ADA HW10

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Consider the Mayo Clinic Lung Cancer Data in R package survival: data(lung) or data(cancer): including the variables

inst: Institution code

time: Survival time in

status: censoring status 1=censored, 2=dead

age: Age in years

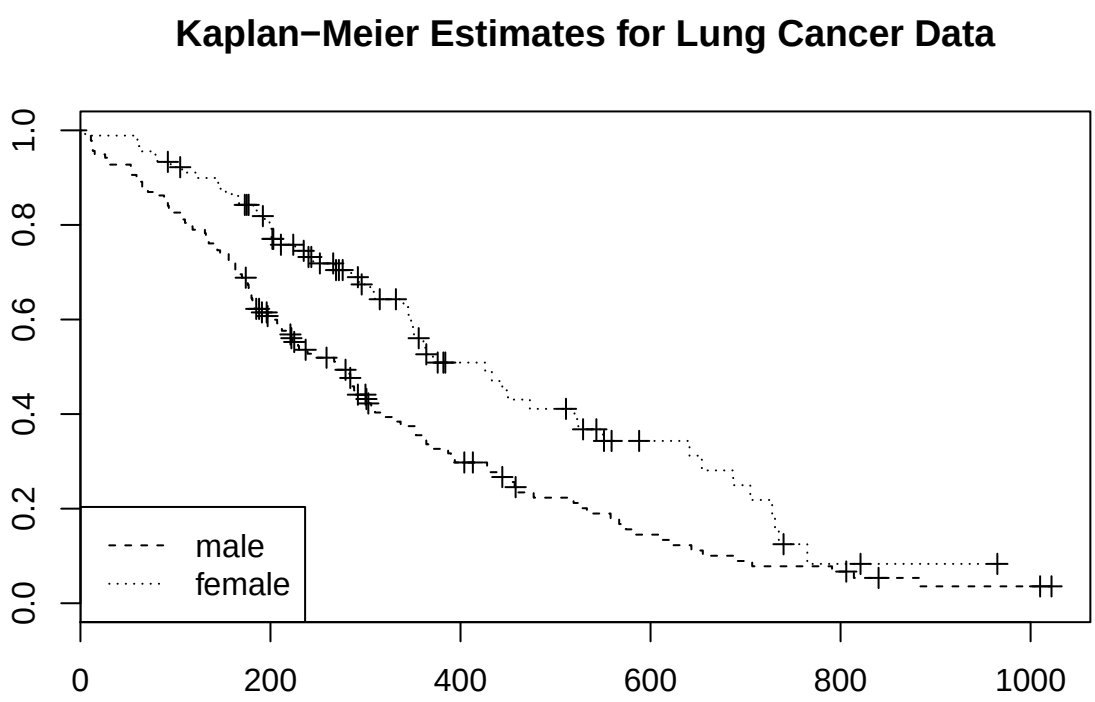
sex: Male=1 Female=2, etc.

```
library(survival)
dat = lung
```

1. Estimate and plot the survival curves for time BY sex using the following methods:

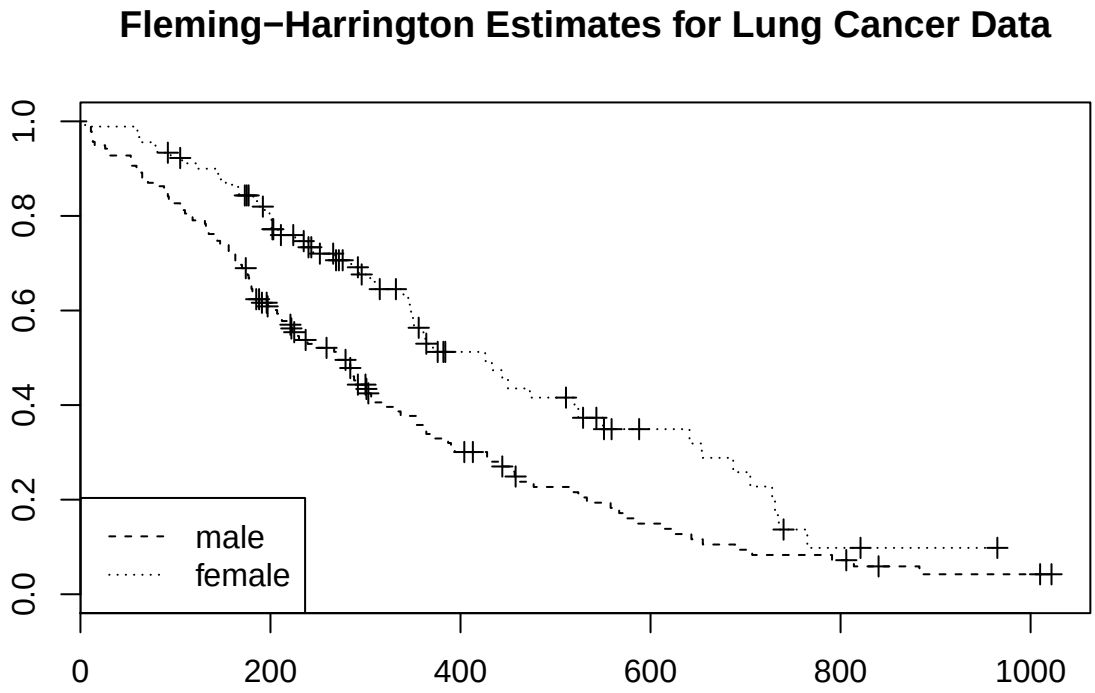
Kaplan-Meier

```
fit1 <- survfit(Surv(time, status) ~ sex, data=dat)
plot(fit1, lty=2:3, main = "Kaplan-Meier Estimates for Lung Cancer Data")
legend("bottomleft", c("male", "female"), lty = c(2,3))
```



Fleming-Harrington

```
fit2 <- survfit(Surv(time, status) ~ sex, type = "fh2", data=dat)
plot(fit2, lty=2:3,  main = "Fleming-Harrington Estimates for Lung Cancer Data")
legend("bottomleft", c("male", "female"), lty = c(2,3))
```



2. For each case in 1, estimate the median survival time, using the estimated survival curves.

```
print(fit1)
```

```
## Call: survfit(formula = Surv(time, status) ~ sex, data = dat)
##
##       records n.max n.start events median 0.95LCL 0.95UCL
## sex=1     138   138     138    112    270     212     310
## sex=2      90    90      90     53    426     348     550
```

```
print(fit2)
```

```
## Call: survfit(formula = Surv(time, status) ~ sex, data = dat, type = "fh2")
##
##       records n.max n.start events median 0.95LCL 0.95UCL
## sex=1     138   138     138    112    270     218     320
## sex=2      90    90      90     53    426     348     641
```

We can see that the the median survival time for male and female using `Kplan-Meier` Estimates are 270 and 426;

The median survival time for male and female using `Fleming-Harrington` Estimates are also 270 and 426;