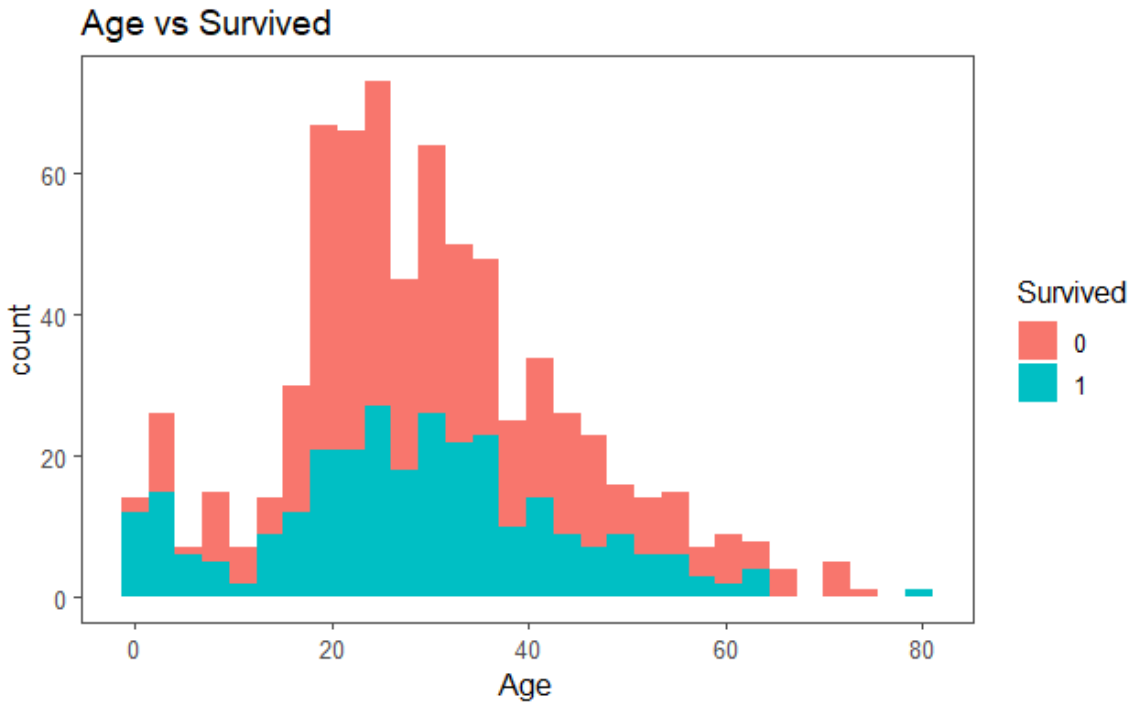
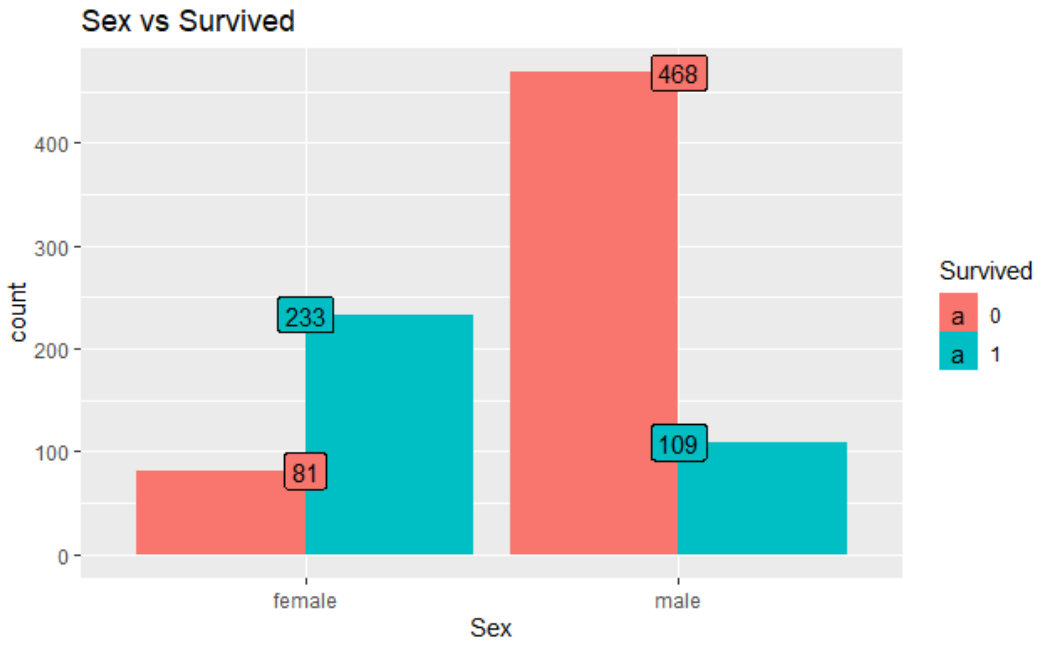
6. You may include R code in an appendix (not counted in the 5-6 page limit), but no R code or R summaries can be included in the main report. For example, present your results in tables and make sure to discuss your results in the text of the report.

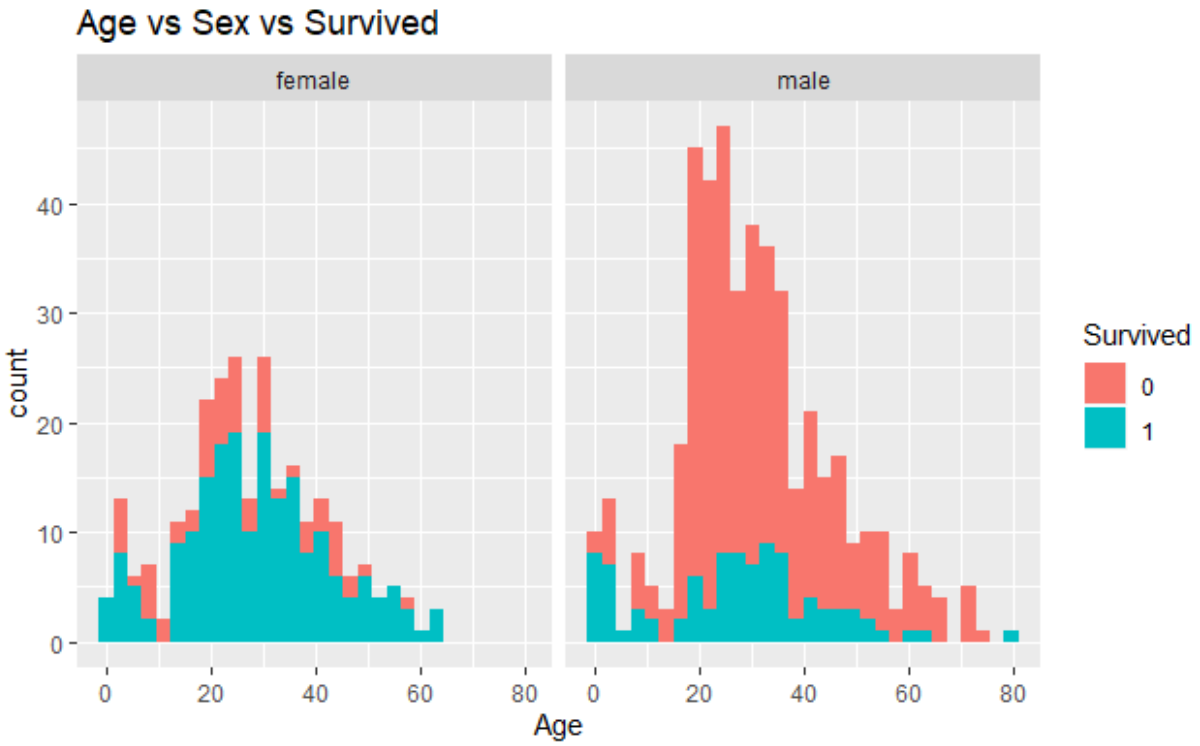
2.1 Age



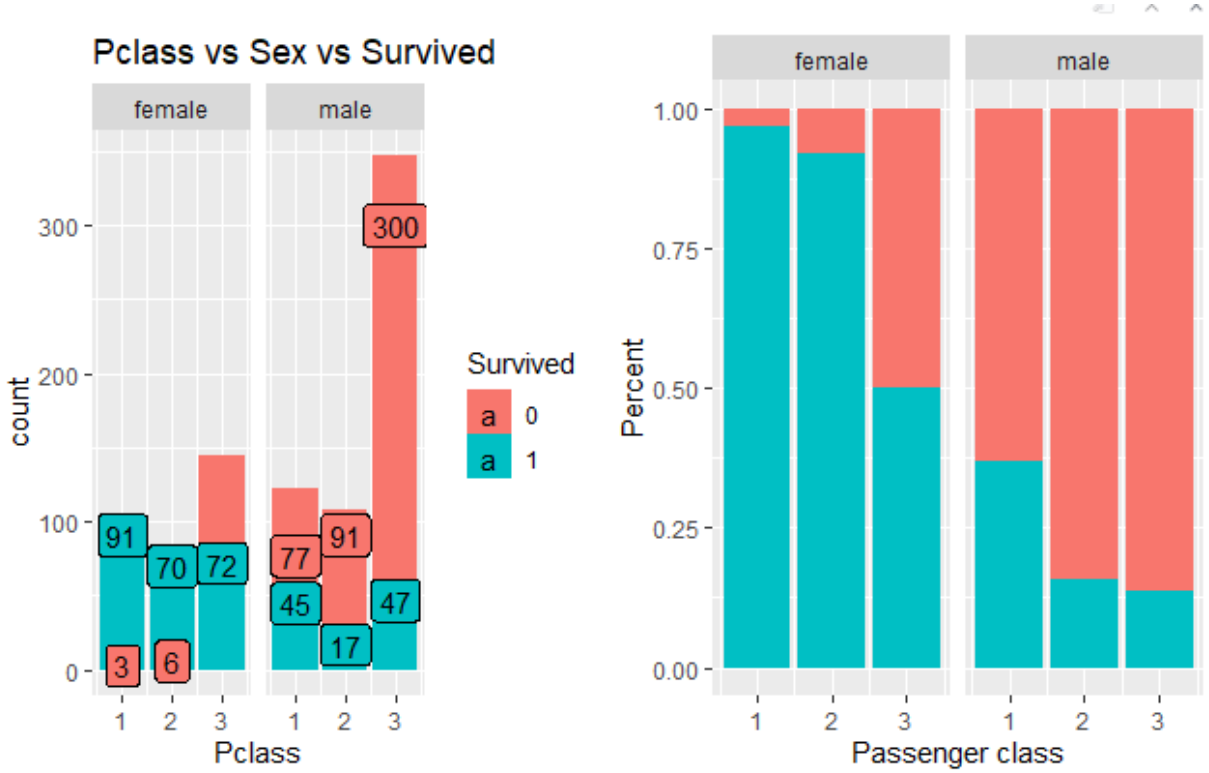
2.2 Sex Vs Survive



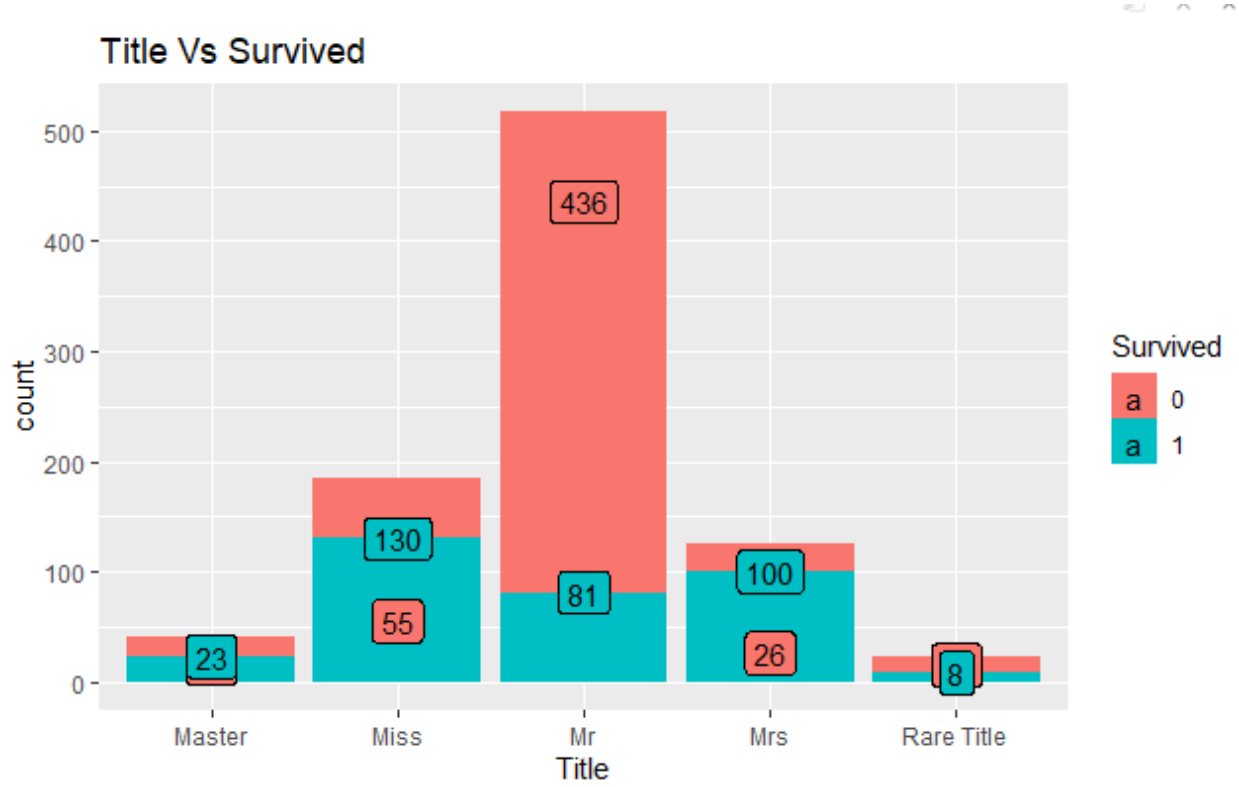
2.3 Age Vs Sex Vs Survived



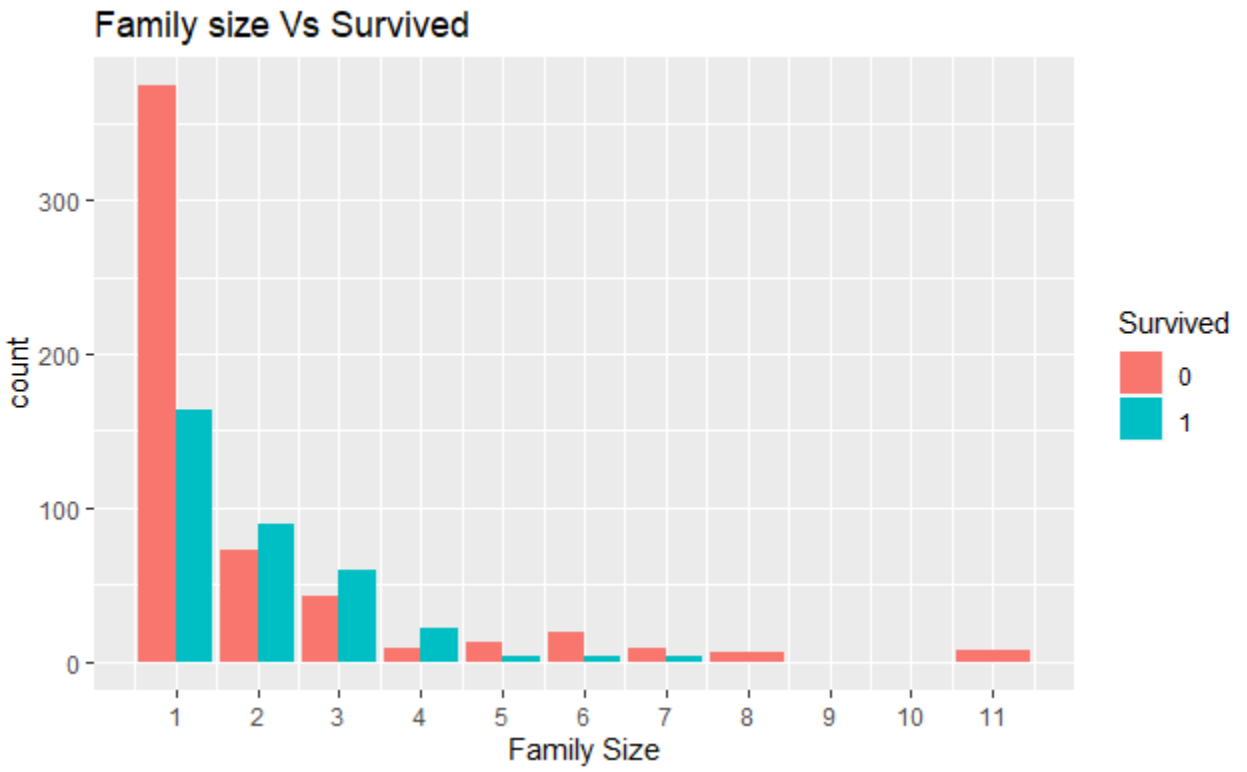
2.4. Pclass vs Sex



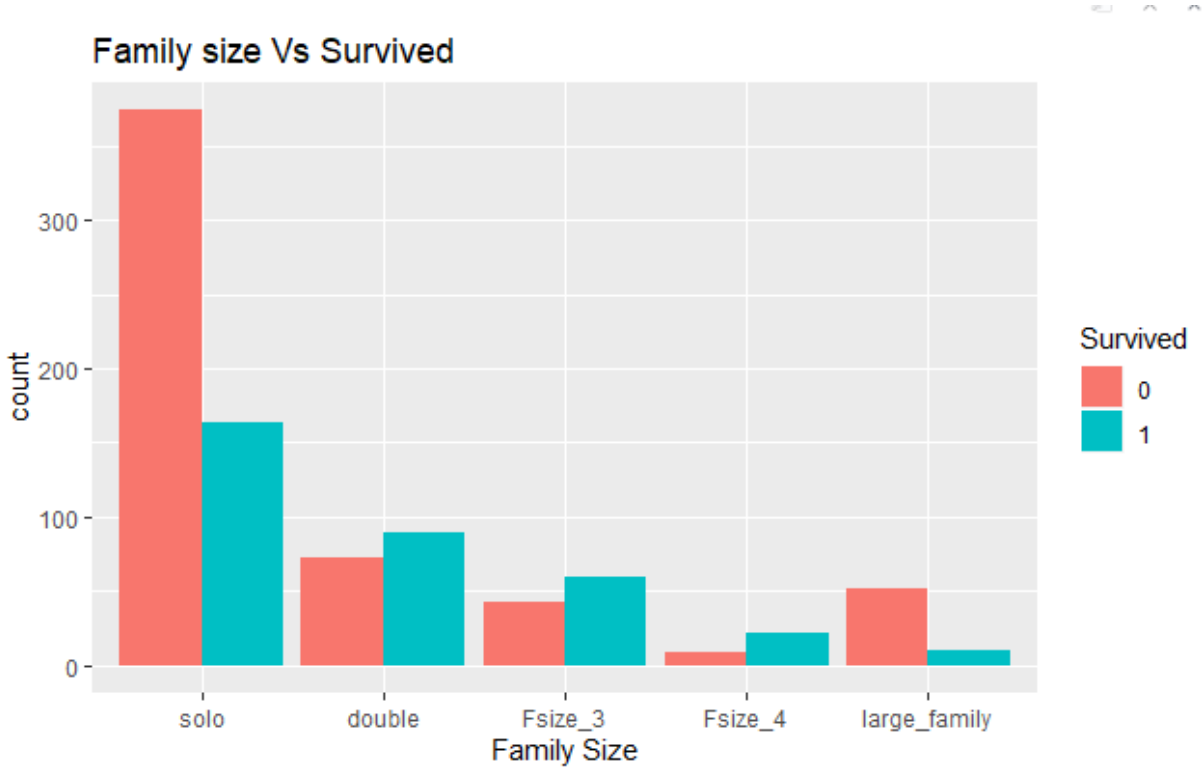
3.2 Title Vs Survived



3.3 Family size Vs Survived



4.1 Redefined the Fsize to factor:



4.2 SLLR on Survived~Age

```
Call:
glm(formula = train$Survived ~ train$Age, family = binomial)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-1.1488  -1.0361  -0.9544   1.3159   1.5908

Coefficients:
            Estimate Std. Error z value Pr(>|z|)
(Intercept) -0.05672    0.17358  -0.327   0.7438
train$Age   -0.01096    0.00533  -2.057   0.0397 *
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 964.52  on 713  degrees of freedom
Residual deviance: 960.23  on 712  degrees of freedom
  (177 observations deleted due to missingness)
AIC: 964.23

Number of Fisher Scoring iterations: 4

Analysis of Deviance Table

Model: binomial, link: logit

Response: train$Survived

Terms added sequentially (first to last)


          Df Deviance Resid. Df Resid. Dev Pr(>Chi)
NULL                        713     964.52
train$Age  1   4.2876       712     960.23  0.03839 *
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

4.3 SLLR on Survived~Sex

```
Call:
glm(formula = train$Survived ~ train$Sex, family = binomial)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-1.6462  -0.6471  -0.6471   0.7725   1.8256

Coefficients:
              Estimate Std. Error z value Pr(>|z|)
(Intercept)     1.0566     0.1290   8.191 2.58e-16 ***
train$Sexmale  -2.5137     0.1672 -15.036  < 2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 1186.7  on 890  degrees of freedom
Residual deviance:  917.8  on 889  degrees of freedom
AIC: 921.8

Number of Fisher Scoring iterations: 4

Analysis of Deviance Table

Model: binomial, link: logit

Response: train$Survived

Terms added sequentially (first to last)


          Df Deviance Resid. Df Resid. Dev  Pr(>Chi)
NULL                        890     1186.7
train$Sex  1   268.85        889      917.8 < 2.2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

4.4 SLLR on Survived~Pclass

```
Call:
glm(formula = train$Survived ~ train$Pclass, family = binomial)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-1.4094  -0.7450  -0.7450   0.9619   1.6836

Coefficients:
                    Estimate Std. Error z value Pr(>|z|)
(Intercept)           0.5306     0.1409   3.766 0.000166 ***
train$PclassClass_2  -0.6394     0.2041  -3.133 0.001731 **
train$PclassClass_3  -1.6704     0.1759  -9.496  < 2e-16 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 1186.7  on 890  degrees of freedom
Residual deviance: 1083.1  on 888  degrees of freedom
AIC: 1089.1

Number of Fisher Scoring iterations: 4

Analysis of Deviance Table

Model: binomial, link: logit

Response: train$Survived

Terms added sequentially (first to last)


             Df Deviance Resid. Df Resid. Dev  Pr(>Chi)
NULL                           890     1186.7
train$Pclass  2   103.55       888     1083.1 < 2.2e-16 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

4.5 SLLR on Survived~Fsize

```
Call:
glm(formula = train$Survived ~ train$Fsize, family = binomial)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-1.6049  -0.8506  -0.8506   1.0888   1.9103

Coefficients:
                       Estimate Std. Error z value Pr(>|z|)
(Intercept)              0.2120     0.1585   1.337   0.1811
train$FsizeFsize_3       0.1044     0.2556   0.408   0.6830
train$FsizeFsize_4       0.7531     0.4447   1.694   0.0903 .
train$Fsizelarge_family -1.8606     0.3799  -4.897 9.72e-07 ***
train$Fsizesolo         -1.0425     0.1842  -5.659 1.52e-08 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 1186.7  on 890  degrees of freedom
Residual deviance: 1108.5  on 886  degrees of freedom
AIC: 1118.5

Number of Fisher Scoring iterations: 4

Analysis of Deviance Table

Model: binomial, link: logit

Response: train$Survived

Terms added sequentially (first to last)


            Df Deviance Resid. Df Resid. Dev  Pr(>Chi)
NULL                          890     1186.7
train$Fsize  4   78.176       886     1108.5 4.238e-16 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

4.6 SLLR on Survived~Age + Sex + Pclass + Fsize

```
Call:
glm(formula = train$Survived ~ train$Age + train$Sex + train$Pclass +
    train$Fsize, family = binomial)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-3.0603  -0.6347  -0.3936   0.5997   2.5288

Coefficients:
                          Estimate Std. Error z value Pr(>|z|)
(Intercept)               3.948604   0.453484   8.707  < 2e-16 ***
train$Age                -0.040119   0.008448  -4.749 2.04e-06 ***
train$Sexmale            -2.680324   0.223901 -11.971  < 2e-16 ***
train$PclassClass_2      -1.466435   0.291928  -5.023 5.08e-07 ***
train$PclassClass_3      -2.494861   0.293589  -8.498  < 2e-16 ***
train$FsizeFsize_3        0.480501   0.348034   1.381 0.167398
train$FsizeFsize_4        0.805076   0.604634   1.332 0.183021
train$Fsizelarge_family -1.808759   0.491987  -3.676 0.000237 ***
train$Fsizesolo           0.102978   0.264714   0.389 0.697264
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 964.52  on 713  degrees of freedom
Residual deviance: 621.02  on 705  degrees of freedom
  (177 observations deleted due to missingness)
AIC: 639.02

Number of Fisher Scoring iterations: 5

Analysis of Deviance Table

Model: binomial, link: logit

Response: train$Survived

Terms added sequentially (first to last)


             Df Deviance Resid. Df Resid. Dev  Pr(>Chi)
NULL                          713     964.52
train$Age     1    4.288       712     960.23   0.03839 *
train$Sex     1  210.271       711     749.96 < 2.2e-16 ***
train$Pclass  2  102.674       709     647.28 < 2.2e-16 ***
train$Fsize   4   26.267       705     621.02 2.795e-05 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

5. SLLP with interaction terms

```
glm.fit: fitted probabilities numerically 0 or 1 occurredAnalysis of Deviance
Table

Model: binomial, link: logit

Response: train$Survived

Terms added sequentially (first to last)


                                          Df Deviance Resid. Df
NULL                                                      713
train$Age                                  1    4.288       712
train$Sex                                  1  210.271       711
train$Pclass                               2  102.674       709
train$Fsize                                4   26.267       705
train$Age:train$Sex                        1   12.176       704
train$Age:train$Pclass                     2    4.029       702
train$Sex:train$Pclass                     2   24.456       700
train$Age:train$Fsize                      4    7.680       696
train$Sex:train$Fsize                      4    2.089       692
train$Pclass:train$Fsize                   8   10.967       684
train$Age:train$Sex:train$Pclass           2    1.497       682
train$Age:train$Sex:train$Fsize            4   10.050       678
train$Age:train$Pclass:train$Fsize         8   25.485       670
train$Sex:train$Pclass:train$Fsize         7   12.943       663
train$Age:train$Sex:train$Pclass:train$Fsize 7   1.634       656
                                          Resid. Dev  Pr(>Chi)
NULL                                          964.52
train$Age                                     960.23 0.0383922 *
train$Sex                                     749.96 < 2.2e-16 ***
train$Pclass                                  647.28 < 2.2e-16 ***
train$Fsize                                   621.02 2.795e-05 ***
train$Age:train$Sex                           608.84 0.0004841 ***
train$Age:train$Pclass                        604.81 0.1334124
train$Sex:train$Pclass                        580.36 4.891e-06 ***
train$Age:train$Fsize                         572.68 0.1040205
train$Sex:train$Fsize                         570.59 0.7194818
train$Pclass:train$Fsize                      559.62 0.2035988
train$Age:train$Sex:train$Pclass              558.12 0.4731723
train$Age:train$Sex:train$Fsize               548.07 0.0395971 *
train$Age:train$Pclass:train$Fsize            522.59 0.0012859 **
train$Sex:train$Pclass:train$Fsize            509.65 0.0735103 .
train$Age:train$Sex:train$Pclass:train$Fsize   508.01 0.9772951
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```