

Week-11:diary entry+Placeholders integrated with webpage

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```
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ----- tidyverse 2.0.0 --
## v dplyr      1.1.3      v readr      2.1.4
## v forcats    1.0.0      v stringr   1.5.0
## v ggplot2    3.4.3      v tibble    3.2.1
## v lubridate  1.9.2      v tidyr     1.3.0
## v purrr      1.0.2
## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()     masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
homicide <- read.csv("database2.csv")
head(homicide)
```

```
##   Record.ID Agency.Code Agency.Name      Agency.Type      City State Year
## 1         1      AK00101  Anchorage Municipal Police Anchorage Alaska 1980
## 2         2      AK00101  Anchorage Municipal Police Anchorage Alaska 1980
## 3         3      AK00101  Anchorage Municipal Police Anchorage Alaska 1980
## 4         4      AK00101  Anchorage Municipal Police Anchorage Alaska 1980
## 5         5      AK00101  Anchorage Municipal Police Anchorage Alaska 1980
## 6         6      AK00101  Anchorage Municipal Police Anchorage Alaska 1980
##   Month Incident      Crime.Type Crime.Solved Victim.Sex Victim.Age
## 1 January         1 Murder or Manslaughter      Yes      Male        14
## 2  March         1 Murder or Manslaughter      Yes      Male        43
## 3  March         2 Murder or Manslaughter      No      Female       30
## 4  April         1 Murder or Manslaughter      Yes      Male        43
## 5  April         2 Murder or Manslaughter      No      Female       30
## 6   May         1 Murder or Manslaughter      Yes      Male        30
##   Victim.Race Victim.Ethnicity Perpetrator.Sex
## 1 Native American/Alaska Native      Unknown      Male
## 2                        White      Unknown      Male
## 3 Native American/Alaska Native      Unknown      Unknown
## 4                        White      Unknown      Male
## 5 Native American/Alaska Native      Unknown      Unknown
## 6                        White      Unknown      Male
##   Perpetrator.Age      Perpetrator.Race Perpetrator.Ethnicity
## 1             15 Native American/Alaska Native      Unknown
## 2             42                        White      Unknown
## 3              0                        Unknown      Unknown
```

| | | | | | |
|------|--------------|---------------|--------------|-------------------|---------------|
| ## 4 | 42 | | White | Unknown | |
| ## 5 | 0 | | Unknown | Unknown | |
| ## 6 | 36 | | White | Unknown | |
| ## | Relationship | Weapon | Victim.Count | Perpetrator.Count | Record.Source |
| ## 1 | Acquaintance | Blunt Object | 0 | 0 | FBI |
| ## 2 | Acquaintance | Strangulation | 0 | 0 | FBI |
| ## 3 | Unknown | Unknown | 0 | 0 | FBI |
| ## 4 | Acquaintance | Strangulation | 0 | 0 | FBI |
| ## 5 | Unknown | Unknown | 0 | 1 | FBI |
| ## 6 | Acquaintance | Rifle | 0 | 0 | FBI |

Which rows and columns of the dataset will be used to answer this question?

Year, Perpetrator Age, Relationship, Weapon, Sex

```
new <- homicide %>%
  filter(Year == 2014 & Perpetrator.Sex != "Unknown" & Relationship != "Unknown" & Weapon != "Unknown" &
  select(Year, Perpetrator.Age, Relationship, Weapon, Perpetrator.Sex)

head(new)
```

| | | | | | |
|------|------|-----------------|--------------|--------------|-----------------|
| ## | Year | Perpetrator.Age | Relationship | Weapon | Perpetrator.Sex |
| ## 1 | 2014 | 19 | Neighbor | Firearm | Male |
| ## 2 | 2014 | 24 | Acquaintance | Firearm | Male |
| ## 3 | 2014 | 39 | Stranger | Blunt Object | Male |
| ## 4 | 2014 | 22 | Girlfriend | Firearm | Male |
| ## 5 | 2014 | 38 | Family | Knife | Male |
| ## 6 | 2014 | 26 | Acquaintance | Firearm | Male |

```
unique(new$Relationship)
```

| | | | |
|---------|-------------------|----------------------|------------------------|
| ## [1] | "Neighbor" | "Acquaintance" | "Stranger" |
| ## [4] | "Girlfriend" | "Family" | "Wife" |
| ## [7] | "Boyfriend" | "Daughter" | "Mother" |
| ## [10] | "Employer" | "Father" | "Friend" |
| ## [13] | "Son" | "Brother" | "Husband" |
| ## [16] | "In-Law" | "Stepson" | "Stepfather" |
| ## [19] | "Ex-Wife" | "Sister" | "Boyfriend/Girlfriend" |
| ## [22] | "Common-Law Wife" | "Common-Law Husband" | "Stepdaughter" |
| ## [25] | "Ex-Husband" | "Employee" | |

```
unique(new$Weapon)
```

| | | | | |
|---------|--------------|----------------|-----------------|-----------|
| ## [1] | "Firearm" | "Blunt Object" | "Knife" | "Fire" |
| ## [5] | "Handgun" | "Suffocation" | "Strangulation" | "Shotgun" |
| ## [9] | "Rifle" | "Drugs" | "Gun" | "Poison" |
| ## [13] | "Explosives" | | | |

```
unique(new$Perpetrator.Age)
```

```
## [1] 19 24 39 22 38 26 28 17 44 27 40 20 21 23 30 37 25 69 31 47 29 50 61 42 52
## [26] 57 36 35 32 49 41 18 60 54 77 43 53 34 48 16 58 51 45 63 46 33 66 55 15 64
## [51] 56 72 14 86 59 68 84 65 80 73 74 71 76 62 75 87 70 78 13 81 95 6 67 83 12
## [76] 85 11 88 9 90 93 10 3 92 79 82
```

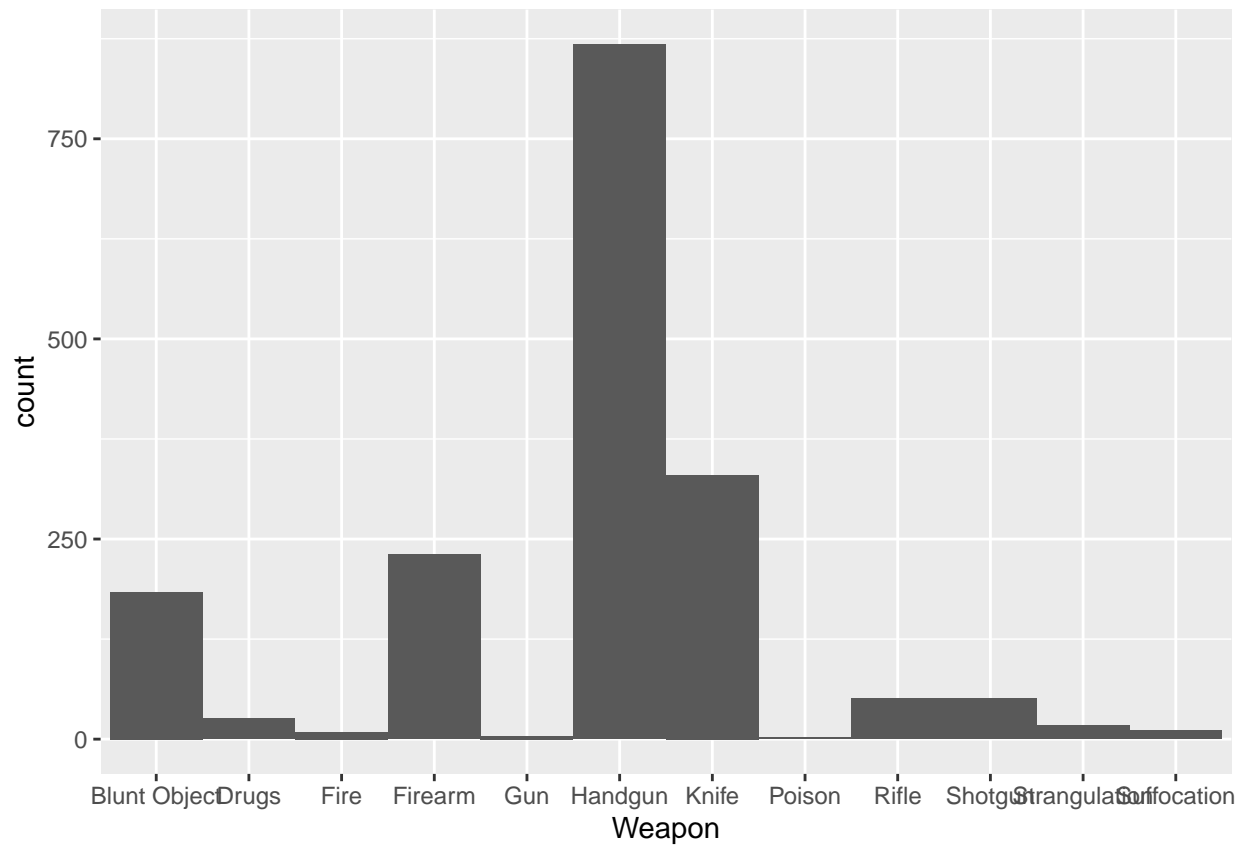
```
newdf <- new %>%
  mutate(RelationshipNew = case_when(
    Relationship == "Mother" ~ "Family",
    Relationship == "Father" ~ "Family",
    Relationship == "Family" ~ "Family",
    Relationship == "Wife" ~ "Family",
    Relationship == "Daughter" ~ "Family",
    Relationship == "Son" ~ "Family",
    Relationship == "Husband" ~ "Family",
    Relationship == "In-Law" ~ "Family",
    Relationship == "Sister" ~ "Family",
    Relationship == "Brother" ~ "Family",
    Relationship == "Stepdaughter" ~ "FamilyAfter",
    Relationship == "Stepson" ~ "FamilyAfter",
    Relationship == "Stepfather" ~ "FamilyAfter",
    Relationship == "Girlfriend" ~ "VeryClose",
    Relationship == "Boyfriend" ~ "VeryClose",
    Relationship == "Boyfriend/Girlfriend" ~ "VeryClose",
    Relationship == "Friend" ~ "VeryClose",
    Relationship == "Ex-Wife" ~ "MarriageBefore",
    Relationship == "Ex-Husband" ~ "MarriageBefore",
    Relationship == "Acquaintance" ~ "Acquaintance",
    Relationship == "Employer" ~ "Acquaintance",
    Relationship == "Employee" ~ "Acquaintance",
    Relationship == "Neighbor" ~ "Acquaintance",
    Relationship == "Stranger" ~ "Stranger",
    Relationship == "Common-Law Wife" ~ "CommonLaw",
    Relationship == "Common-Law Husband" ~ "CommonLaw",
  ))
head(newdf)
```

```
##   Year Perpetrator.Age Relationship      Weapon Perpetrator.Sex
## 1 2014             19   Neighbor    Firearm             Male
## 2 2014             24 Acquaintance    Firearm             Male
## 3 2014             39   Stranger Blunt Object             Male
## 4 2014             22  Girlfriend    Firearm             Male
## 5 2014             38     Family      Knife             Male
## 6 2014             26 Acquaintance    Firearm             Male
## RelationshipNew
## 1 Acquaintance
## 2 Acquaintance
## 3 Stranger
## 4 VeryClose
## 5 Family
## 6 Acquaintance
```

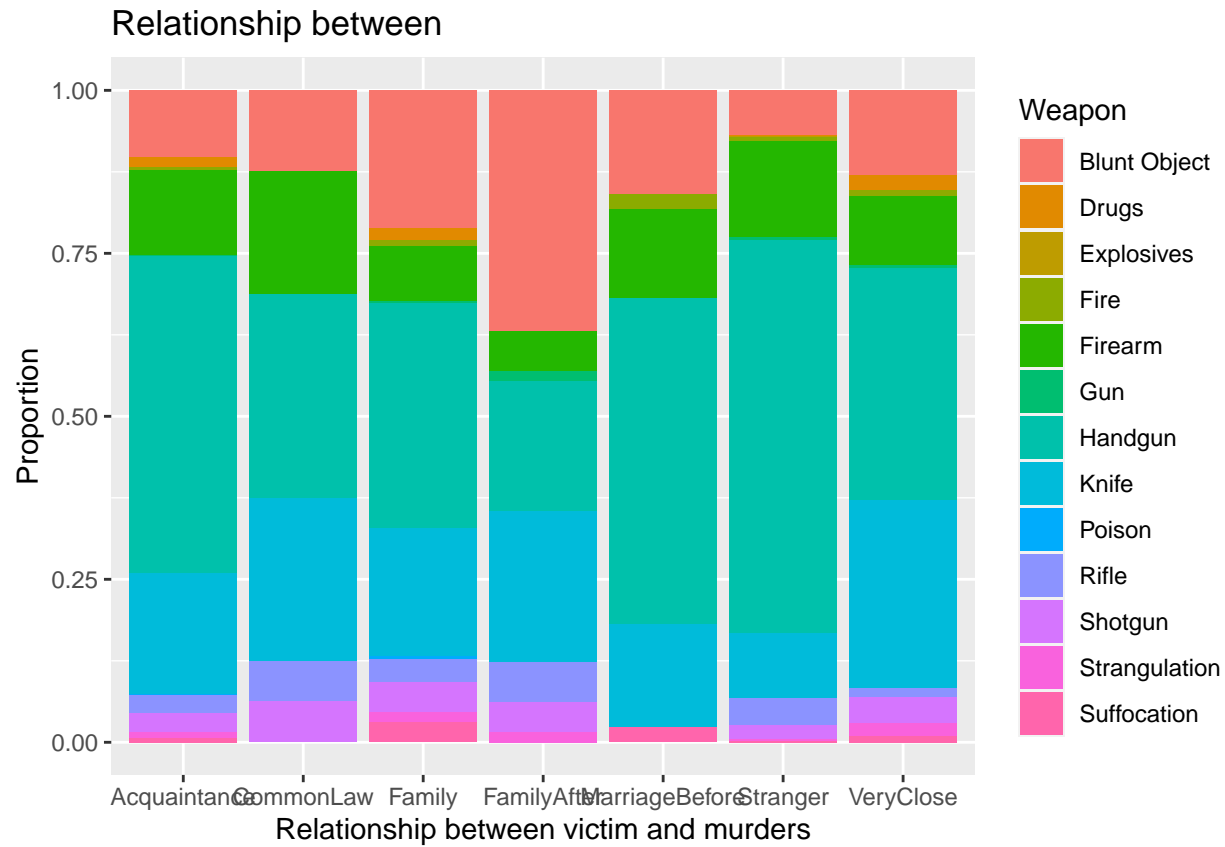
```
hello <- newdf %>% filter(RelationshipNew == "Acquaintance") %>% select(RelationshipNew, Weapon)
head(hello)
```

```
## RelationshipNew      Weapon
## 1 Acquaintance      Firearm
## 2 Acquaintance      Firearm
## 3 Acquaintance      Firearm
## 4 Acquaintance      Knife
## 5 Acquaintance      Knife
## 6 Acquaintance Blunt Object
```

```
library(ggplot2)
bar_width <- 1
ggplot(data = hello, aes(x = Weapon)) +
  geom_bar(width = bar_width)
```

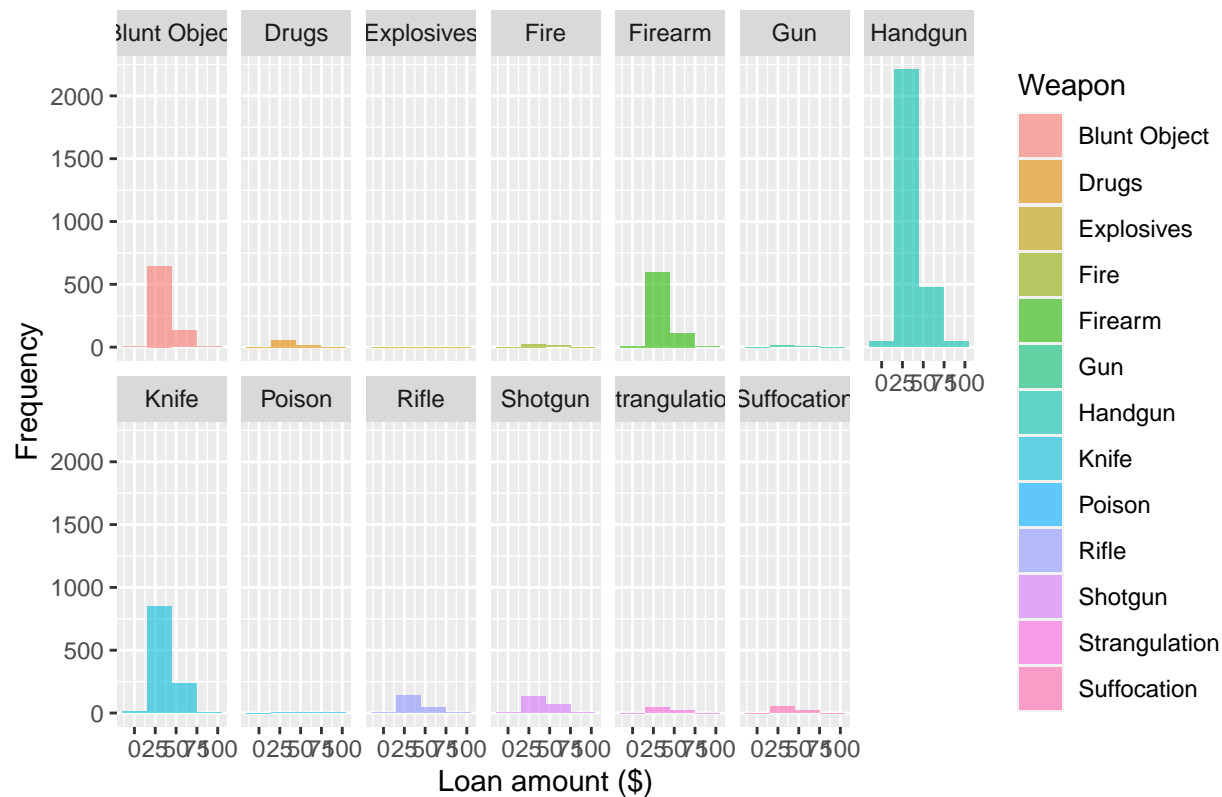


```
ggplot(data = newdf, aes(x = RelationshipNew,
  fill = Weapon)) +
  geom_bar(position = "fill") + labs(x = "Relationship between victim and murders", y = "Proportion", title = "Proportion of weapons used in murders by relationship")
```



```
ggplot(newdf, aes(x = Perpetrator.Age, fill = Weapon)) + geom_histogram(binwidth = 30, alpha = 0.6) +
labs(x = "Loan amount ($)", y = "Frequency", title = "Age vs. Weapon Use during homicide") + facet_wrap(~
```

Age vs. Weapon Use during homicide

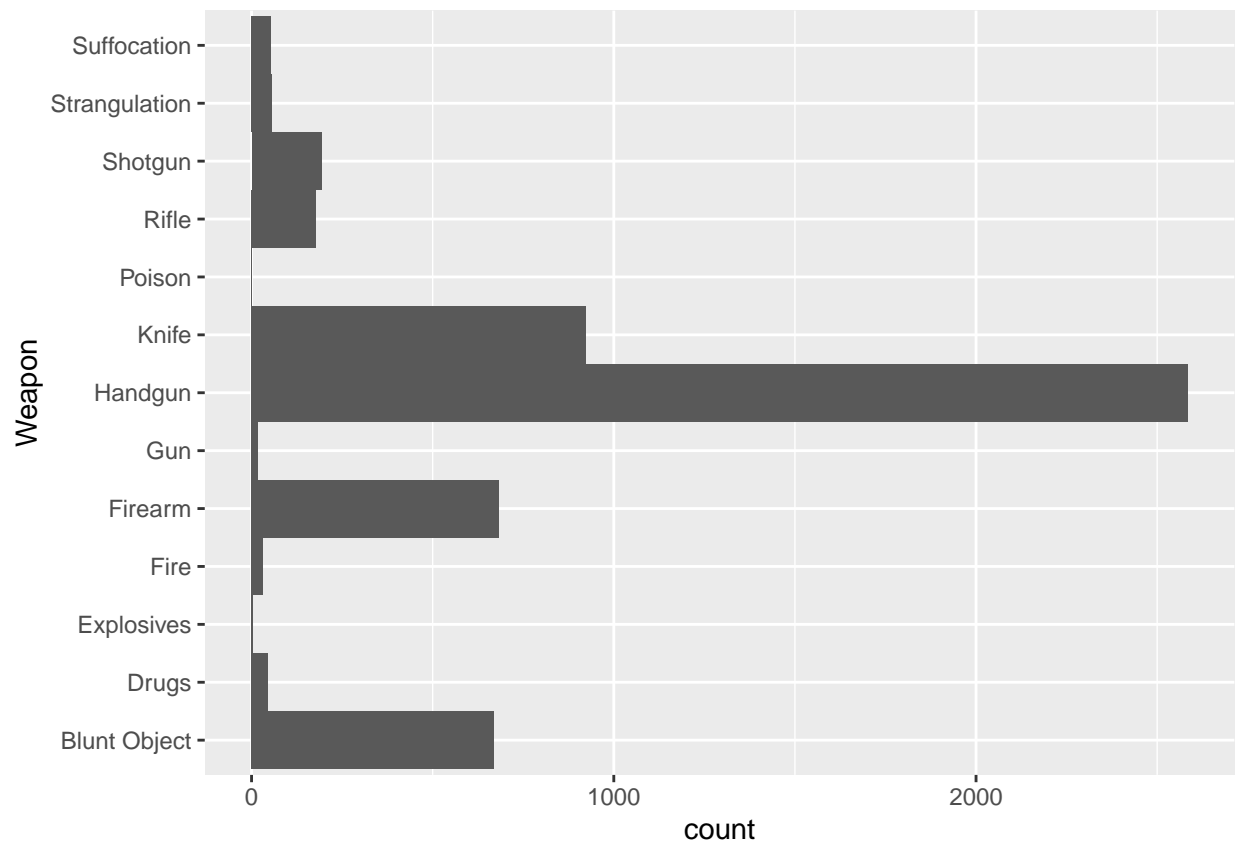


Sex

```
summer <- newdf %>% filter(Perpetrator.Sex == "Male") %>% select (Perpetrator.Sex, Weapon)
head(summer)
```

```
##   Perpetrator.Sex   Weapon
## 1             Male  Firearm
## 2             Male  Firearm
## 3             Male Blunt Object
## 4             Male  Firearm
## 5             Male   Knife
## 6             Male  Firearm
```

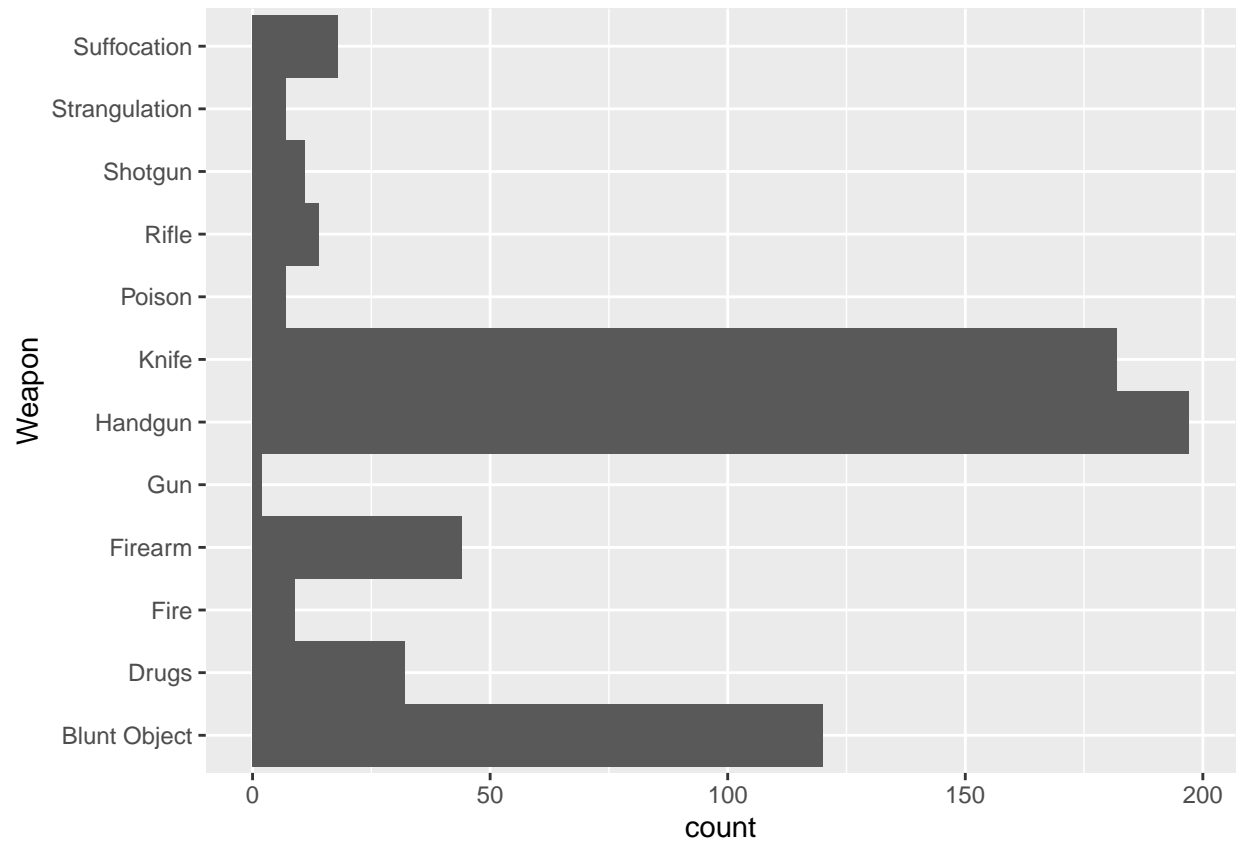
```
bar_width <- 1
ggplot(data = summer, aes(y = Weapon)) +
  geom_bar(width = bar_width)
```



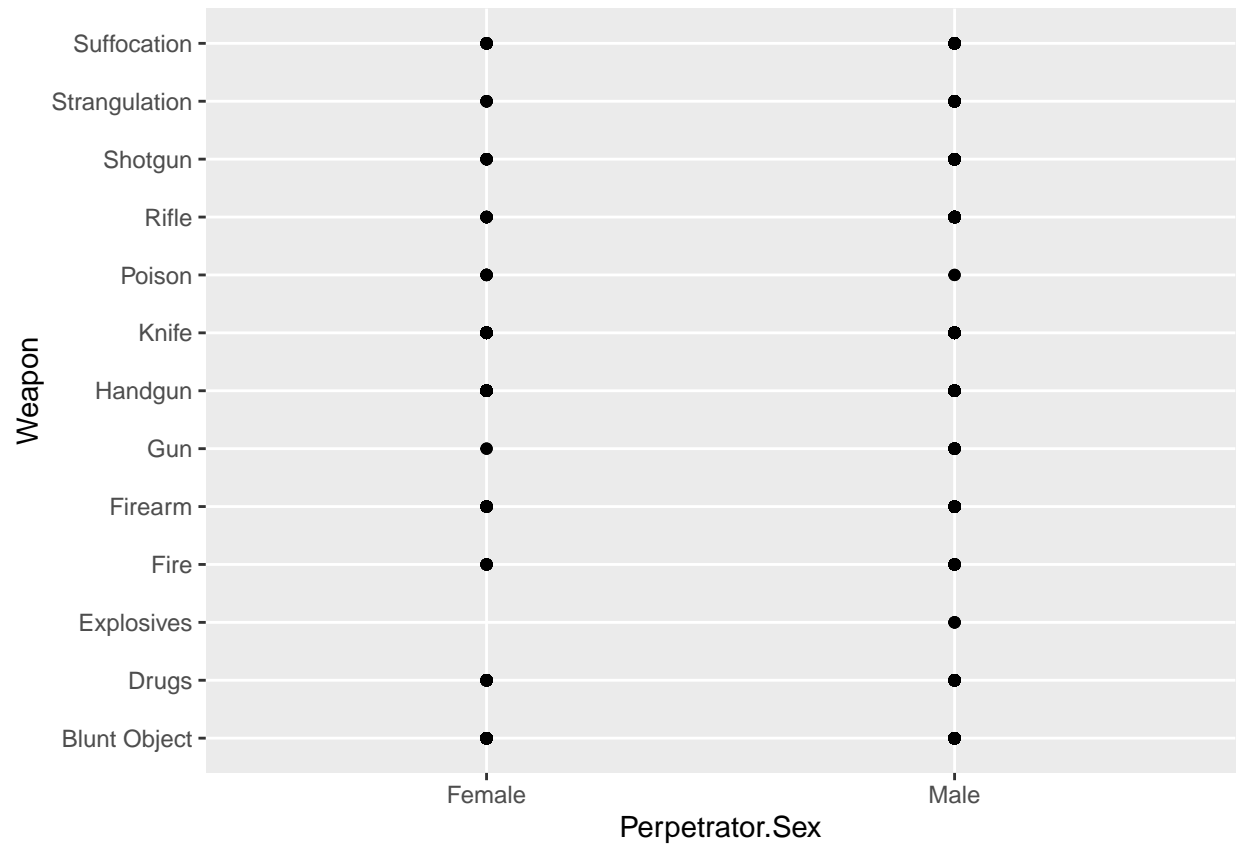
```
winter <- newdf %>% filter(Perpetrator.Sex == "Female") %>% select (Perpetrator.Sex, Weapon)
head(winter)
```

```
##   Perpetrator.Sex      Weapon
## 1      Female      Knife
## 2      Female Suffocation
## 3      Female Blunt Object
## 4      Female      Knife
## 5      Female      Fire
## 6      Female      Shotgun
```

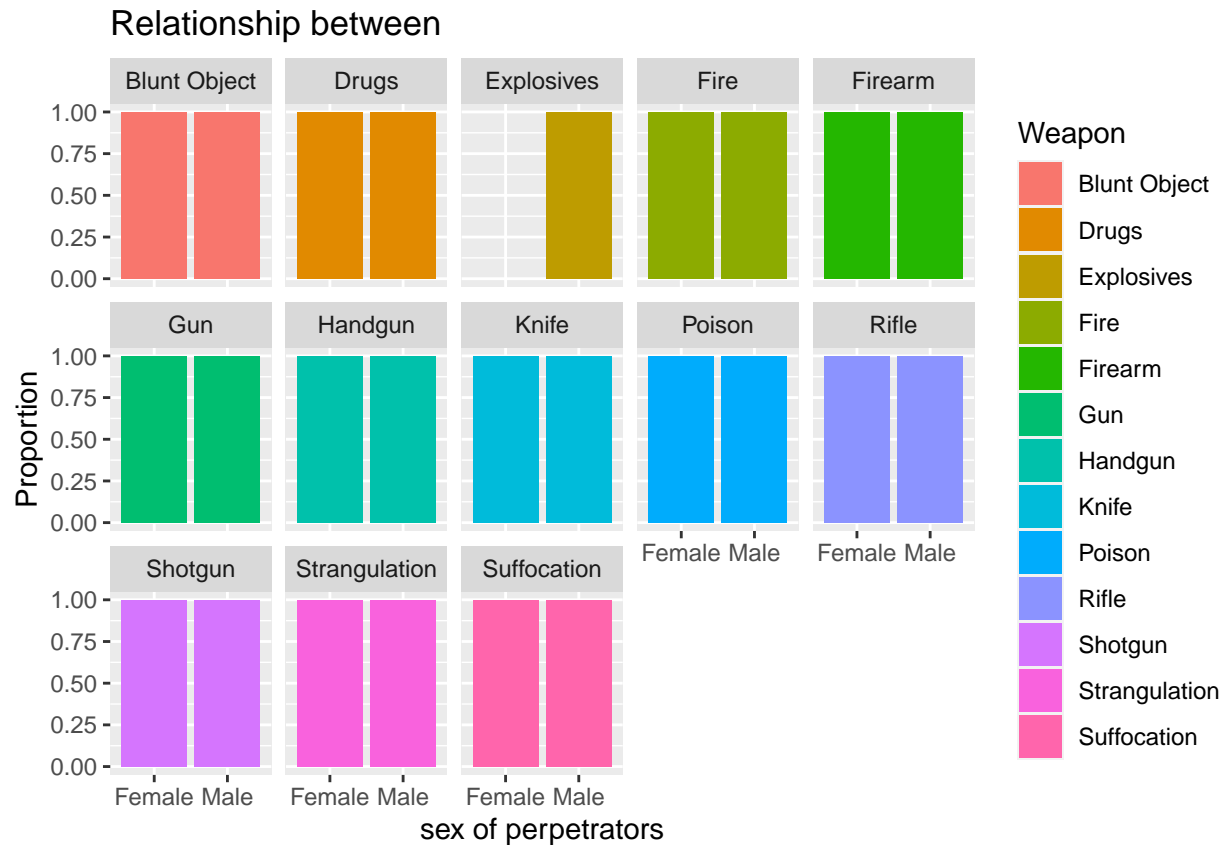
```
bar_width <- 1
ggplot(data = winter, aes(y = Weapon)) +
  geom_bar(width = bar_width)
```



```
ggplot(newdf, aes(x = Perpetrator.Sex, y = Weapon)) +  
  geom_point()
```

```
ggplot(data = newdf, aes(x = Perpetrator.Sex,
  fill = Weapon)) +
  geom_bar(position = "fill") + labs(x = "sex of perpetrators", y = "Proportion", title = "Relationship
```

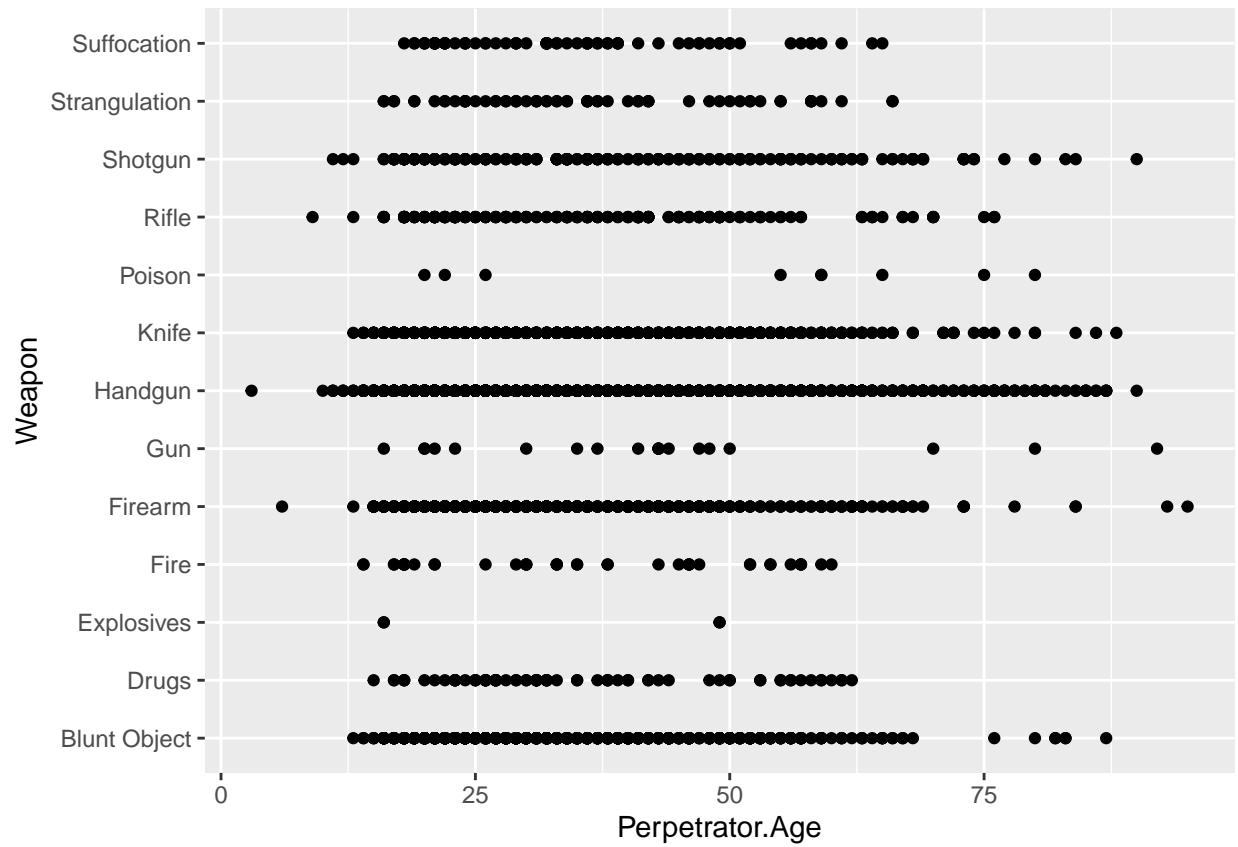


Age

```
as <- newdf %>% arrange(Perpetrator.Age)
head(as)
```

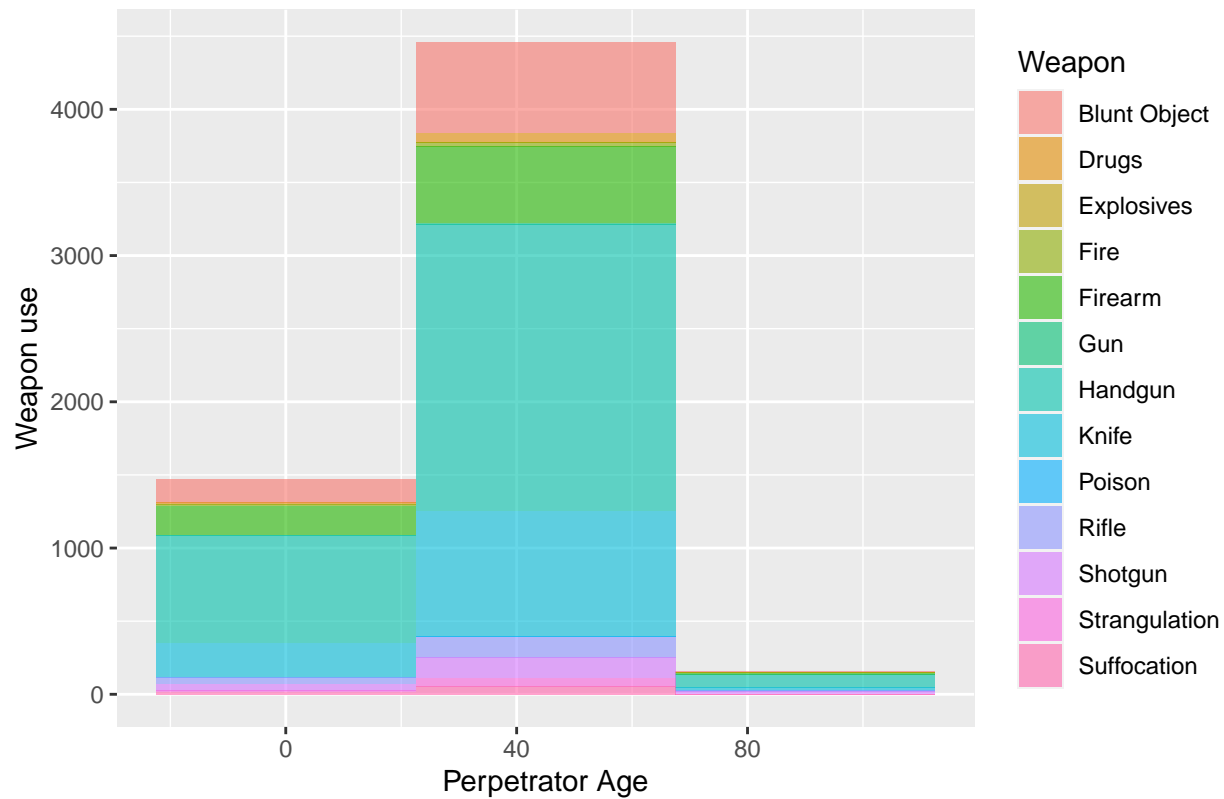
```
##   Year Perpetrator.Age Relationship Weapon Perpetrator.Sex RelationshipNew
## 1 2014          3      Mother Handgun      Male      Family
## 2 2014          6      Family Firearm      Male      Family
## 3 2014          9      Brother Rifle      Male      Family
## 4 2014         10      Brother Handgun      Male      Family
## 5 2014         11      Brother Handgun      Male      Family
## 6 2014         11  Stepfather Handgun      Male  FamilyAfter
```

```
ggplot(as, aes(x = Perpetrator.Age, y = Weapon)) +
  geom_point()
```



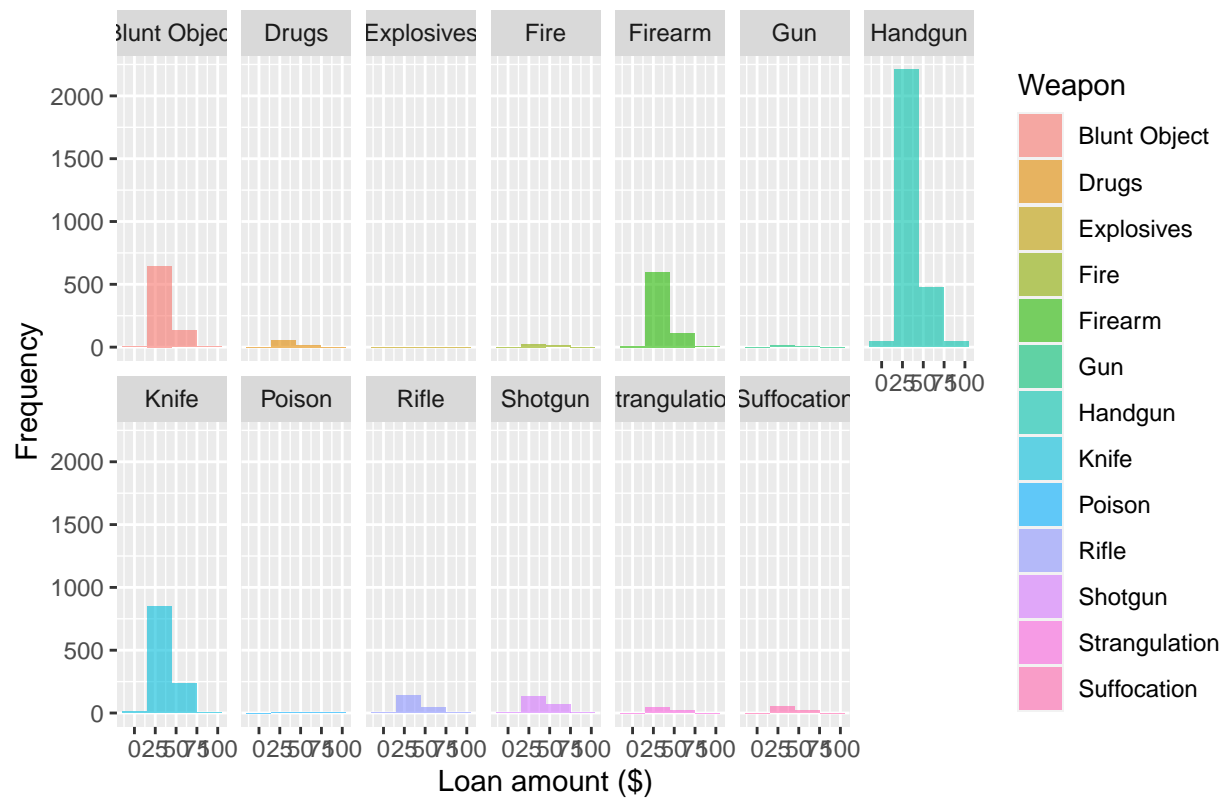
```
ggplot(as, aes(x = Perpetrator.Age, fill = Weapon)) + geom_histogram(binwidth = 45, alpha = 0.6) +
labs(x = "Perpetrator Age", y = "Weapon use", title = "Amounts of Lending Club loans")
```

Amounts of Lending Club loans

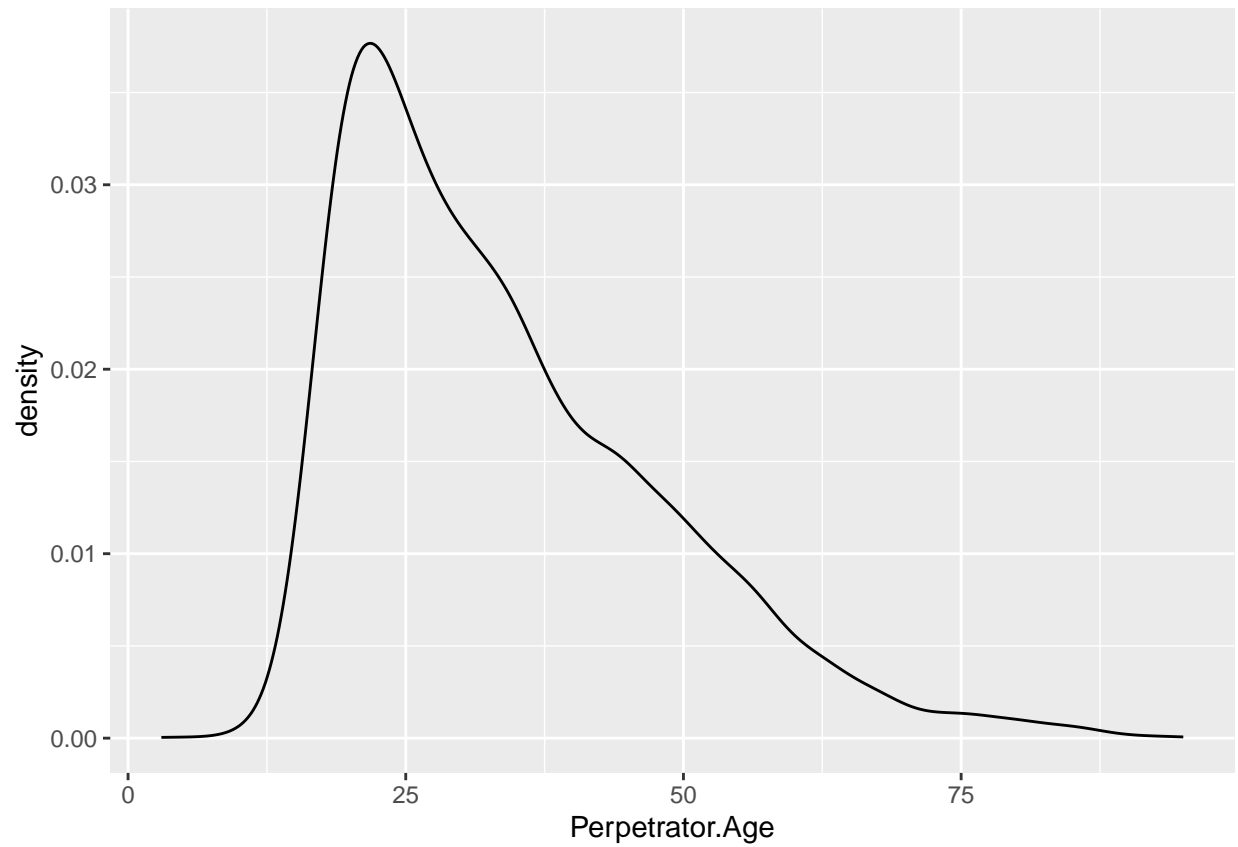


```
ggplot(as, aes(x = Perpetrator.Age, fill = Weapon)) + geom_histogram(binwidth = 30, alpha = 0.6) +
labs(x = "Loan amount ($)", y = "Frequency", title = "Age vs. Weapon Use during homicide") + facet_wrap(~
```

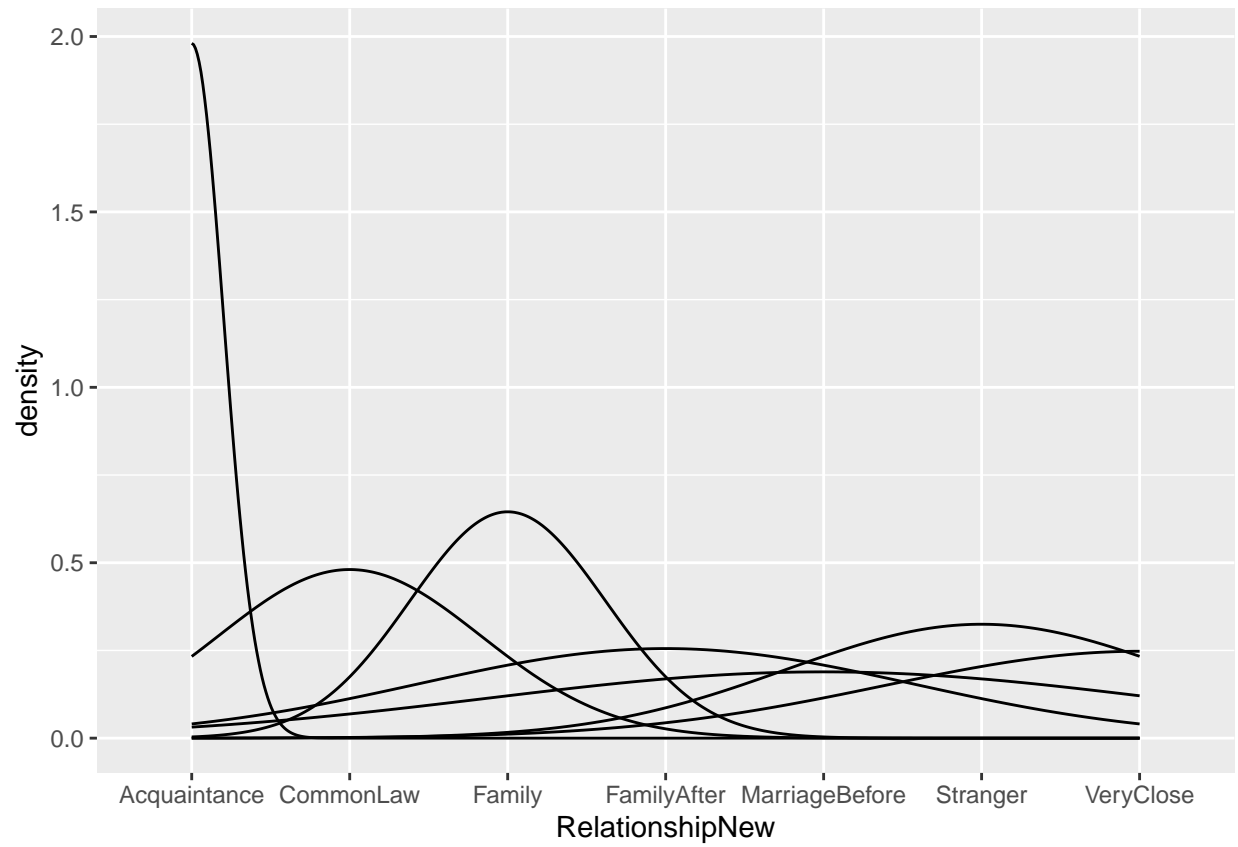
Age vs. Weapon Use during homicide



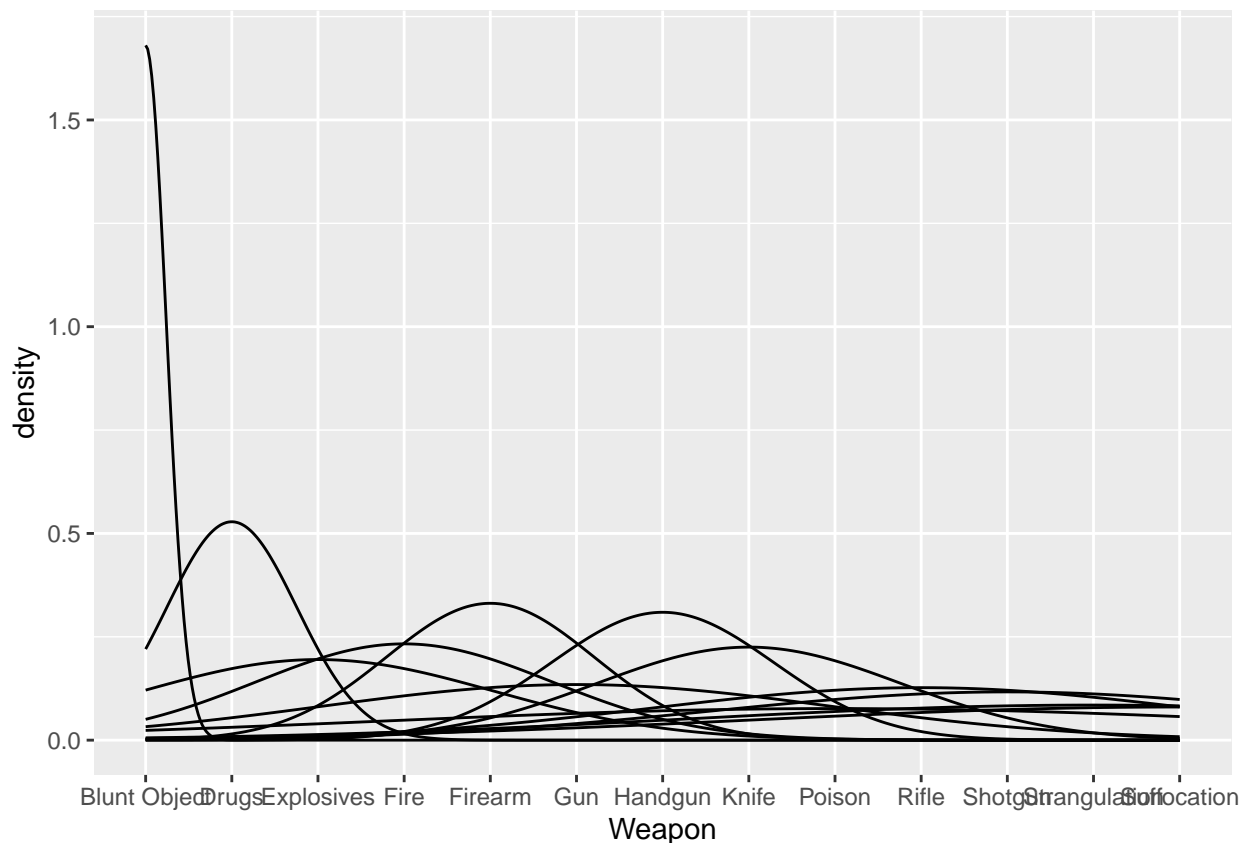
```
ggplot(as, aes(x = Perpetrator.Age)) + geom_density()
```



```
ggplot(as, aes(x = RelationshipNew)) + geom_density()
```



```
ggplot(as, aes(x = Weapon)) + geom_density()
```



```
ggplot(as, aes(x = RelationshipNew, fill = Weapon)) +
  geom_density(adjust = 1, alpha = 0.5)
```

```
## Warning: Groups with fewer than two data points have been dropped.
## Groups with fewer than two data points have been dropped.
## Groups with fewer than two data points have been dropped.
## Groups with fewer than two data points have been dropped.
## Groups with fewer than two data points have been dropped.
```

```
## Warning in max(ids, na.rm = TRUE): no non-missing arguments to max; returning
## -Inf
```

```
## Warning in max(ids, na.rm = TRUE): no non-missing arguments to max; returning
## -Inf
```

```
## Warning in max(ids, na.rm = TRUE): no non-missing arguments to max; returning
## -Inf
```

```
## Warning in max(ids, na.rm = TRUE): no non-missing arguments to max; returning
## -Inf
```

```
## Warning in max(ids, na.rm = TRUE): no non-missing arguments to max; returning
## -Inf
```