

racial bias and gender bias in 2012 election

#introduction The 2012 U.S. presidential election was held on Tuesday, November 6, 2012. This is the 57th U.S. presidential election. Meanwhile, all 435 seats in the house of Representatives and 33 seats in the Senate will be re-elected to produce the 113th U.S. Congress. The electoral college will be elected first, and then the president and vice president will be elected by the electoral college on December 17, 2012. The incumbent President Barack Obama and Vice President Joe Biden, as qualified candidates, announced their bid for re-election and successfully won the Democratic nomination. The other major party, the Republican Party, nominated former Massachusetts Governor Mitt Romney as the presidential candidate, and congressman Paul Ryan as his deputy. In addition, some candidates representing other political parties and independents participated in the presidential election. Finally, Barack Obama, representing the Democratic Party, won more than half of the electoral votes in the presidential election, defeated Mitt Romney, the Republican Party, by 332 votes to 206 votes, and was re-elected as the president of the United States.

#data process #install the packages

#import the data

```
library(haven)
anes_timeseries_2012 <-
  read_sav("~/Documents/GitHub/Spring2021-Project1-Yuqi-Xing/data/anes_timeseries_2012.sav")
```

Process variables for analysis

```
anes_new=anes_timeseries_2012%>%
  mutate(
    turnout=as_factor(rvote2012_x),
    vote_for_president=as_factor(presvote2012_x),
    vote_for_USHouse=as_factor(hsevote2012_x),
    vote_for_senvote=as_factor(senvote2012_x),
    race=as_factor(dem_raceeth_x),
    gender=as_factor(gender_respondent_x),
  )

library(data.table)

data.table(anes_new%>%
  select(turnout, vote_for_president, vote_for_USHouse, vote_for_senvote, race, gender)%>%
  filter(turnout!="-9"&turnout!="-6"&turnout!="-2. Missing, 2012 voting status not determined")
  sample_n(10))
```

```
##                               turnout
## 1:          1. R voted in the 2012 elections
## 2:          1. R voted in the 2012 elections
## 3:          1. R voted in the 2012 elections
## 4:          1. R voted in the 2012 elections
```

```

## 5:      1. R voted in the 2012 elections
## 6:      1. R voted in the 2012 elections
## 7:      1. R voted in the 2012 elections
## 8:      1. R voted in the 2012 elections
## 9: 2. R did not vote in the 2012 elections
## 10:     1. R voted in the 2012 elections
##
##                                     vote_for_president
## 1:                                     1. Barack obama
## 2:                                     2. Mitt romney
## 3:                                     1. Barack obama
## 4:                                     1. Barack obama
## 5:                                     1. Barack obama
## 6:                                     2. Mitt romney
## 7:                                     1. Barack obama
## 8:                                     1. Barack obama
## 9: -2. R did not vote for Pres or did not report vote for Pres in pre and no post-election data
## 10:                                     1. Barack obama
##                                     vote_for_USHouse
## 1:                                     1. Voted for Democratic House candidate
## 2:                                     2. Voted for Republican House candidate
## 3:                                     1. Voted for Democratic House candidate
## 4:                                     1. Voted for Democratic House candidate
## 5:                                     1. Voted for Democratic House candidate
## 6:                                     2. Voted for Republican House candidate
## 7:                                     1. Voted for Democratic House candidate
## 8:                                     1. Voted for Democratic House candidate
## 9: -1. Inap, R did not or DK/RF if voted; voted but not (or DK/RF if voted for) for U.S. House
## 10: -1. Inap, R did not or DK/RF if voted; voted but not (or DK/RF if voted for) for U.S. House
##
##                                     1. Voted for Democ:
## 2: -1. Inap, R did not vote or DK/RF if voted; voted but not (or DK/RF if) for us Senate; no us Sen
## 3:                                     2. Voted for Republ
## 4: -1. Inap, R did not vote or DK/RF if voted; voted but not (or DK/RF if) for us Senate; no us Sen
## 5:                                     1. Voted for Democ:
## 6: -1. Inap, R did not vote or DK/RF if voted; voted but not (or DK/RF if) for us Senate; no us Sen
## 7:                                     1. Voted for Democ:
## 8: -1. Inap, R did not vote or DK/RF if voted; voted but not (or DK/RF if) for us Senate; no us Sen
## 9: -1. Inap, R did not vote or DK/RF if voted; voted but not (or DK/RF if) for us Senate; no us Sen
## 10: -1. Inap, R did not vote or DK/RF if voted; voted but not (or DK/RF if) for us Senate; no us Sen
##                                     race
## 1:                                     1. White, non-Hispanic
## 2:                                     1. White, non-Hispanic
## 3:                                     1. White, non-Hispanic
## 4:                                     2. Black, non-Hispanic
## 5:                                     2. Black, non-Hispanic
## 6: 6. Other non-Hispanic incl multiple races (Web: blank 'Other' counted as a race)
## 7:                                     1. White, non-Hispanic
## 8:                                     2. Black, non-Hispanic
## 9:                                     5. Hispanic
## 10:                                     1. White, non-Hispanic
##
##      gender
## 1: 1. Male
## 2: 1. Male
## 3: 2. Female

```

```
## 4: 2. Female
## 5: 2. Female
## 6: 2. Female
## 7: 2. Female
## 8: 2. Female
## 9: 1. Male
## 10: 2. Female
```

```
anes_new = anes_new%>%
  filter(turnout!="-9"&turnout!="-6"&turnout!="-2. Missing, 2012 voting status not determined")%>%
  select(turnout, vote_for_president, vote_for_USHouse, vote_for_senvote, race, gender)
head(anes_new)
```

```
## # A tibble: 6 x 6
##   turnout vote_for_president vote_for_USHouse vote_for_senvote race gender
##   <fct>    <fct>                <fct>          <fct>      <fct> <fct>
## 1 1. R vo~ 1. Barack obama      -1. Inap, R did n~ -1. Inap, R did n~ 2. B~ 1. Ma~
## 2 1. R vo~ 1. Barack obama      -1. Inap, R did n~ -1. Inap, R did n~ 2. B~ 2. Fe~
## 3 1. R vo~ 1. Barack obama      -1. Inap, R did n~ -1. Inap, R did n~ 2. B~ 2. Fe~
## 4 1. R vo~ 1. Barack obama      -1. Inap, R did n~ -1. Inap, R did n~ 2. B~ 1. Ma~
## 5 2. R di~ -2. R did not vot~ -1. Inap, R did n~ -1. Inap, R did n~ 2. B~ 1. Ma~
## 6 1. R vo~ 1. Barack obama      -1. Inap, R did n~ -1. Inap, R did n~ 2. B~ 2. Fe~
```

```
save(anes_new, file=~ /Documents/GitHub/Spring2021-Project1-Yuqi-Xing/output/data_use.RData")
```

A simple analysis

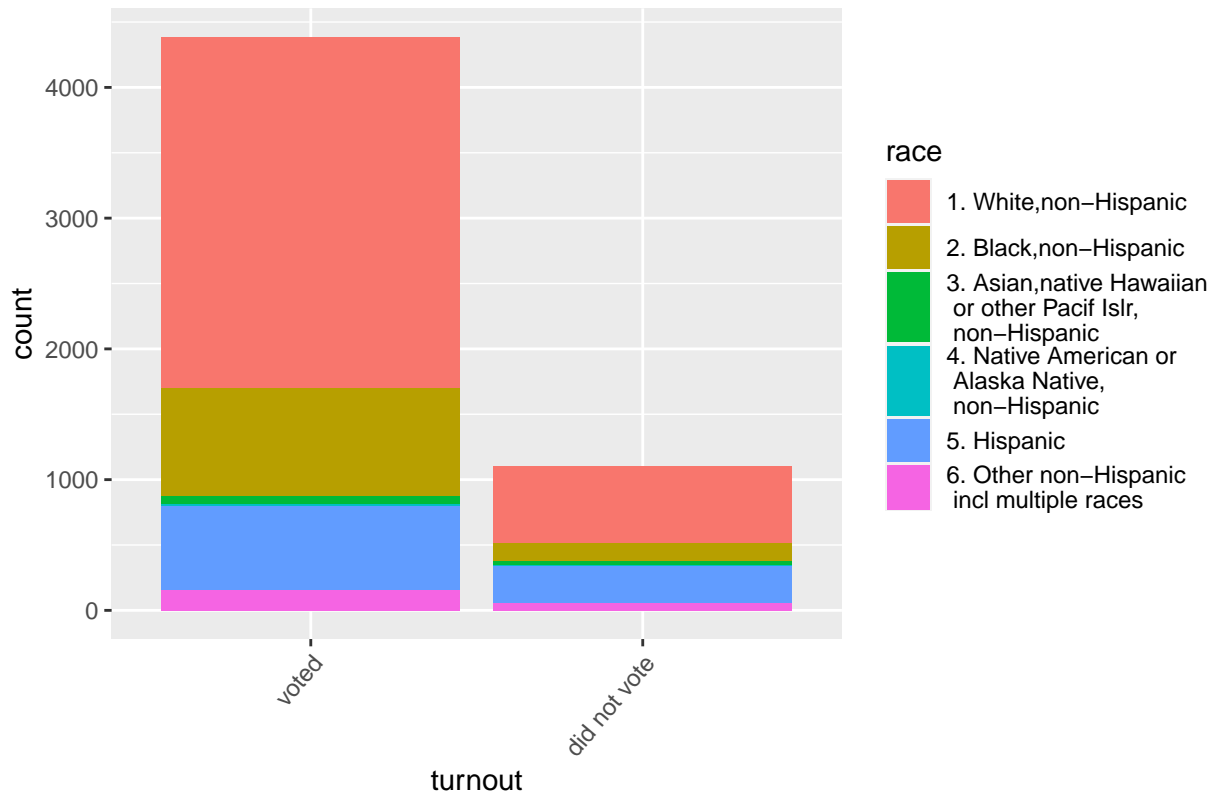
#Who went to vote in the election?

```
load(file=~ /Documents/GitHub/Spring2021-Project1-Yuqi-Xing/output/data_use.RData")
anes_to_race = anes_new %>%
  filter(race!="-9. Missing")      ###delete useless data from race variable

anes_to_gender = anes_new

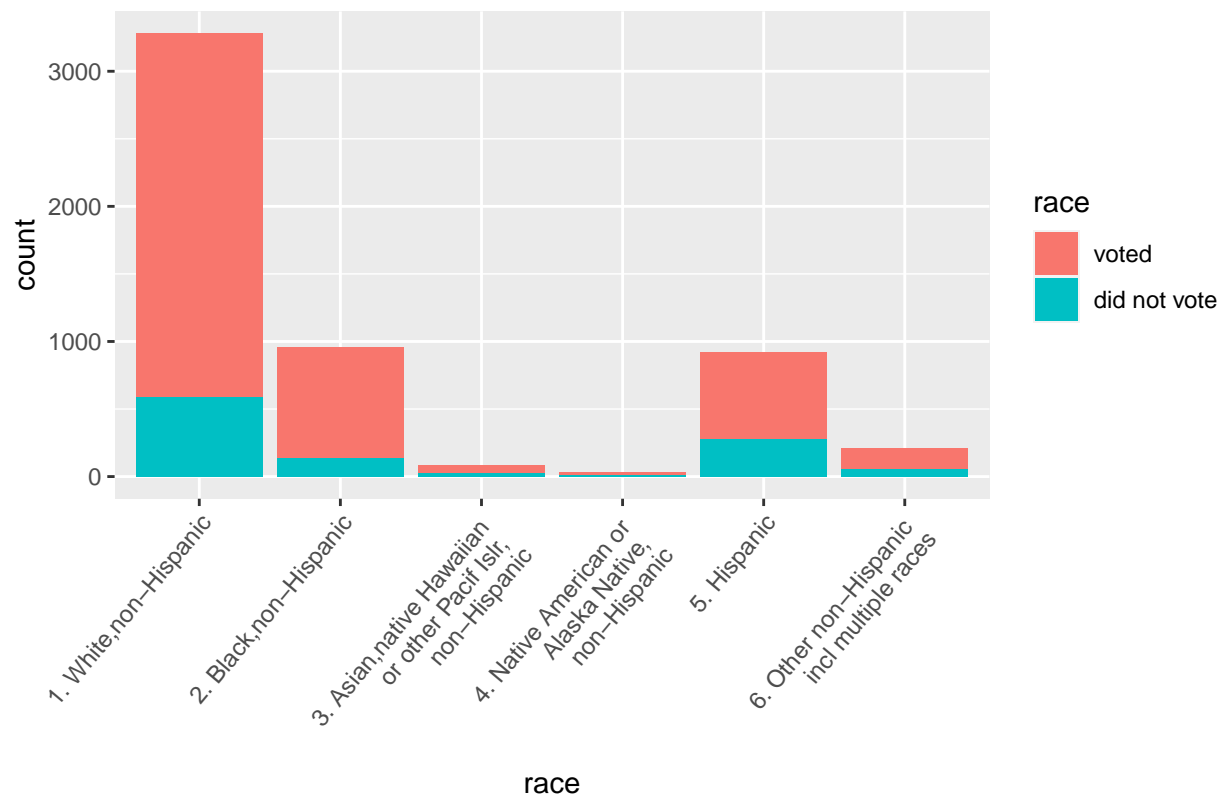
ggplot(anes_to_race)+
  geom_bar(aes(x=turnout, fill=race)) +
  theme(axis.text.x = element_text(angle = 50, hjust = 1))+
  labs(title="How did different racial groups participate in the election?")+
  scale_x_discrete(labels=c("1. R voted in the 2012 elections" = "voted", "2. R did not vote in the 2012 elections" = "not voted"))+
  scale_fill_discrete(name="race", breaks=c("1. White, non-Hispanic", "2. Black, non-Hispanic", "3. Asian, non-Hispanic"))
```

How did different racial groups participate in the election?



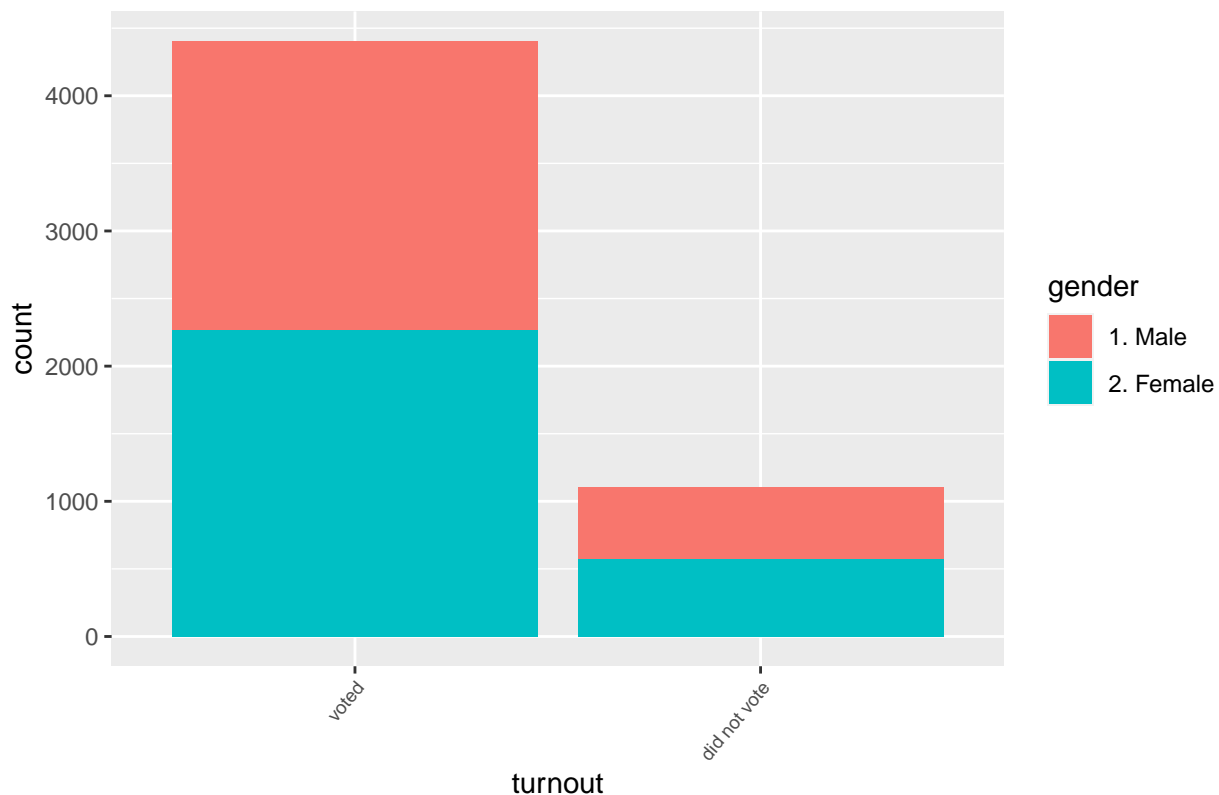
```
ggplot(anes_to_race) +
  geom_bar(aes(x=turnout, fill=turnout)) +
  theme(axis.text.x = element_text(angle = 50, hjust = 1)) +
  labs(title="How did different racial groups participate in the election?") +
  scale_x_discrete(labels=c("1. White, non-Hispanic", "2. Black, non-Hispanic", "3. Asian, native Hawaiian \\",
    scale_fill_discrete(name="turnout", breaks=c("1. R voted in the 2012 elections", "2. R did not vote in the 2012 elections")))
```

How did different racial groups participate in the election?



```
ggplot(anes_to_gender)+
  geom_bar(aes(x=turnout, fill=gender)) +
  theme(axis.text.x = element_text(angle = 50, hjust = 1, size=7))+
  labs(title="How did different gender groups participate in the election?")+
  scale_x_discrete(labels=c("1. R voted in the 2012 elections" = "voted", "2. R did not vote in the 2012 elections" = "did not vote"))
```

How did different gender groups participate in the election?



Overall, most people turned out to vote. For each race, the number of people who voted was significantly greater than the number who did not vote. Because of the large white population in the United States, whites play an important role in voting, like whites voting more than all other races combining. There is no obvious gender bias in voting participation.

#Who did they vote for as president in the election?

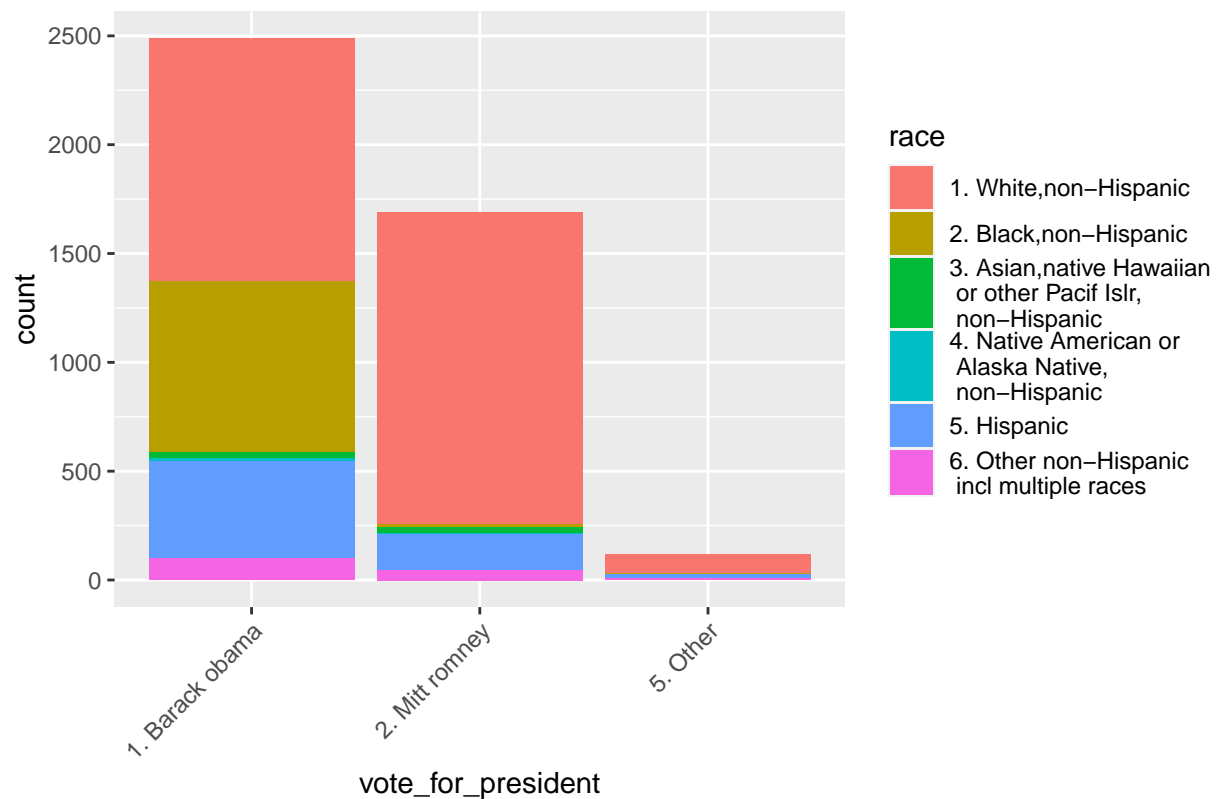
```
anes_vote_for_president=anes_new %>%
  filter(vote_for_president!="-9"&vote_for_president!="-6"&vote_for_president!="-2. R did not vote for I

anes_vote_for_president_by_race = anes_vote_for_president%>%
  filter(race!="-9. Missing")      # delete the useless race data for vote_for_president variable

anes_vote_for_president_by_gender= anes_vote_for_president

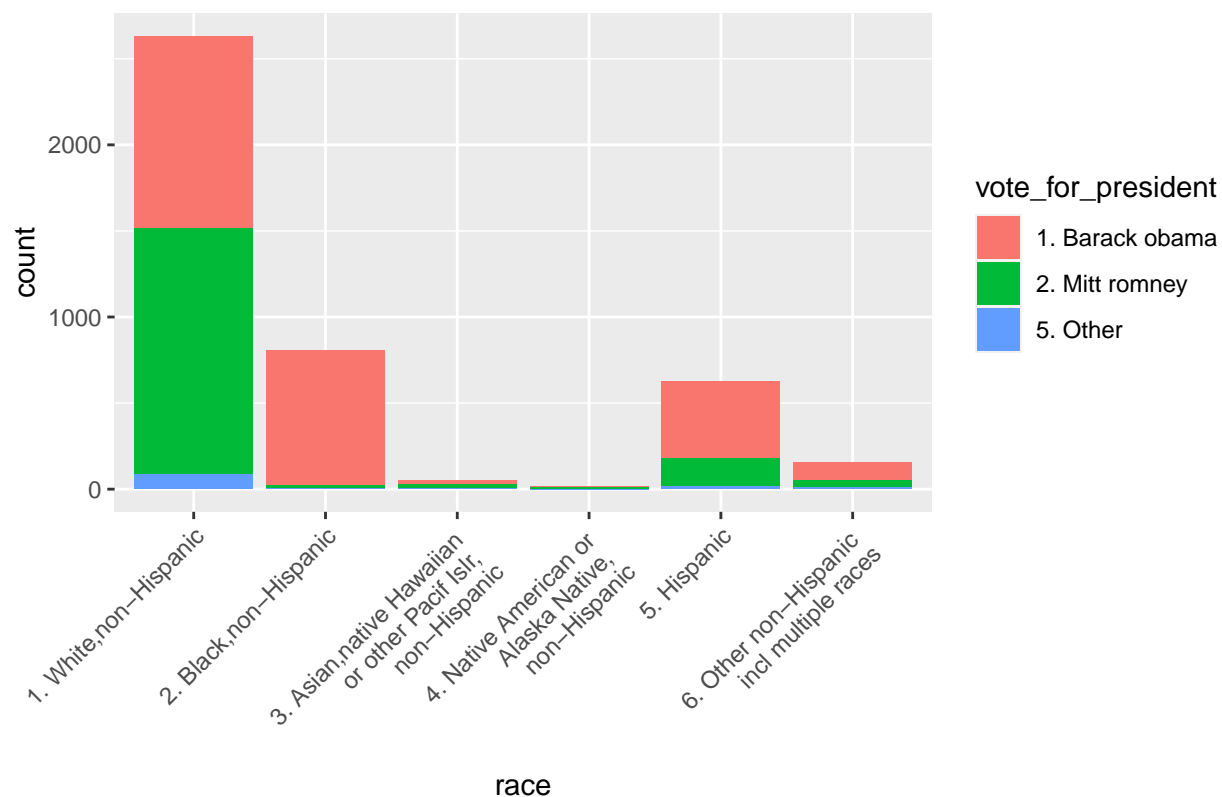
ggplot(anes_vote_for_president_by_race)+
  geom_bar(aes(x=vote_for_president, fill=race))+
  labs(title="Who did different racial groups vote for president in the election?")+
  theme(axis.text.x = element_text(angle = 45, hjust = 1))+
  scale_fill_discrete(name="race", breaks=c("1. White, non-Hispanic", "2. Black, non-Hispanic", "3. Asian
```

Who did different racial groups vote for president in the election?

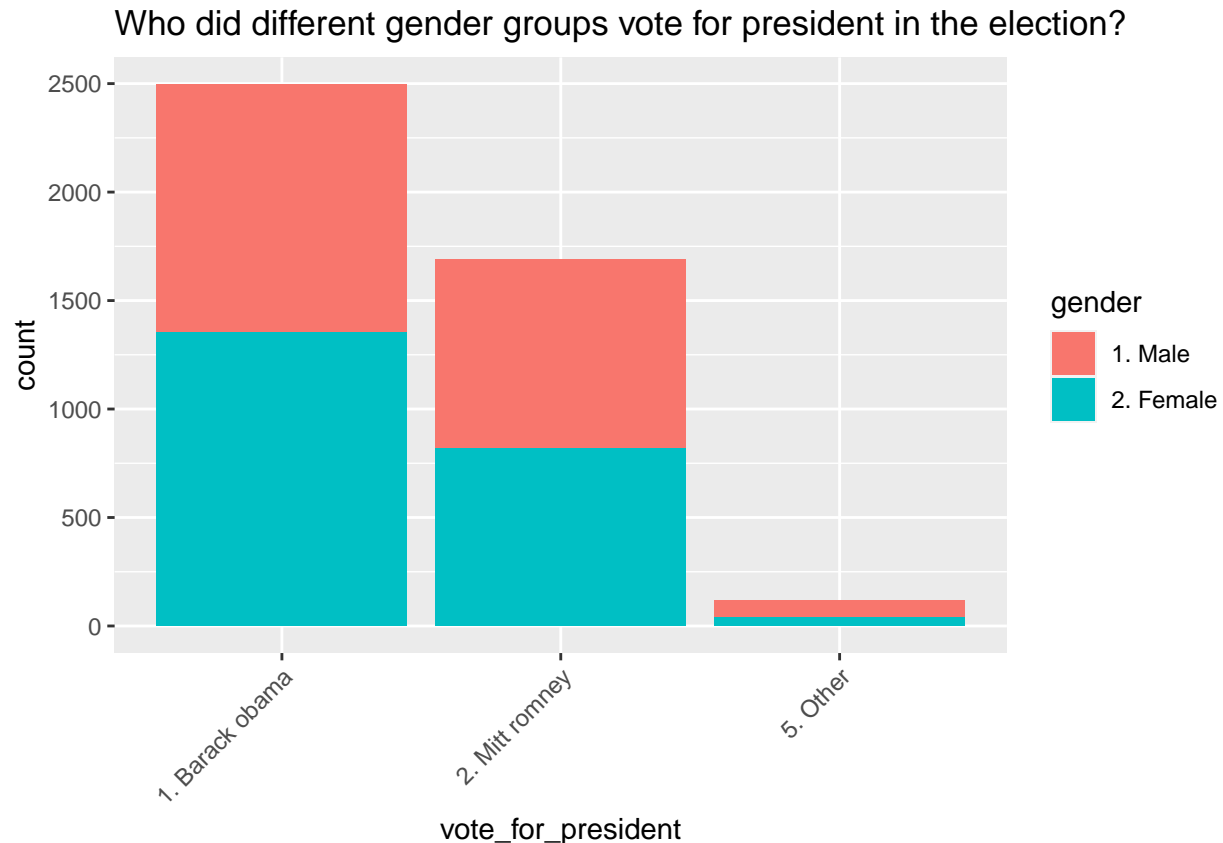


```
ggplot(anes_vote_for_president_by_race)+
  geom_bar(aes(x=vote_for_president, fill=vote_for_president))+
  labs(title="Who did different racial groups vote for president in the election?")+
  theme(axis.text.x = element_text(angle = 45, hjust = 1))+
  labs(title="Who did different racial groups vote for president in the election?")+
  scale_x_discrete(labels=c("1. White, non-Hispanic", "2. Black, non-Hispanic", "3. Asian, native Hawaiian \\",
```

Who did different racial groups vote for president in the election?



```
ggplot(anes_vote_for_president_by_gender)+
  geom_bar(aes(x=vote_for_president, fill=gender))+
  labs(title="Who did different gender groups vote for president in the election?")+
  theme(axis.text.x = element_text(angle = 45, hjust = 1))  ##create bar graph for vote_for_president, a
```

Mr Obama scored significantly higher than the other two. Among whites, nearly half support Barack Obama, but more than half support Mitt Romney. Among blacks, nearly all voted for Obama (Obama is black, so there may exist racial bias). Among Hispanic, most people voted for Obama. For the other races, the vote was evenly split, or close to evenly split by Obama and Romney. There is no obvious gender bias in voting for president.

#which party did they vote for as U.S. House in the election?

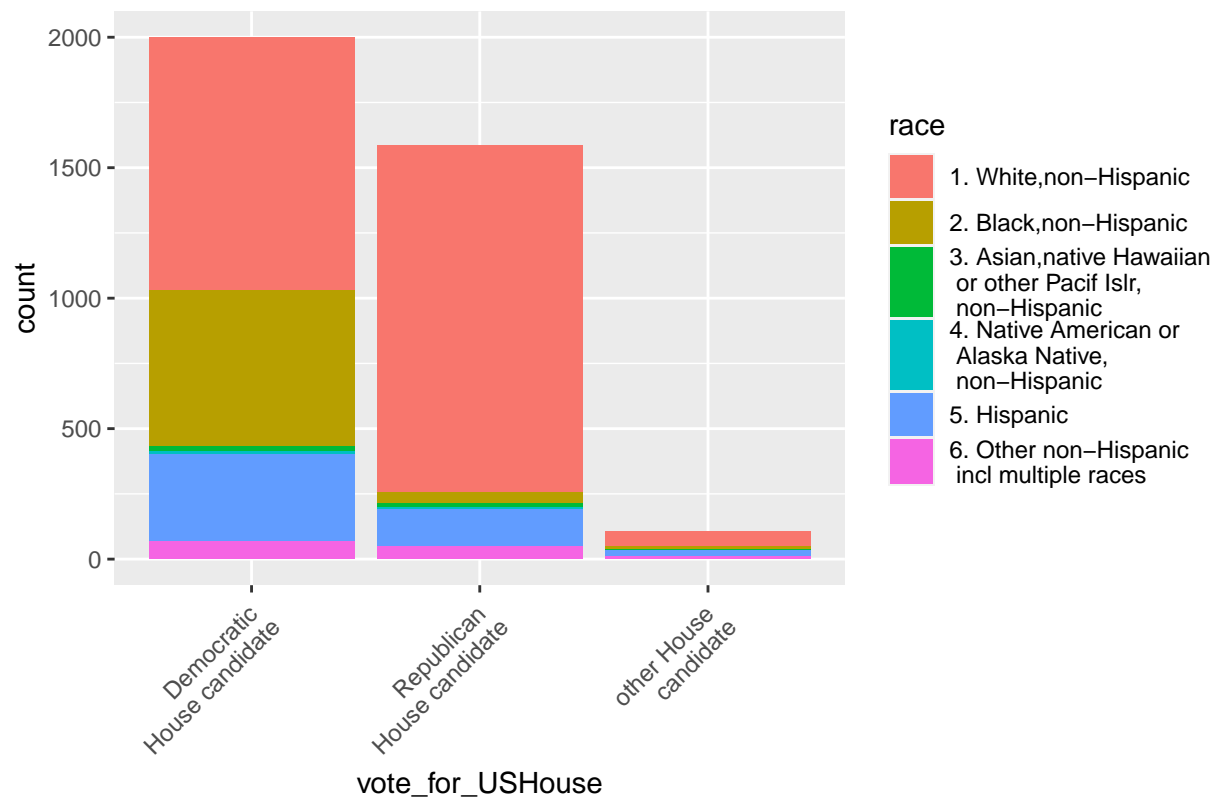
```
anes_vote_for_USHouse=anes_new %>%
  filter(vote_for_USHouse!="-1. Inap, R did not or DK/RF if voted; voted but not (or DK/RF if voted for

anes_vote_for_USHouse_by_race = anes_vote_for_USHouse%>%
  filter(race!="-9. Missing") # delete the useless race data for vote_for_USHouse variable

anes_vote_for_USHouse_by_gender= anes_vote_for_USHouse

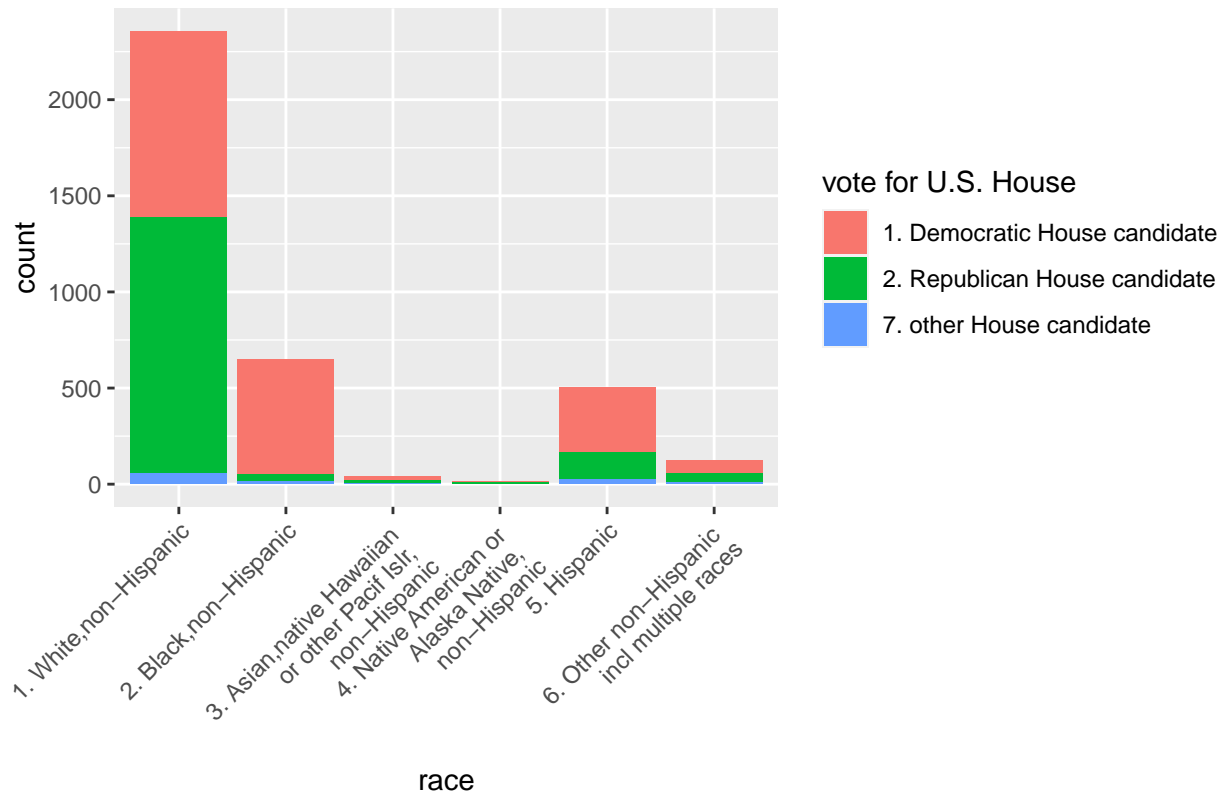
ggplot(anes_vote_for_USHouse_by_race)+
  geom_bar(aes(x=vote_for_USHouse, fill=party))+
  theme(axis.text.x = element_text(angle = 45, hjust = 1))+
  scale_x_discrete(labels=c("1. Voted for Democratic House candidate" = "Democratic \n House candidate",
  labs(title="Which party did different racial groups vote for as U.S. House in the election?")+
  scale_fill_discrete(name="party", breaks=c("1. White, non-Hispanic", "2. Black, non-Hispanic", "3. Asian, non-Hispanic", "4. Hispanic, non-Hispanic", "5. Other"))
```

Which party did different racial groups vote for as U.S. House in the electic

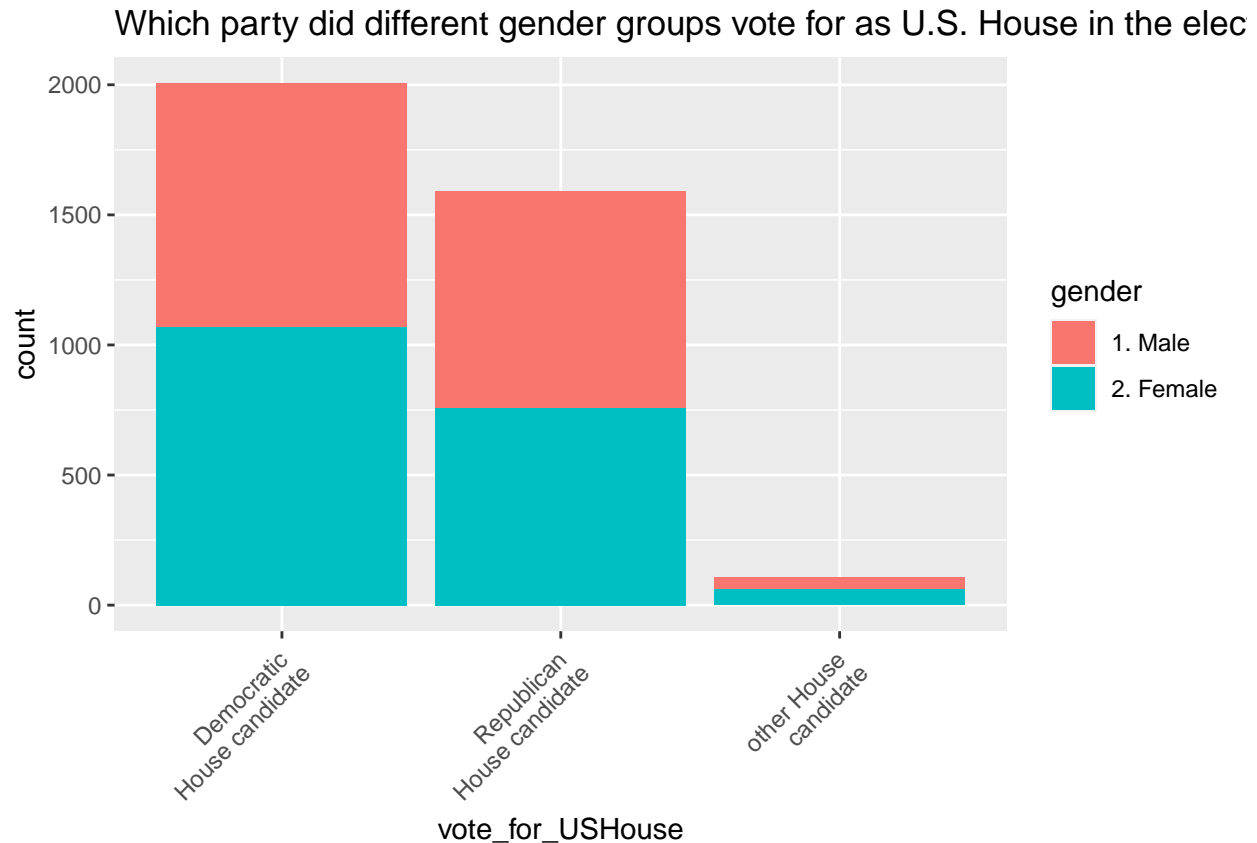


```
ggplot(anes_vote_for_USHouse_by_race)+
  geom_bar(aes(x=vote_for_USHouse, fill=vote_for_USHouse))+
  theme(axis.text.x = element_text(angle = 45, hjust = 1))+
  labs(title="Which party did different racial groups vote for as U.S. House in the election?")+
  scale_x_discrete(labels=c("1. White, non-Hispanic", "2. Black, non-Hispanic", "3. Asian, native Hawaiian \\",
    scale_fill_discrete(name="vote for U.S. House", breaks=c("1. Voted for Democratic House candidate", "2.
```

Which party did different racial groups vote for as U.S. House in the electic



```
ggplot(anes_vote_for_USHouse_by_gender)+
  geom_bar(aes(x=vote_for_USHouse, fill=gender))+
  theme(axis.text.x = element_text(angle = 45, hjust = 1))+
  labs(title="Which party did different gender groups vote for as U.S. House in the election?")+
  scale_x_discrete(labels=c("1. Voted for Democratic House candidate" = "Democratic \n House candidate"
```



Overall, the majority favored Democrats, followed by Republicans. Most whites supported the Republicans. Among blacks, nearly all voted for Democrats (Obama is black & Democrats, so there may exist racial bias). Among Hispanic, most people voted for Democrats. For the other races, the vote was evenly split, or close to evenly split by Democrats and Republican. There is no obvious gender bias in voting for USHouse.

#which party did they vote for as Senvote in the election?

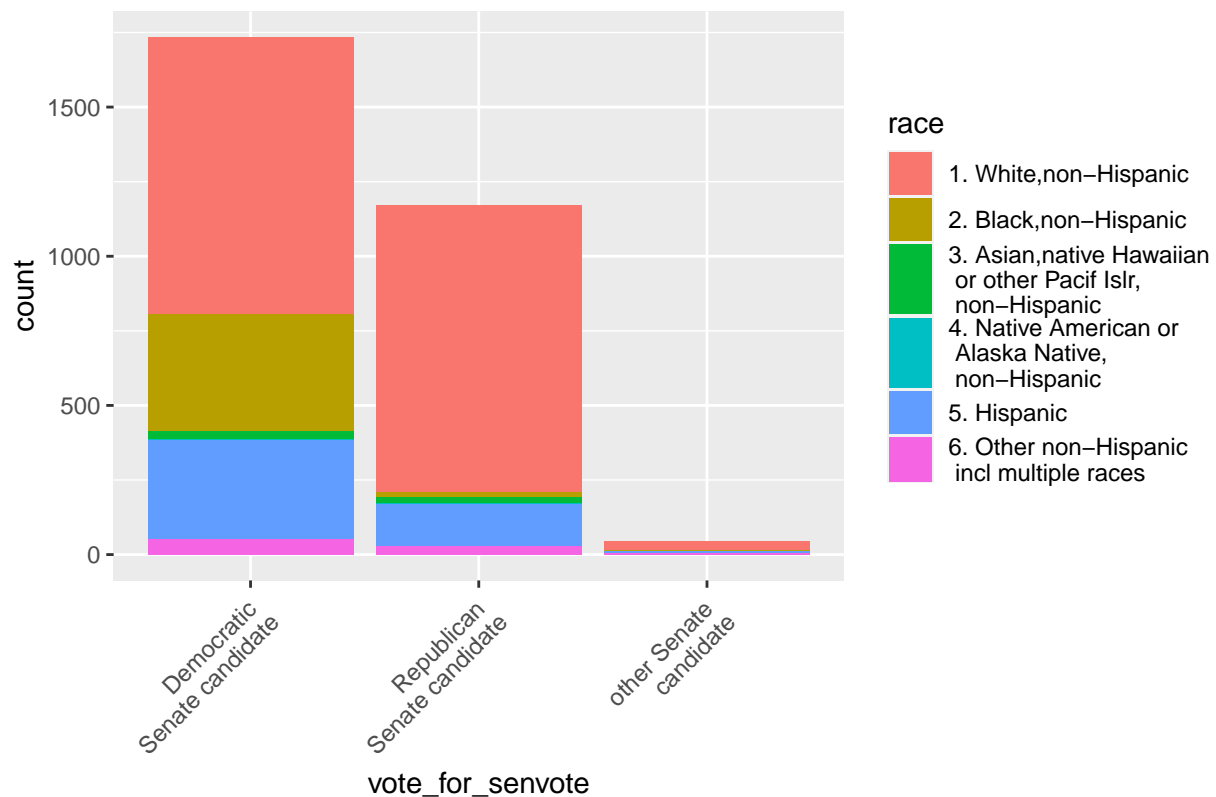
```
anes_vote_for_senvote=anes_new %>%
  filter(vote_for_senvote!="-1. Inap, R did not vote or DK/RF if voted; voted but not (or DK/RF if) for

anes_vote_for_senvote_by_race = anes_vote_for_senvote%>%
  filter(race!="-9. Missing")      # delete the useless race data for vote_for_senvote variable

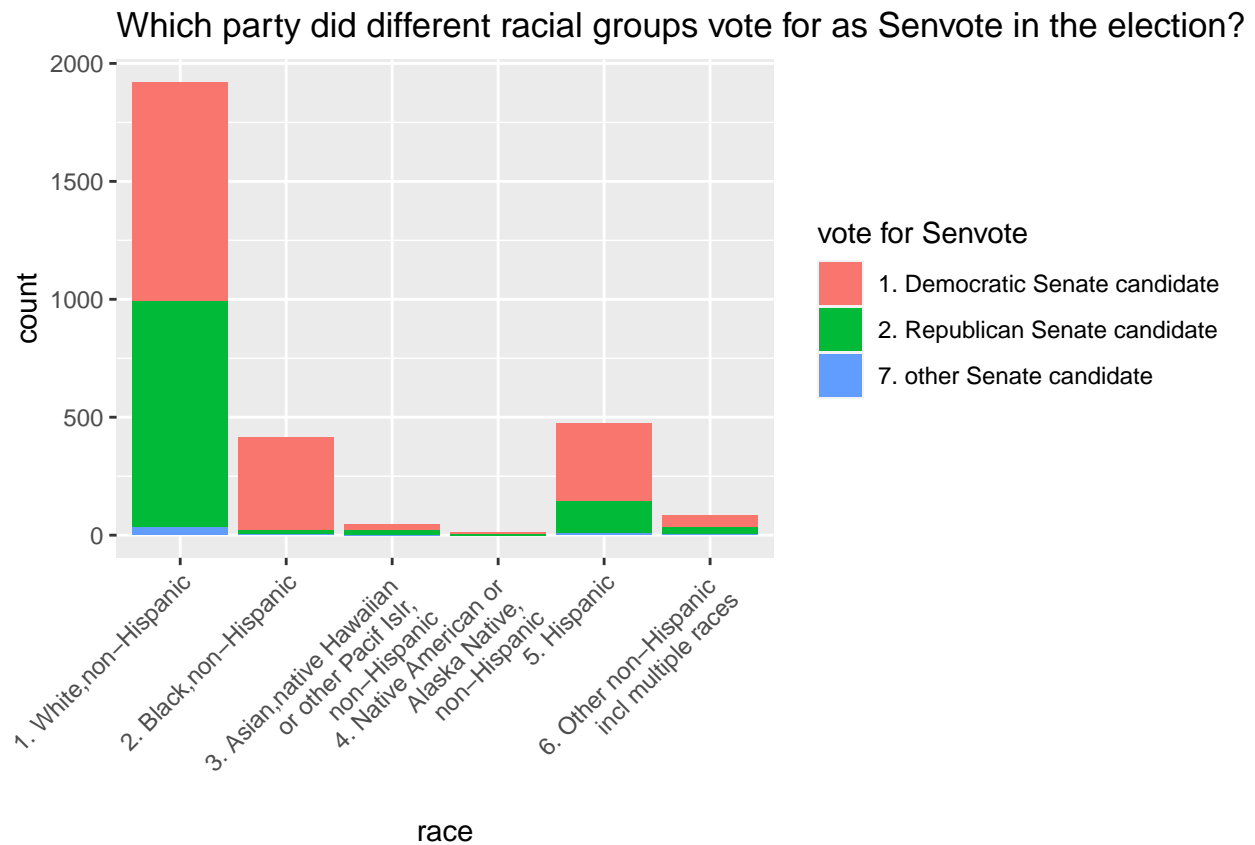
anes_vote_for_senvote_by_gender= anes_vote_for_senvote

ggplot(anes_vote_for_senvote_by_race)+
  geom_bar(aes(x=vote_for_senvote, fill=race))+
  theme(axis.text.x = element_text(angle = 45, hjust = 1))+
  labs(title="Which party did different racial groups vote for as Senvote in the election?")+
  scale_x_discrete(labels=c("1. Voted for Democratic Senate candidate" = "Democratic \n Senate candidate",
    scale_fill_discrete(name="race", breaks=c("1. White, non-Hispanic", "2. Black, non-Hispanic", "3. Asi
```

Which party did different racial groups vote for as Senvote in the election?

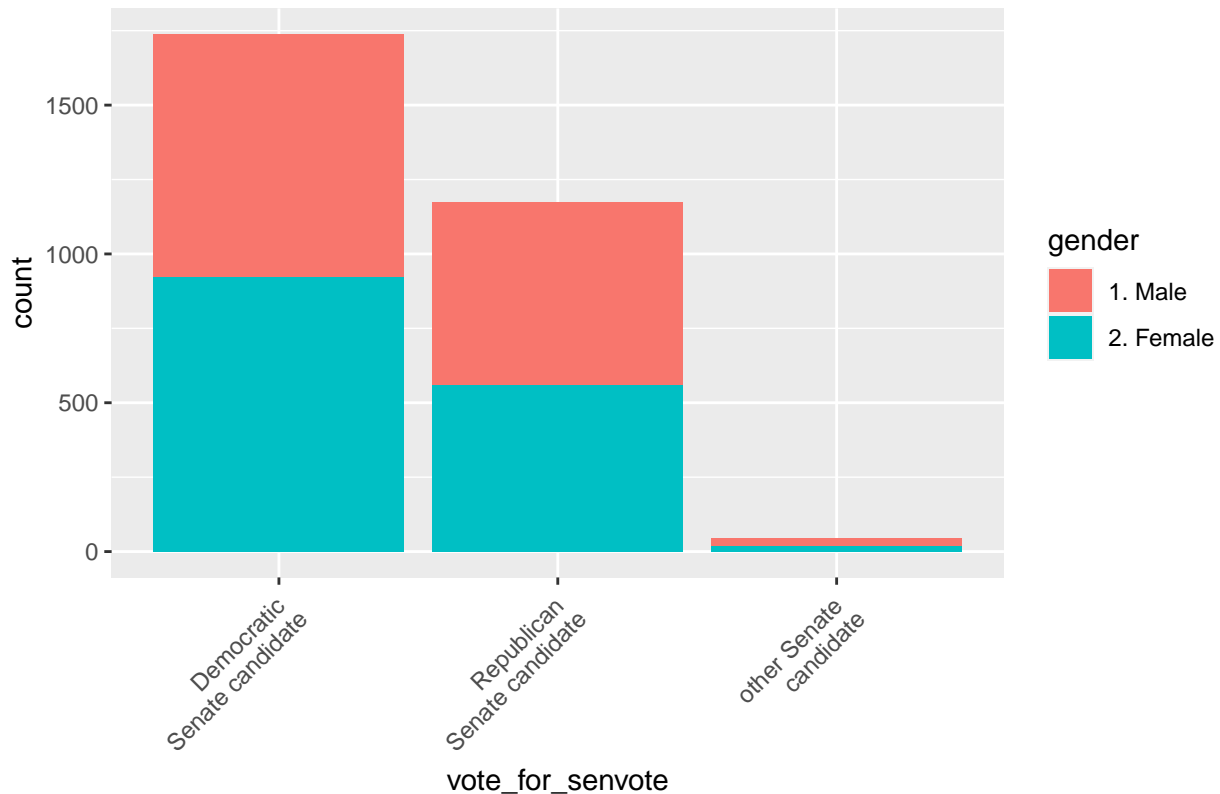


```
ggplot(anes_vote_for_senvote_by_race)+
  geom_bar(aes(x=vote_for_senvote, fill=vote_for_senvote))+
  theme(axis.text.x = element_text(angle = 45, hjust = 1))+
  labs(title="Which party did different racial groups vote for as Senvote in the election?")+
  scale_x_discrete(labels=c("1. White, non-Hispanic", "2. Black, non-Hispanic", "3. Asian, native Hawaiian \\",
    scale_fill_discrete(name="vote for Senvote", breaks=c("1. Voted for Democratic Senate candidate", "2.
```



```
ggplot(anes_vote_for_senvote_by_gender)+
  geom_bar(aes(x=vote_for_senvote, fill=gender))+
  theme(axis.text.x = element_text(angle = 45, hjust = 1))+
  labs(title="Which party did different racial groups vote for as Senvote in the election?")+
  scale_x_discrete(labels=c("1. Voted for Democratic Senate candidate" = "Democratic \n Senate candidate"
```

Which party did different racial groups vote for as Senvote in the election?



Overall, the majority favored Democrats, followed by Republicans. Half of whites voted Democratic and half of whites supported the Republicans. Among blacks, nearly all voted for Democrats (Obama is black & Democrats, so there may exist racial bias). Among Hispanic, most people voted for Democrats. For the other races, the vote was evenly split, or close to evenly split by Democrats and Republican. There is no obvious gender bias in voting for Senate.

#conclusion: There is no obvious gender bias in voting for president, Senvote and U.S House parts of election. Whites have a higher voice because of the large number of whites in the election. The Democrats and the Republicans are basically in a close race for voting for U.S House and Senvote, but the Democrats are a little more likely to vote. The similar situation happens on Obama and Romney. It's worth noting that almost all blacks voted for Obama and the Democrats, making a influence in this election (blacks have the second largest population, followed by whites). There exists a gender bias in 2012 election.