 THRU 89	4
18 THRU 36	8
18 THRU 36	1
37 THRU 53	2
54 THRU 89	4
37 THRU 53	3
18 THRU 36	3
37 THRU 53	1
37 THRU 53	4
54 THRU 89	3
54 THRU 89	4
37 THRU 53	1
37 THRU 53	2
18 THRU 36	1
37 THRU 53	2
18 THRU 36	0
37 THRU 53	2
18 THRU 36	3
18 THRU 36	2
54 THRU 89	3
18 THRU 36	4
54 THRU 89	3
37 THRU 53	2
18 THRU 36	3

tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	0
54 THRU 89	3
54 THRU 89	4
37 THRU 53	2
18 THRU 36	1
18 THRU 36	0
54 THRU 89	6
54 THRU 89	3
18 THRU 36	1
18 THRU 36	3
18 THRU 36	2
54 THRU 89	1
54 THRU 89	2
18 THRU 36	1
18 THRU 36	2
37 THRU 53	4
54 THRU 89	2
54 THRU 89	1
54 THRU 89	3
54 THRU 89	5
54 THRU 89	1
54 THRU 89	3
18 THRU 36	1
37 THRU 53	5
18 THRU 36	1
37 THRU 53	2
37 THRU 53	1
54 THRU 89	2
18 THRU 36	0
18 THRU 36	3
37 THRU 53	2
18 THRU 36	1
37 THRU 53	8
18 THRU 36	3
54 THRU 89	4
37 THRU 53	3
37 THRU 53	1
18 THRU 36	2
18 THRU 36	1
18 THRU 36	4
37 THRU 53	3
54 THRU 89	5
54 THRU 89	5
18 THRU 36	4
54 THRU 89	3
37 THRU 53	2

tvhoursbyage.age3	tvhoursbyage.tvhours
54 THRU 89	2
54 THRU 89	2
37 THRU 53	1
18 THRU 36	3
54 THRU 89	2
37 THRU 53	1
54 THRU 89	4
37 THRU 53	2
37 THRU 53	2
18 THRU 36	1
54 THRU 89	3
37 THRU 53	4
54 THRU 89	3
18 THRU 36	2
54 THRU 89	2
18 THRU 36	0
18 THRU 36	1
54 THRU 89	6
37 THRU 53	10
18 THRU 36	0
18 THRU 36	2
18 THRU 36	5
54 THRU 89	7
54 THRU 89	4
54 THRU 89	4
54 THRU 89	3
54 THRU 89	4
18 THRU 36	2
18 THRU 36	2
37 THRU 53	1
54 THRU 89	1
37 THRU 53	1
18 THRU 36	3
18 THRU 36	3
54 THRU 89	12
37 THRU 53	2
37 THRU 53	6
54 THRU 89	2
18 THRU 36	5
18 THRU 36	4
37 THRU 53	3
18 THRU 36	3
54 THRU 89	4
18 THRU 36	2
18 THRU 36	1
54 THRU 89	2

tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	0
18 THRU 36	1
37 THRU 53	1
37 THRU 53	4
18 THRU 36	1
37 THRU 53	2
18 THRU 36	1
18 THRU 36	1
37 THRU 53	1
18 THRU 36	4
37 THRU 53	3
37 THRU 53	5
37 THRU 53	1
18 THRU 36	3
37 THRU 53	4
37 THRU 53	5
37 THRU 53	3
18 THRU 36	2
54 THRU 89	6
54 THRU 89	3
18 THRU 36	3
18 THRU 36	3
37 THRU 53	2
18 THRU 36	2
18 THRU 36	2
54 THRU 89	1
18 THRU 36	0
18 THRU 36	2
37 THRU 53	1
37 THRU 53	3
37 THRU 53	4
37 THRU 53	15
37 THRU 53	0
18 THRU 36	3
37 THRU 53	2
18 THRU 36	2
18 THRU 36	2
37 THRU 53	6
54 THRU 89	0
18 THRU 36	2
54 THRU 89	1
37 THRU 53	4
54 THRU 89	13
54 THRU 89	4
54 THRU 89	3
18 THRU 36	2



tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	1
54 THRU 89	15
18 THRU 36	0
54 THRU 89	3
54 THRU 89	0
18 THRU 36	3
54 THRU 89	2
54 THRU 89	1
54 THRU 89	5
54 THRU 89	3
37 THRU 53	2
54 THRU 89	3
37 THRU 53	4
18 THRU 36	1
18 THRU 36	1
37 THRU 53	1
18 THRU 36	1
54 THRU 89	2
18 THRU 36	3
37 THRU 53	4
18 THRU 36	4
18 THRU 36	4
37 THRU 53	2
37 THRU 53	2
54 THRU 89	8
54 THRU 89	8
37 THRU 53	8
18 THRU 36	1
54 THRU 89	12
37 THRU 53	2
37 THRU 53	2
54 THRU 89	2
54 THRU 89	3
37 THRU 53	4
54 THRU 89	8
18 THRU 36	0
54 THRU 89	2
54 THRU 89	1
18 THRU 36	1
54 THRU 89	3
37 THRU 53	1
37 THRU 53	3
37 THRU 53	3
54 THRU 89	3
37 THRU 53	1
18 THRU 36	4

tvhoursbyage.age3	tvhoursbyage.tvhours
18 THRU 36	8
37 THRU 53	4
18 THRU 36	2
37 THRU 53	4
54 THRU 89	2
37 THRU 53	1
37 THRU 53	8
37 THRU 53	3
37 THRU 53	2
37 THRU 53	1
37 THRU 53	2
54 THRU 89	1
37 THRU 53	3
54 THRU 89	4
18 THRU 36	1
18 THRU 36	1
54 THRU 89	5
18 THRU 36	8
54 THRU 89	4
18 THRU 36	2
37 THRU 53	2
18 THRU 36	2
37 THRU 53	4
37 THRU 53	3
18 THRU 36	1
54 THRU 89	2
54 THRU 89	7
18 THRU 36	2
18 THRU 36	2
54 THRU 89	1
37 THRU 53	2
54 THRU 89	8
18 THRU 36	1
54 THRU 89	3
54 THRU 89	3
37 THRU 53	2
37 THRU 53	1
18 THRU 36	14
54 THRU 89	2
18 THRU 36	3
54 THRU 89	2
18 THRU 36	0
18 THRU 36	6
18 THRU 36	1
18 THRU 36	2
37 THRU 53	2

tvhoursbyage.age3	tvhoursbyage.tvhours
54 THRU 89	2
18 THRU 36	2
54 THRU 89	2
18 THRU 36	3
54 THRU 89	2
37 THRU 53	0
18 THRU 36	2
37 THRU 53	3
37 THRU 53	5
37 THRU 53	2
37 THRU 53	4
37 THRU 53	4
18 THRU 36	1
18 THRU 36	1
18 THRU 36	2
37 THRU 53	0
54 THRU 89	2
18 THRU 36	2
18 THRU 36	1
18 THRU 36	2
37 THRU 53	2
18 THRU 36	2
18 THRU 36	2
37 THRU 53	2
37 THRU 53	4
37 THRU 53	3
37 THRU 53	3
54 THRU 89	3
18 THRU 36	3
54 THRU 89	10
18 THRU 36	8
18 THRU 36	2
37 THRU 53	5
37 THRU 53	24
37 THRU 53	2
37 THRU 53	1
18 THRU 36	3
18 THRU 36	1
37 THRU 53	1
37 THRU 53	2
18 THRU 36	2
18 THRU 36	1
37 THRU 53	2
18 THRU 36	4
37 THRU 53	4
18 THRU 36	3

tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	3
37 THRU 53	1
54 THRU 89	4
18 THRU 36	10
37 THRU 53	4
18 THRU 36	4
37 THRU 53	2
54 THRU 89	2
54 THRU 89	2
37 THRU 53	2
37 THRU 53	4
37 THRU 53	1
54 THRU 89	5
54 THRU 89	2
54 THRU 89	1
54 THRU 89	4
18 THRU 36	2
37 THRU 53	3
37 THRU 53	1
37 THRU 53	3
54 THRU 89	5
37 THRU 53	8
37 THRU 53	1
54 THRU 89	3
18 THRU 36	2
37 THRU 53	2
37 THRU 53	2
37 THRU 53	2
18 THRU 36	3
37 THRU 53	5
37 THRU 53	1
54 THRU 89	1
37 THRU 53	0
18 THRU 36	6
54 THRU 89	4
18 THRU 36	1
18 THRU 36	2
37 THRU 53	4
54 THRU 89	4
37 THRU 53	4
18 THRU 36	1
37 THRU 53	2
18 THRU 36	2
54 THRU 89	2
18 THRU 36	2
54 THRU 89	2

tvhoursbyage.age3	tvhoursbyage.tvhours
54 THRU 89	3
37 THRU 53	4
37 THRU 53	5
54 THRU 89	1
37 THRU 53	2
18 THRU 36	3
18 THRU 36	2
18 THRU 36	5
18 THRU 36	10
37 THRU 53	3
37 THRU 53	5
54 THRU 89	2
37 THRU 53	1
37 THRU 53	2
18 THRU 36	1
54 THRU 89	1
37 THRU 53	4
37 THRU 53	1
54 THRU 89	1
18 THRU 36	2
18 THRU 36	2
54 THRU 89	5
37 THRU 53	2
18 THRU 36	6
18 THRU 36	0
18 THRU 36	3
18 THRU 36	6
18 THRU 36	8
37 THRU 53	1
37 THRU 53	2
18 THRU 36	4
18 THRU 36	1
54 THRU 89	3
37 THRU 53	2
54 THRU 89	1
18 THRU 36	1
18 THRU 36	3
18 THRU 36	0
18 THRU 36	1
18 THRU 36	3
37 THRU 53	1
18 THRU 36	2
18 THRU 36	4
37 THRU 53	2
18 THRU 36	4
37 THRU 53	2

tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	3
18 THRU 36	12
18 THRU 36	2
54 THRU 89	2
54 THRU 89	3
37 THRU 53	3
54 THRU 89	2
37 THRU 53	3
54 THRU 89	2
54 THRU 89	1
37 THRU 53	4
37 THRU 53	3
18 THRU 36	2
37 THRU 53	2
37 THRU 53	3
37 THRU 53	8
54 THRU 89	4
37 THRU 53	1
37 THRU 53	3
18 THRU 36	2
37 THRU 53	5
18 THRU 36	1
54 THRU 89	2
54 THRU 89	4
18 THRU 36	5
54 THRU 89	4
37 THRU 53	4
54 THRU 89	2
54 THRU 89	2
54 THRU 89	8
54 THRU 89	6
37 THRU 53	3
37 THRU 53	2
37 THRU 53	4
18 THRU 36	3
54 THRU 89	3
54 THRU 89	3
37 THRU 53	0
37 THRU 53	1
37 THRU 53	1
18 THRU 36	0
18 THRU 36	3
18 THRU 36	0
54 THRU 89	5
18 THRU 36	1
54 THRU 89	2

tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	2
18 THRU 36	2
37 THRU 53	4
18 THRU 36	0
54 THRU 89	6
54 THRU 89	5
37 THRU 53	1
18 THRU 36	5
54 THRU 89	12
37 THRU 53	3
18 THRU 36	8
18 THRU 36	8
37 THRU 53	5
37 THRU 53	3
37 THRU 53	1
18 THRU 36	4
18 THRU 36	5
37 THRU 53	1
18 THRU 36	2
18 THRU 36	0
37 THRU 53	2
37 THRU 53	3
37 THRU 53	2
37 THRU 53	0
18 THRU 36	1
37 THRU 53	3
18 THRU 36	10
18 THRU 36	3
37 THRU 53	3
18 THRU 36	3
37 THRU 53	2
37 THRU 53	3
37 THRU 53	4
18 THRU 36	5
54 THRU 89	4
37 THRU 53	1
37 THRU 53	4
37 THRU 53	4
54 THRU 89	3
54 THRU 89	2
54 THRU 89	2
18 THRU 36	2
54 THRU 89	5
37 THRU 53	2
37 THRU 53	0
18 THRU 36	2

tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	2
37 THRU 53	2
37 THRU 53	3
37 THRU 53	2
37 THRU 53	1
37 THRU 53	3
54 THRU 89	0
37 THRU 53	3
37 THRU 53	3
54 THRU 89	3
54 THRU 89	2
18 THRU 36	6
54 THRU 89	3
37 THRU 53	2
37 THRU 53	21
18 THRU 36	3
18 THRU 36	2
54 THRU 89	4
37 THRU 53	1
54 THRU 89	4
54 THRU 89	6
18 THRU 36	3
54 THRU 89	8
37 THRU 53	0
54 THRU 89	5
54 THRU 89	1
37 THRU 53	2
18 THRU 36	1
54 THRU 89	3
37 THRU 53	1
37 THRU 53	2
54 THRU 89	2
18 THRU 36	2
37 THRU 53	2
18 THRU 36	4
54 THRU 89	2
37 THRU 53	3
37 THRU 53	3
37 THRU 53	2
37 THRU 53	2
37 THRU 53	2
54 THRU 89	6
37 THRU 53	5
18 THRU 36	2
18 THRU 36	2
37 THRU 53	1



tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	4
54 THRU 89	2
54 THRU 89	2
18 THRU 36	1
54 THRU 89	0
54 THRU 89	5
54 THRU 89	1
54 THRU 89	4
18 THRU 36	3
37 THRU 53	2
18 THRU 36	2
18 THRU 36	1
18 THRU 36	1
37 THRU 53	2
18 THRU 36	2
54 THRU 89	5
37 THRU 53	1
18 THRU 36	3
54 THRU 89	0
54 THRU 89	2
54 THRU 89	4
37 THRU 53	3
18 THRU 36	1
54 THRU 89	6
37 THRU 53	1
54 THRU 89	4
37 THRU 53	1
54 THRU 89	2
37 THRU 53	1
18 THRU 36	1
54 THRU 89	2
18 THRU 36	1
54 THRU 89	4
54 THRU 89	2
18 THRU 36	2
37 THRU 53	4
54 THRU 89	4
54 THRU 89	1
37 THRU 53	3
18 THRU 36	1
18 THRU 36	3
37 THRU 53	0
37 THRU 53	3
54 THRU 89	4
18 THRU 36	1
37 THRU 53	0

tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	0
54 THRU 89	4
54 THRU 89	3
54 THRU 89	6
54 THRU 89	6
37 THRU 53	5
54 THRU 89	2
37 THRU 53	4
54 THRU 89	4
37 THRU 53	0
37 THRU 53	1
18 THRU 36	1
37 THRU 53	1
18 THRU 36	6
18 THRU 36	1
54 THRU 89	2
37 THRU 53	14
18 THRU 36	1
37 THRU 53	3
37 THRU 53	1
18 THRU 36	2
54 THRU 89	2
18 THRU 36	1
18 THRU 36	2
37 THRU 53	4
37 THRU 53	15
18 THRU 36	12
54 THRU 89	6
37 THRU 53	1
54 THRU 89	1
18 THRU 36	4
18 THRU 36	5
18 THRU 36	1
54 THRU 89	0
54 THRU 89	0
37 THRU 53	3
18 THRU 36	3
54 THRU 89	6
37 THRU 53	1
18 THRU 36	2
54 THRU 89	2
18 THRU 36	2
54 THRU 89	5
37 THRU 53	2
37 THRU 53	1
54 THRU 89	6

tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	2
18 THRU 36	1
37 THRU 53	4
18 THRU 36	4
18 THRU 36	2
18 THRU 36	1
18 THRU 36	2
37 THRU 53	1
54 THRU 89	3
37 THRU 53	10
54 THRU 89	6
18 THRU 36	2
54 THRU 89	5
54 THRU 89	3
54 THRU 89	2
54 THRU 89	3
37 THRU 53	8
37 THRU 53	2
37 THRU 53	4
37 THRU 53	1
54 THRU 89	3
18 THRU 36	2
54 THRU 89	1
54 THRU 89	4
18 THRU 36	2
54 THRU 89	0
37 THRU 53	1
37 THRU 53	3
37 THRU 53	4
18 THRU 36	1
37 THRU 53	2
18 THRU 36	1
18 THRU 36	3
18 THRU 36	2
18 THRU 36	7
54 THRU 89	8
54 THRU 89	3
54 THRU 89	2
54 THRU 89	3
18 THRU 36	0
54 THRU 89	2
37 THRU 53	3
18 THRU 36	3
37 THRU 53	6
54 THRU 89	8
54 THRU 89	15

tvhoursbyage.age3	tvhoursbyage.tvhours
18 THRU 36	2
54 THRU 89	4
37 THRU 53	3
54 THRU 89	3
54 THRU 89	1
37 THRU 53	1
54 THRU 89	2
18 THRU 36	2
37 THRU 53	2
54 THRU 89	2
18 THRU 36	2
18 THRU 36	4
18 THRU 36	2
37 THRU 53	2
18 THRU 36	5
18 THRU 36	5
37 THRU 53	3
37 THRU 53	1
18 THRU 36	3
18 THRU 36	4
18 THRU 36	2
18 THRU 36	3
18 THRU 36	4
54 THRU 89	2
37 THRU 53	0
18 THRU 36	6
54 THRU 89	5
54 THRU 89	1
54 THRU 89	4
18 THRU 36	1
18 THRU 36	2
54 THRU 89	4
18 THRU 36	3
37 THRU 53	4
18 THRU 36	3
54 THRU 89	2
37 THRU 53	1
18 THRU 36	1
54 THRU 89	1
37 THRU 53	2
37 THRU 53	8
54 THRU 89	2
37 THRU 53	2
54 THRU 89	3
18 THRU 36	4
37 THRU 53	11

tvhoursbyage.age3	tvhoursbyage.tvhours
54 THRU 89	2
54 THRU 89	6
54 THRU 89	0
18 THRU 36	0
54 THRU 89	0
37 THRU 53	2
37 THRU 53	2
18 THRU 36	3
54 THRU 89	2
37 THRU 53	1
37 THRU 53	2
54 THRU 89	4
18 THRU 36	3
54 THRU 89	2
54 THRU 89	3
37 THRU 53	8
54 THRU 89	3
18 THRU 36	3
18 THRU 36	4
37 THRU 53	1
18 THRU 36	10
37 THRU 53	4
54 THRU 89	3
37 THRU 53	3
18 THRU 36	2
37 THRU 53	1
54 THRU 89	2
18 THRU 36	2
54 THRU 89	8
18 THRU 36	0
54 THRU 89	3
37 THRU 53	4
37 THRU 53	2
18 THRU 36	1
37 THRU 53	5
18 THRU 36	2
18 THRU 36	4
54 THRU 89	0
37 THRU 53	1
54 THRU 89	2
18 THRU 36	0
54 THRU 89	4
18 THRU 36	1
54 THRU 89	0
54 THRU 89	1
54 THRU 89	0

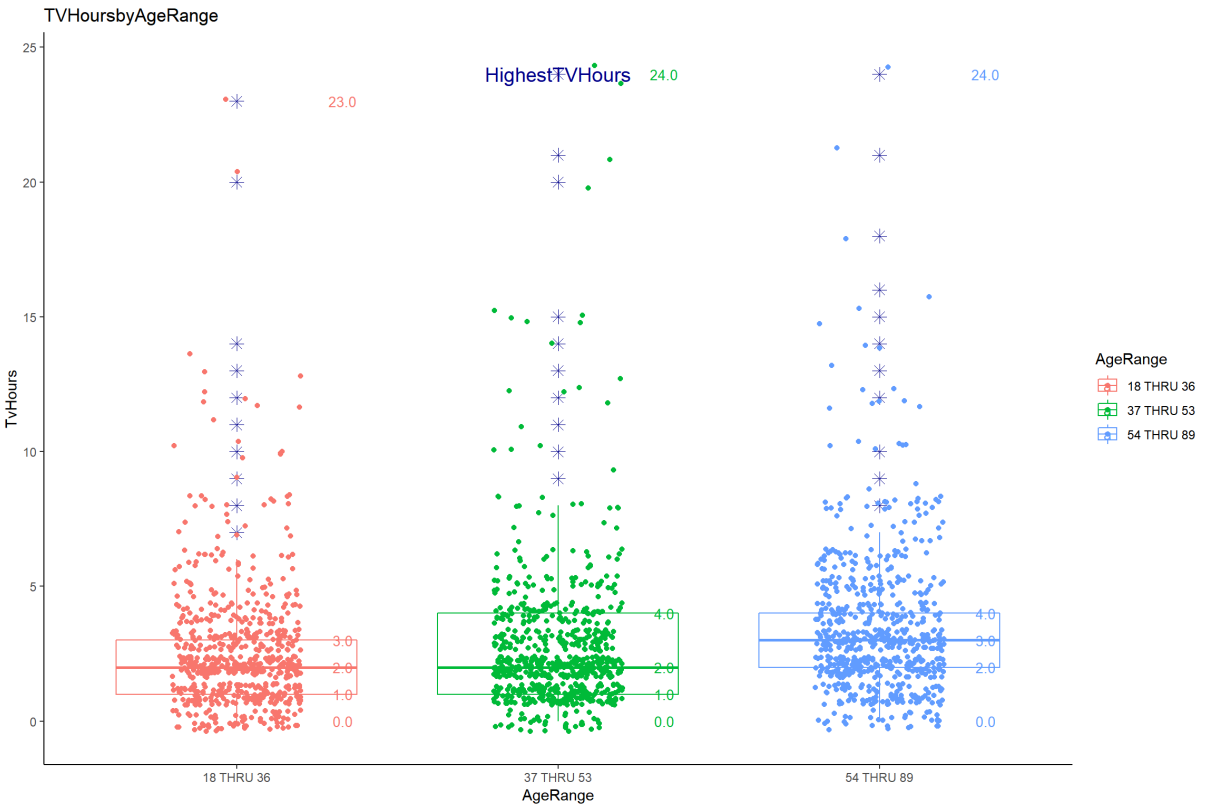
tvhoursbyage.age3	tvhoursbyage.tvhours
37 THRU 53	2
54 THRU 89	2
54 THRU 89	1
37 THRU 53	2
54 THRU 89	2
54 THRU 89	3
54 THRU 89	7
37 THRU 53	2
18 THRU 36	1
18 THRU 36	1
54 THRU 89	2
54 THRU 89	3
54 THRU 89	1
18 THRU 36	4

Hide

```
colnames(tvhoursbyage1)<-c("AgeRange", "TvHours")

Figure8<-ggplot(data=tvhoursbyage1,aes(x=AgeRange,y=TvHours,color=AgeRange))+geom_boxplot(outlier.color="darkblue",outlier.size=8,outlier.shape=3,notch=FALSE)+stat_summary(geom="text",fun.y=quantile,aes(label=sprintf("%1.1f", ..y..),color=factor(AgeRange)),position=position_nudge(x=0.33), size=3.5)+scale_fill_brewer(palette="Blues")+theme_classic()+ggtitle("TVHoursbyAge Range")+geom_jitter(shape=16,position=position_jitter(0.2))+annotate(geom="text",x=2,y=24,size=5,label="HighestTVHours",color="darkblue")
```

Figure8



Visual Brief for Figure 8

We tried to find out what age range spend most of their hours watching television on a given day. Of course, we predicted the older age group might have more television hours, but surprisingly, individuals aged 18 through 36 are equally watching television with old 54 through 89. However, there is a difference in median hours. Age range 37 through 53 are also equally watching TV with 54 through 89, but there is a slight difference in median hours.

## Exploratory Question 9: Which region has more individuals own a gun and their corresponding SEI scores

Hide

```
owngunbyregion<-filter(assignment2,owngun %in% c("YES","NO","NA"),region %in% c("E.NOR. CENTRAL","E.SOU. CENTRAL","MIDDLE AT
LANTIC","MOUNTAIN","NEW ENGLAND","PACIFIC","SOUTH ATLANTIC","W.NOR. CENTRAL","W.SOU. CENTRAL"),sei!="NA")
owngunbyregion1<-data.frame(owngunbyregion$owngun,owngunbyregion$region,owngunbyregion$sei)

owngunbyregion1 %>% glimpse()
```

```
## Observations: 1,011
## Variables: 3
## $ owngunbyregion.owngun <fct> NO, NO, NO, NO, NO, NO, NO, NO, NO, NO, ...
## $ owngunbyregion.region <fct> MIDDLE ATLANTIC, MIDDLE ATLANTIC, MIDDLE...
## $ owngunbyregion.sei <dbl> 63.5, 31.2, 28.4, 33.2, 27.7, 72.5, 82.7...
```

Hide

```
colnames(owngunbyregion1)<-c("OwnGun","Region","SEIScore")

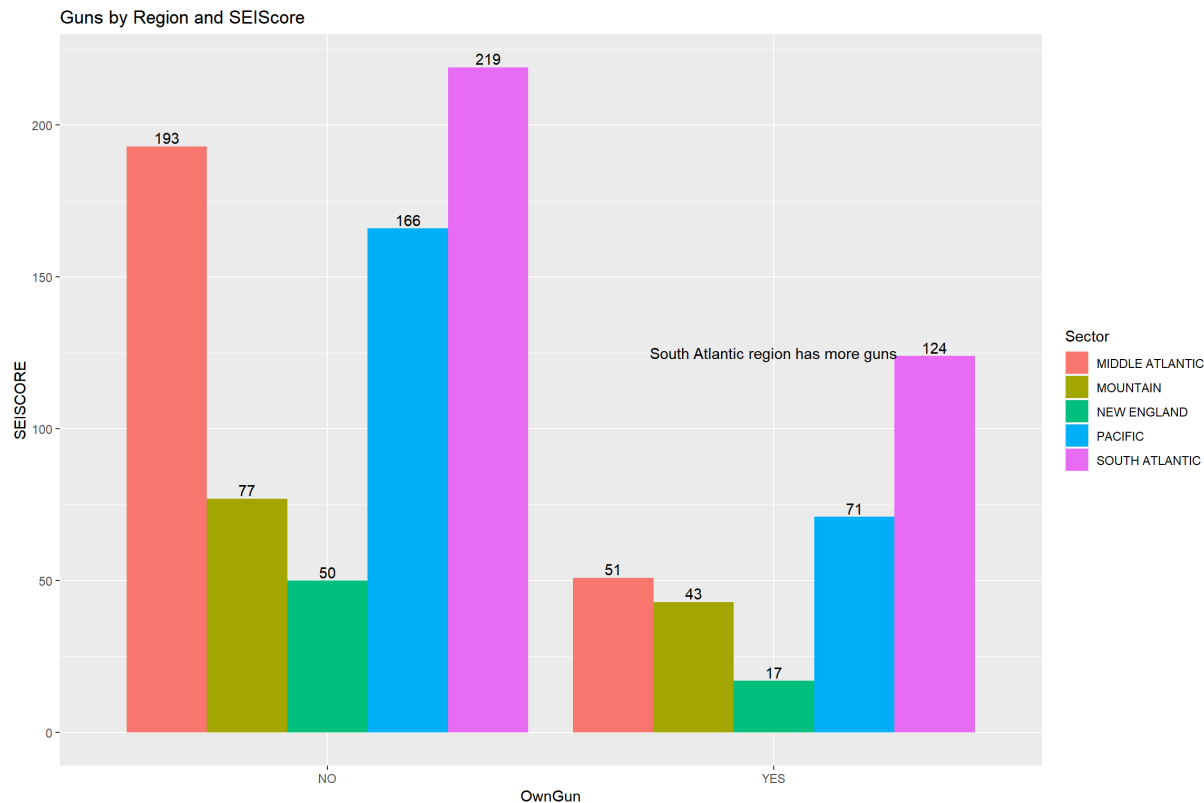
aggregatedata<-owngunbyregion1 %>%
group_by(OwnGun,Region) %>%
summarise(SEIScore=n())
aggregatedata
```

```
## # A tibble: 10 x 3
## # Groups:   OwnGun [?]
##   OwnGun Region      SEIScore
##   <fct> <fct>      <int>
## 1 NO    MIDDLE ATLANTIC      193
## 2 NO    MOUNTAIN           77
## 3 NO    NEW ENGLAND         50
## 4 NO    PACIFIC             166
## 5 NO    SOUTH ATLANTIC       219
## 6 YES   MIDDLE ATLANTIC        51
## 7 YES   MOUNTAIN              43
## 8 YES   NEW ENGLAND           17
## 9 YES   PACIFIC               71
## 10 YES  SOUTH ATLANTIC       124
```

Hide

```
Figure9<- ggplot(aggregatedata, aes(x=OwnGun, y=SEIScore, fill=Region))+
  geom_bar(aes(fill=Region), position = "dodge", stat="identity")+
  ggtitle("Guns by Region and SEIScore")+
  xlab("OwnGun")+ylab("SEIScore")+
  geom_text(aes(label = aggregatedata$SEIScore), position=position_dodge(width=0.9), vjust=-0.25)+
  labs(fill="Sector")+
  annotate("text", x = 2, y = 125, label = "South Atlantic region has more guns")
```

Figure9



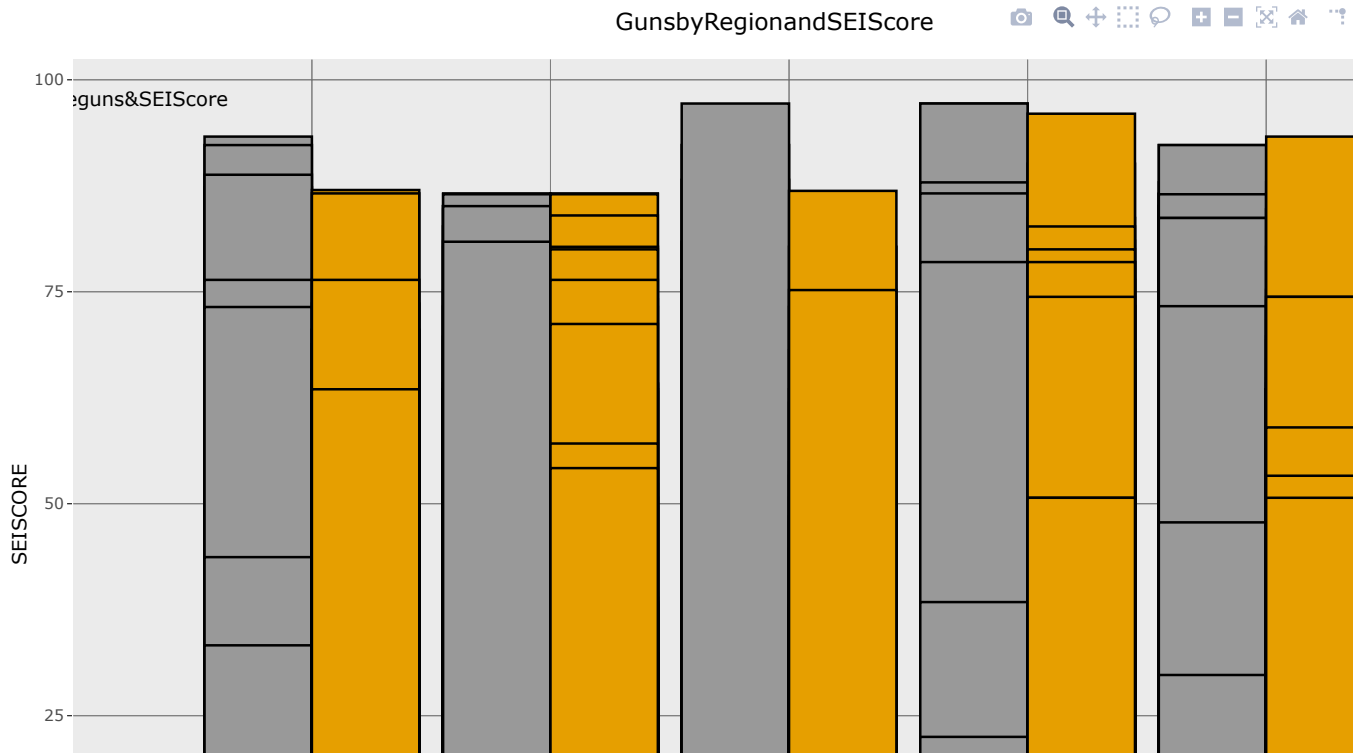
The analysis<sup>3</sup> is to find which region individuals have answered “Yes” for do you own a gun question in the survey and what is their corresponding SEI score. Different regions filter is applied since they can tell what countries have more guns based on the regions.

We have observed from the analysis that south Atlantic has more guns since most of the individuals who said yes are from that region.

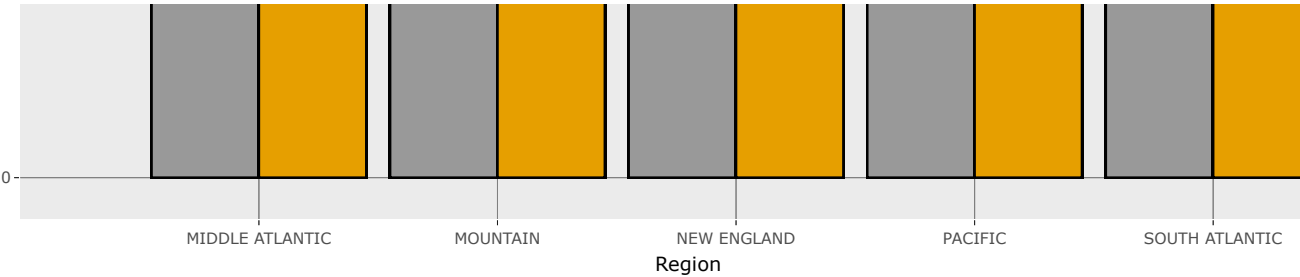
In contrast, New England has the least “yeses.” Another observation is that it seems most of the observations are from south Atlantic since it has more “No”s. However, there is a possibility people from other regions could have left the column blank, which is been removed from our sample.

Plotly Graph Experiment

```
plotlygraph<-ggplot(data=owngunbyregion1, aes(x=Region, y=SEIScore, fill=OwnGun)) +geom_bar(stat="identity", position=position_dodge(), colour="black")+ggtitle("GunsbyRegionandSEIScore")+xlab("Region")+ylab("SEIScore")+labs(fill="Sector")+annotate("text",x=0,y=97.5,label="Regionwithmoreguns&SEIScore")+scale_fill_manual(values=c("#999999", "#E69F00"))
ggplotly(plotlygraph)
```







ggplotly<sup>4</sup> will redirect the user to a webpage. if it is not able to open on IE, please copy the link and paste it other browser to access the graph and its robust features.We have experimented this plot type to see how this works

## References

---

1. ggplot2 box plot : Quick start guide - R software and data visualization. Link: <http://www.sthda.com/english/wiki/ggplot2-box-plot-quick-start-guide-r-software-and-data-visualization> (<http://www.sthda.com/english/wiki/ggplot2-box-plot-quick-start-guide-r-software-and-data-visualization>)↵
2. ggplot2 texts : Add text annotations to a graph in R software. Link: <http://www.sthda.com/english/wiki/ggplot2-texts-add-text-annotations-to-a-graph-in-r-software> (<http://www.sthda.com/english/wiki/ggplot2-texts-add-text-annotations-to-a-graph-in-r-software>)↵
3. ggplot2 bar plot with two categorical variables. Link: <https://stackoverflow.com/questions/24895575/ggplot2-bar-plot-with-two-categorical-variables?rq=1> (<https://stackoverflow.com/questions/24895575/ggplot2-bar-plot-with-two-categorical-variables?rq=1>)↵
4. geom\_bar in ggplot2. Link: [https://plot.ly/ggplot2/geom\\_bar/](https://plot.ly/ggplot2/geom_bar/) ([https://plot.ly/ggplot2/geom\\_bar/](https://plot.ly/ggplot2/geom_bar/))↵