

homework4

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```
ckm_nodes <- read_csv("~/github/Rcourse_1/data/ckm_nodes.csv")
ckm_network <- read.table("~/github/Rcourse_1/data/ckm_network.dat")
```

1.

```
omit <- which(is.na(ckm_nodes$adoption_date))
ckm_nodes <- ckm_nodes[-omit,]
ckm_network <- ckm_network[-omit,-omit]
```

2.

```
#-----
temp <- function(x){return(x==1:17)}
temp2<-function(Fun,V,data = ckm_nodes$adoption_date){
  col1<-apply(array(data),1,Fun)
  col1<-data.frame(col1)
  col1<-col1 %>% gather()
  col1 <- cbind(1:17,col1)
  colnames(col1)<-c('date','doctor',V)
  return(col1)
}
#-----col1
ckm<-temp2(temp,'begin_prescribing')
#-----col2
temp <- function(x){return(x<=1:17)}
ckm<-full_join(ckm,temp2(temp,'adopted_before'),by = c('date','doctor'))# not strictly
#-----col3
```

```

temp3 <- function(x){
  if(is.na(x)){
    return(vector(length = 17))
  }else{
    return(x<1:17)
  }
}

temp4<-function(x){
  re<-apply(array(ckm_nodes$adoption_date[as.logical(ckm_network[x,])]),1,temp3)
  if(length(re)!=0){
    return(rowSums(re))
  }else{
    return(as.numeric(vector(length=17)))
  }
}

ckm<-full_join(ckm,temp2(temp4,'ncontact_strict_before',1:125),by = c('date','doctor'))
#-----col4

temp3 <- function(x){
  if(is.na(x)){
    return(vector(length = 17))
  }else{
    return(x<=1:17)
  }
}

ckm<-full_join(ckm,temp2(temp4,'ncontact_in_or_earlier',1:125),by = c('date','doctor'))
#-----
head(ckm)

```

```

##   date doctor begin_prescribing adopted_before ncontact_strict_before
## 1    1    X1              TRUE              TRUE                    0
## 2    2    X1             FALSE              TRUE                    1
## 3    3    X1             FALSE              TRUE                    1
## 4    4    X1             FALSE              TRUE                    2
## 5    5    X1             FALSE              TRUE                    3

```

```
## 6      6      X1          FALSE          TRUE          3
##  ncontact_in_or_earlier
## 1              1
## 2              1
## 3              2
## 4              3
## 5              3
## 6              3
```

如向量 `data.frame ckm` 所示，四列数据和两列标签一共组成六列数据，而 125 为医生和 17 个月使得数据共有 $125 \times 17 = 2125$ 行。