Cherry Blossom Ten Mile Run & Walk

Examining the Impact of Age on Physical Performance

The Raw Data

data is pre-processed from the web in \02_data.r

```
load_results <- function(class, year) {

  folder <- ifelse(class == "men", "men_txt", "women_txt")
  file <- file.path(data.dir, folder, paste(year, ".txt", sep = ""))

  return(readLines(file))
}
```

Race Results Preprocessing

```
els <- load_results("men", 2006)

eqIndex <- grep("^===", els)
eqIndex
```

```
[1] 8
```

```
spacerRow <- els[eqIndex]
headerRow <- els[eqIndex - 1]

body <- els[ -(1:eqIndex) ]

headerRow <- tolower(headerRow)

timeStart <- regexpr("net", headerRow)
time <- substr(body, start = timeStart, stop = timeStart + 1)

ageStart <- regexpr("ag", headerRow)
```

```r
age <- substr(body, start = ageStart, stop = ageStart + 1)
head(age)
```

```
[1] "27" "29" "23" "28" "28" "29"
```

```r
summary(as.numeric(age))
```

```
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.    NA's
   2.00    3.00   34.00   28.53   46.00   82.00       2
```

```r
blankLocs <- gregexpr(" ", spacerRow)
blankLocs
```

```
[[1]]
 [1]  6 15 22 45 48 64 72 80 81 87 89
attr(,"match.length")
 [1] 1 1 1 1 1 1 1 1 1 1 1 1
attr(,"index.type")
[1] "chars"
attr(,"useBytes")
[1] TRUE
```

```r
searchLocs <- c(0, blankLocs[[1]])

Values <- mapply(substr, list(body),
                 start = searchLocs[ -length(searchLocs)] + 1,
                 stop = searchLocs[ -1 ] - 1)

findColLocs <- function(spacerRow) {
    spaceLocs <- gregexpr(" ", spacerRow)[[1]]
    rowLength <- nchar(spacerRow)

    if(substring(spacerRow, rowLength, rowLength + 1) != " ")
        return(c(0, spaceLocs, rowLength + 1))
    else
        return(c(0, spaceLocs))
}

findColLocs(spacerRow)
```

```
 [1]  0  6 15 22 45 48 64 72 80 81 87 89
```

```r
name <- "home"
colnames <- c("name", "home", "ag", "gun", "net", "time")

colIndex <- which(colnames == name)
```

```r
startPos <- regexpr(name, headerRow)[[1]]

#
# can we modify select cols to short circuit on matching w/o spaces?
######


selectCols =
   function(colNames, headerRow, searchLocs)
   {
      sapply(colNames,
             function(name, headerRow, searchLocs)
            {
               startPos <- regexpr(name, headerRow)[[1]]

               if(startPos == -1)
                  return( c(NA, NA) )

               index <- sum(startPos >= searchLocs)

               c(searchLocs[index] + 1, searchLocs[index + 1])
            },
         headerRow = headerRow, searchLocs = searchLocs)
   }

searchLocs <- findColLocs(spacerRow)
loc <- selectCols("home", headerRow, searchLocs)
vars <- mapply(substr, list(body), start = loc[1,], stop = loc[2, ])

summary(as.numeric(vars))
```

```
Warning in summary(as.numeric(vars)): NAs introduced by coercion

   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.    NA's
     NA      NA      NA     NaN      NA      NA    5237
```

```r
shortColNames <- c("name", "home", "ag", "gun", "net", "time")

locCols <- selectCols(shortColNames, headerRow, searchLocs)
Values <- mapply(substr, list(body), start = locCols[1, ],
                 stop = locCols[2, ])

class(Values)
```

```
[1] "matrix"
```

```r
colnames(Values) = shortColNames

head(Values)
```

```
       name                    home                ag     gun          net
[1,] "Gilbert Okari       " "Kenya             " "27 " "   47:25#" "  47:24 "
[2,] "Samuel Ndereba      " "Kenya             " "29 " "   47:35#" "  47:34 "
[3,] "Rueben Kibet Chebii " "Kenya             " "23 " "   47:39#" "  47:38 "
[4,] "Kazuo Ietani        " "Japan             " "28 " "   47:39#" "  47:39 "
[5,] "Wilson Komen        " "Kenya             " "28 " "   47:58#" "  47:58 "
[6,] "Matt Downin         " "United States     " "29 " "   48:43#" "  48:42 "
       time
[1,] NA
[2,] NA
[3,] NA
[4,] NA
[5,] NA
[6,] NA
```

```r
tail(Values)[, 1:3]
```

```
          name                 home             ag
[5232,] " Ishong Nkong    " " Herndon        " " 29"
[5233,] "Ted Whichard     " "Roanoke         " "53 "
[5234,] "Doug Whichard    " "Blacksburg      " "60 "
[5235,] "Daniel Grasso    " "Lanham          " "50 "
[5236,] "deline           " ""               ""
[5237,] "p guideline"      ""               ""
```

```r
extractVariables =
   function(file, varNames = c("name", "home", "ag", "gun", "net", "time"))
   {
      # Find the index of the row with =s
      eqIndex <- grep("^===", file)
      spacerRow <- file[eqIndex]
      headerRow <- tolower(file[ eqIndex - 1 ])
      body <- file[ -(1 : eqIndex) ]

      blank <- grep("^[[:blank:]]*$", body)
      footnote <- grep("^[^\\s]*[\\*]*[#]", body)
      ignore <- union(blank, footnote)

      if(length(ignore))
          body <- body[-ignore]

      # Obtain the starting and ending positions of variables
```

```r
      searchLocs <- findColLocs(spacerRow)
      locCols <- selectCols(varNames, headerRow, searchLocs)

      Values <- mapply(substr, list(body), start = locCols[1, ],
                      stop = locCols[2, ])
      colnames(Values) <- varNames

      invisible(Values)
   }

load_data <- function(class) {
   folder <- ifelse(class == "men", "men_txt", "women_txt")
   filenames <- file.path(data.dir, paste(folder, "/", 1999:2012, ".txt", sep = ""))
   files <- lapply(filenames, readLines)
   names(files) <- 1999:2012

   mat <- lapply(files, extractVariables)

   return(mat)
}
```

Data Cleaning and Reformatting Variables

```r
menResMat <- load_data("men")

length(menResMat)
```

```
[1] 14
```

```r
sapply(menResMat, nrow)
```

```
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012
3190 3004 3546 3723 3939 4156 4325 5230 5264 5903 6641 6899 7010 7193
```

```r
womenResMat <- load_data("women")

length(womenResMat)
```

```
[1] 14
```

```r
sapply(womenResMat, nrow)
```

```
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012
3190 3004 3546 3723 3939 4156 4325 5230 5264 5903 6641 6899 7010 7193
```

Age Validation

```r
age <- as.numeric(menResMat[['2012']][, 'ag'])

tail(age)
```

```
[1] 41 39 56 35 NA 48
```

```r
age <- sapply(menResMat,
             function(x) as.numeric(x[, "ag"]))

age_values <- plyr::ldply(age, data.frame)
colnames(age_values) <- c("Year", "Age")

ggplot(age_values, aes(Age)) +
   geom_histogram(aes(fill = ..count..), bins = 30)
```

```
Warning: Removed 29 rows containing non-finite values (stat_bin).
```
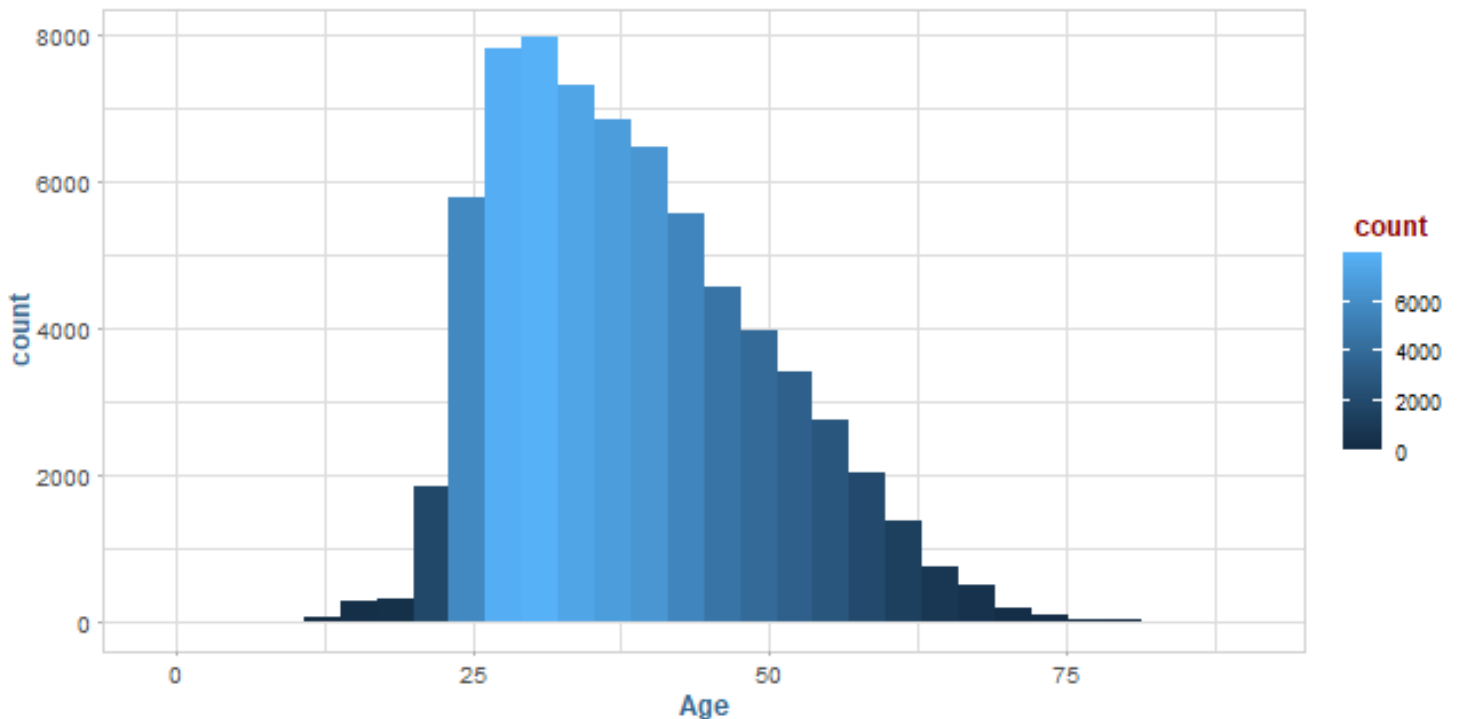


```r
ggplot(age_values, aes(Year, Age)) +
   geom_boxplot(aes(fill = Year)) +
   labs(title = "Age By Race Year")
```

```
Warning: Removed 29 rows containing non-finite values (stat_boxplot).
```

Age By Race Year
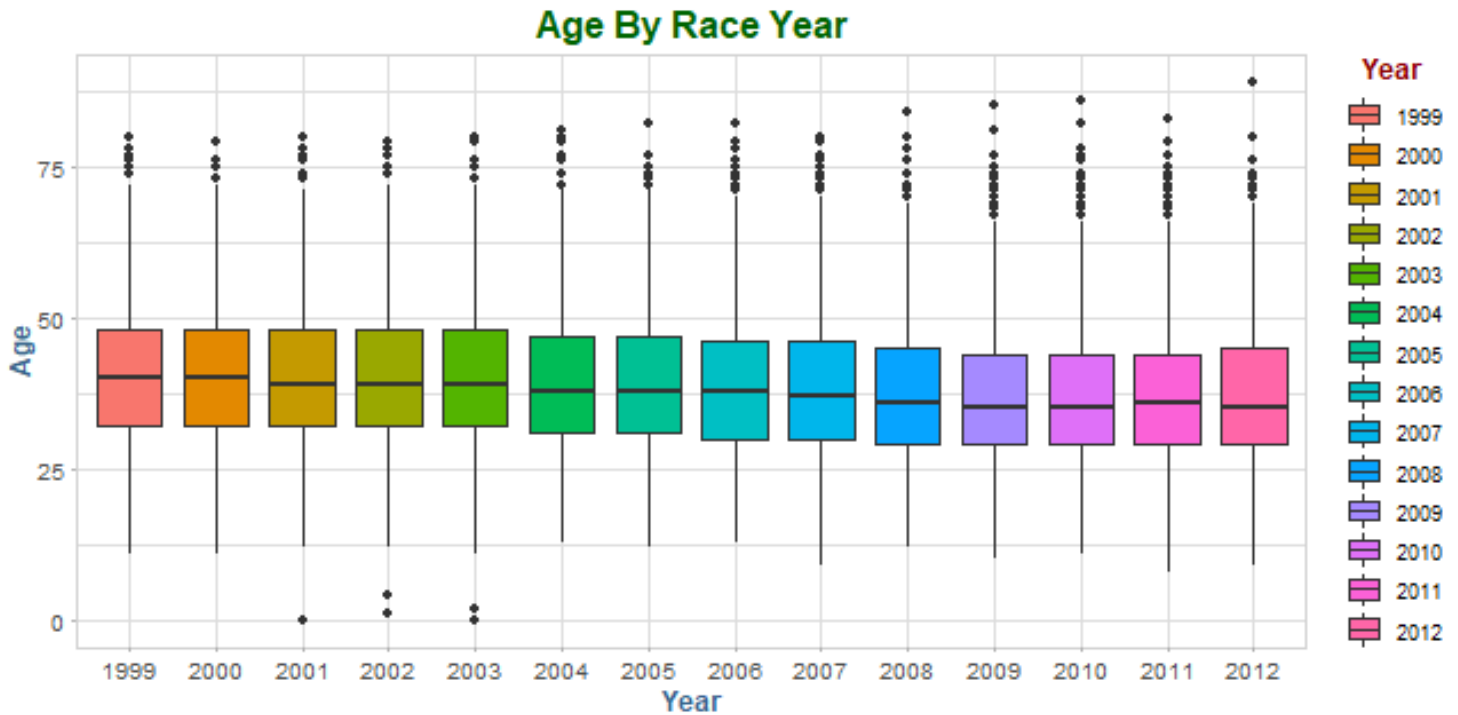

```r
sapply(age, function(x) sum(is.na(x)))
```

```
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012
   1    0    0    2    1    0   11    1    4    1    1    5    1    1
```

```r
file2001 <- load_results("men", 2001)
age2001 <- as.numeric(extractVariables(file2001)[, "ag"])

badAgeIndex <- which(is.na(age2001)) + 5

file2001[badAgeIndex]
```

```
character(0)
```

```r
badAgeIndex
```

```
numeric(0)
```

```r
blanks <- grep("^[[:blank:]]*$", file2001)
blanks
```

```
 [1]    1    2    3 1756 1757 1758 1759 1760 1761 1762 1763 1814 1815 1816 1817
[16] 1818 1819 1820 1821 1872 1873 1874 1875 1876 1877 1878 1879 1930 1931 1932
[31] 1933 1934 1935 1936 1937 2538 2539 2540 2541 2542 2543 2544 2545 2546 2897
[46] 2898 2899 2900 2901 2902 2903 2904 2955 2956 2957 3008 3009 3010 3011 3012
[61] 3013 3014 3015
```

```r
which(age2001 < 5)
```

```
[1] 1362 2988 3037
```

```r
file2001[which(age2001 < 5)]
```

```
[1] " 1357    513 Darin SLADE          34 Falls Church VA    1:21:26 1:22:23"
[2] " 2931   4848 Dave LYTLE           50 Alexandria VA      1:35:27 1:40:10"
[3] " 2972   1648 James COLBY          58 Fairfax VA         1:39:45 1:40:53"
```

```r
file <- load_results("men", 2001)
data <- extractVariables(file)
age <- as.numeric(data[, "ag"])

sum(age < 5)
```

```
[1] 3
```

```r
which(age == 0)
```

```
[1] 1362 2988 3037
```

```r
data[which(age == 0)]
```

```
[1] "Steve PINKOS          " "Jeff LAKE             " "Greg RHODE            "
```

Time Validation

```r
file2002 <- load_results("men", 2012)

charTime <- menResMat[["2012"]][, "time"]

head(charTime)
```

```
[1] "  45:15 " "  46:28 " "  47:33 " "  47:34 " "  47:40 " "  47:50 "
```

```r
tail(charTime)
```

```
[1] "2:26:47 " "2:27:11 " "2:27:20 " "2:27:30 " "2:28:58 " "2:30:59 "
```

```r
timePieces <- strsplit(charTime, ":")

timePieces[[1]]
```

```
[1] "  45" "15 "
```

```r
tail(timePieces, 1)
```

```
[[1]]
[1] "2"    "30"   "59 "
```

```r
timePieces <- sapply(timePieces, as.numeric)

runTime <- sapply(timePieces,
                function(x) {
                    if(length(x) == 2) x[1] + x[2]/60
                    else 60 * x[1] + x[2] + x[3]/60
                })

summary(runTime)
```

```
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
  45.25   77.57   87.47   88.43   97.78  150.98
```

```r
convertTime <- function( charTime ) {

  timePieces <- strsplit(charTime, ":")

  timePieces <- sapply(timePieces, as.numeric)

  runTime <- sapply(timePieces,
                function(x) {
                    if(length(x) == 2) x[1] + x[2]/60
                    else 60 * x[1] + x[2] + x[3]/60
                })

}
```

Aggregate cleaning into

```r
createDF =
   function(Res, year, sex) {
     useTime <- if(!is.na(Res[1, 'net']) )
                  Res[, 'net']
                else if( !is.na(Res[1, 'gun']) )
                  Res[ , 'gun']
                else
                  Res[, 'time']

     useTime <- gsub("[#\\*[:blank:]]", "", useTime)

     Res <- Res[ useTime != "", ]

     runTime <- convertTime(useTime[ useTime != "" ])
```

```r
    N <- nrow(Res)

    Results <- data.frame( year = rep(year, N),
                           sex = rep(sex, N),
                           name = Res[, 'name'],
                           home = Res[, 'home'],
                           age = as.numeric(Res[, 'ag']),
                           runTime = runTime,
                           stringsAsFactors = F)

    invisible(Results)
  }

years <- 1999:2012
menDF <- mapply(createDF, menResMat, year = years,
            sex = rep("M", 14), SIMPLIFY = F)

warnings()[ c(1:2, 49:50)]
```

```
NULL
```

```r
sapply(menDF, function(x) sum(is.na(x$runTime)))
```

```
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012
   0    0    0    0    0    0    0    0    0    0    0    0    0    0
```

```r
file2006 <- load_results("men", 2006)
parsed2006 <- extractVariables(file2006)
time2006 <- parsed2006[, "net"]

womenDF <- mapply(createDF, womenResMat, year = years,
            sex = rep("F", 14), SIMPLIFY = F)

sapply(womenDF, function(x) sum(is.na(x$runTime)))
```

```
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012
   0    0    0    0    0    0    0    0    0    0    0    0    0    0
```

Consolidate Results

```r
cbMen <- do.call(rbind, menDF)
save(cbMen, file = file.path(data.dir, "cbMen.rda"))

cbWomen <- do.call(rbind, womenDF)
```

```
save(cbWomen, file = file.path(data.dir, "cbWomen.rda"))
```

Exploratory Data Analysis

```
ggplot(cbMen, aes(age, runTime)) +
    geom_point(aes(col = age)) +
    labs(main = "Run Times by Age", xlab = "Age (years)", xlab = "Run Time (minutes")
```

```
Warning: Removed 23 rows containing missing values (geom_point).
```



```
display.brewer.all()
```

Cherry Blossom Race Times


```r
Purple8 <- brewer.pal(9, "Purples")[8]

Purple8A <- paste(Purple8, "14", sep = "")

ggplot(cbMen, aes(age, runTime)) +
    geom_jitter(col = Purple8A) +
    geom_smooth() +
    xlim(10, 75) +
    ylim(45, 150)
```

`geom_smooth()` using method = 'gam' and formula 'y ~ s(x, bs = "cs")'

Warning: Removed 130 rows containing non-finite values (stat_smooth).

Warning: Removed 142 rows containing missing values (geom_point).
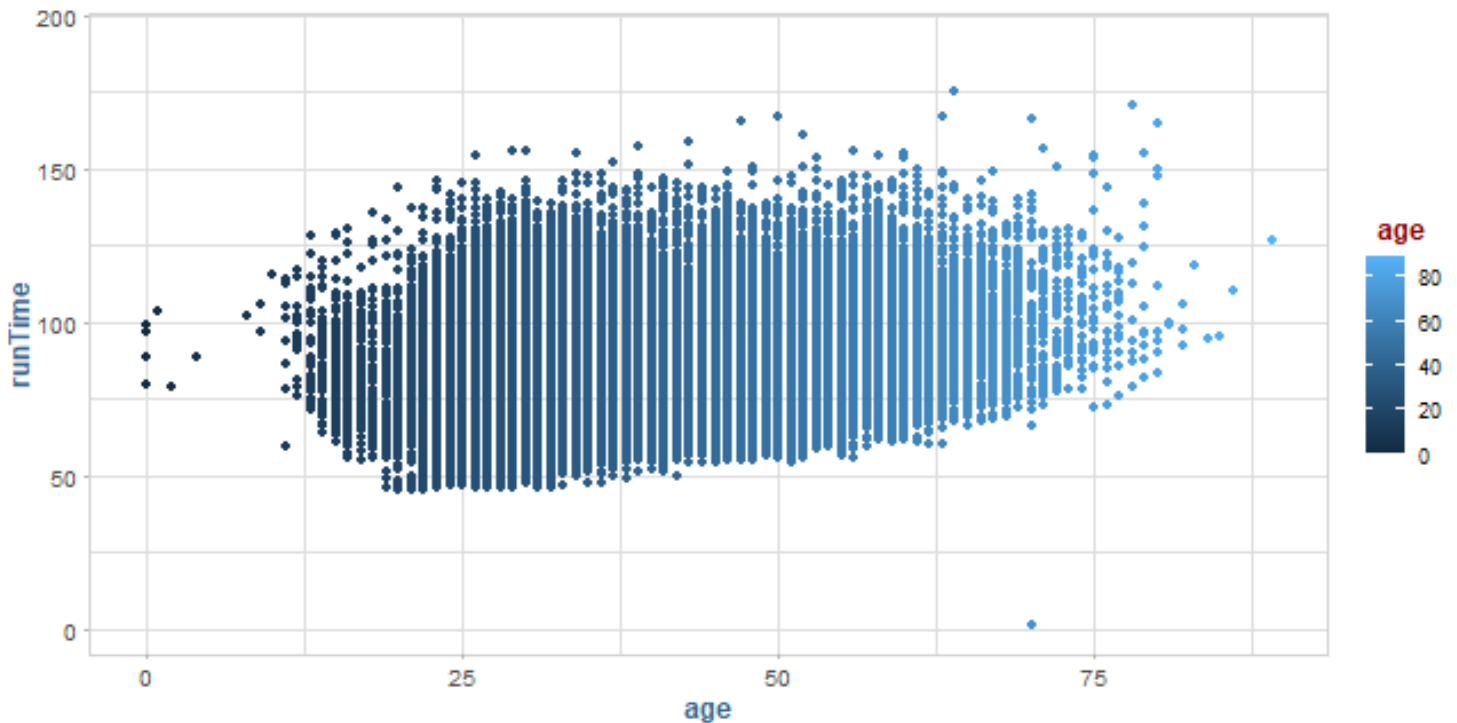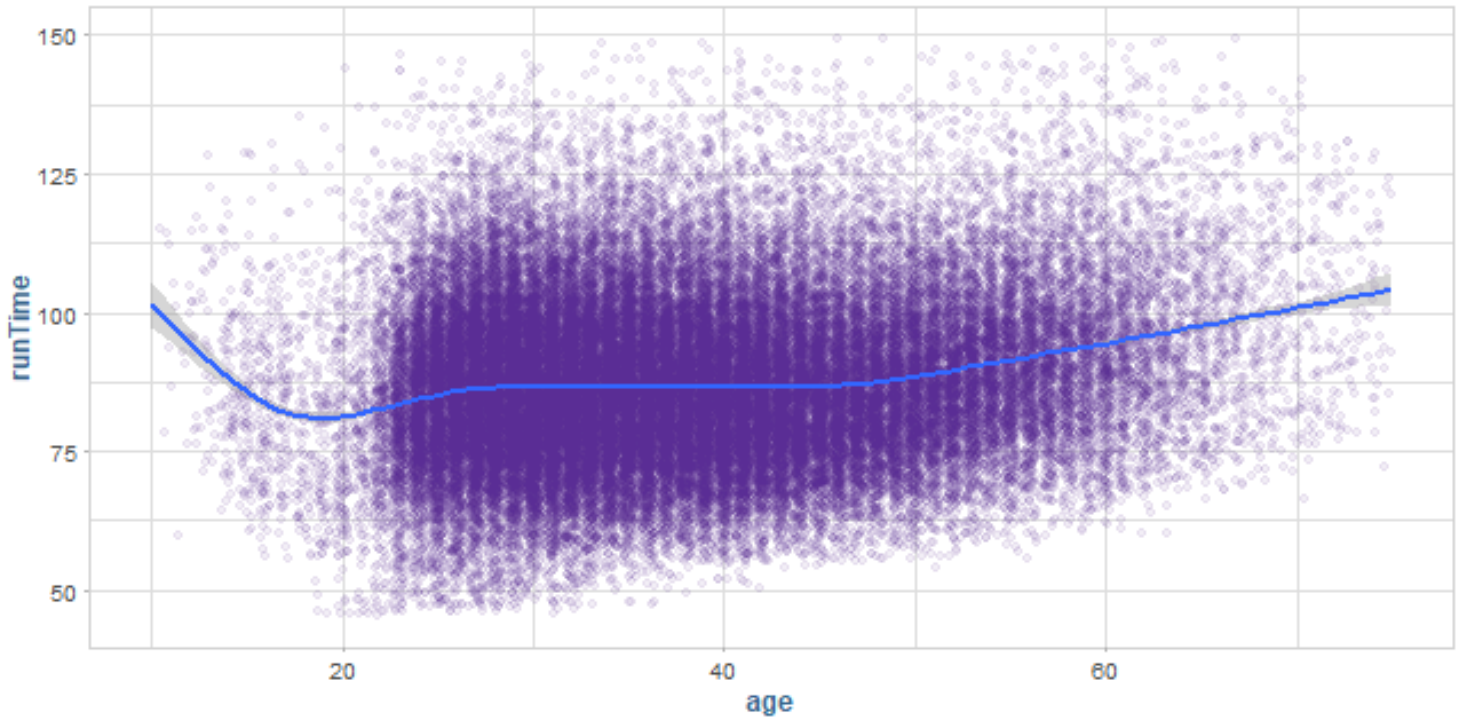
```r
smoothScatter(y = cbMen$runTime, x = cbMen$age,
              ylim = c(40, 165), xlim = c(15, 85),
              xlab = "Age (years)", ylab = "Run Time (minutes)")
```
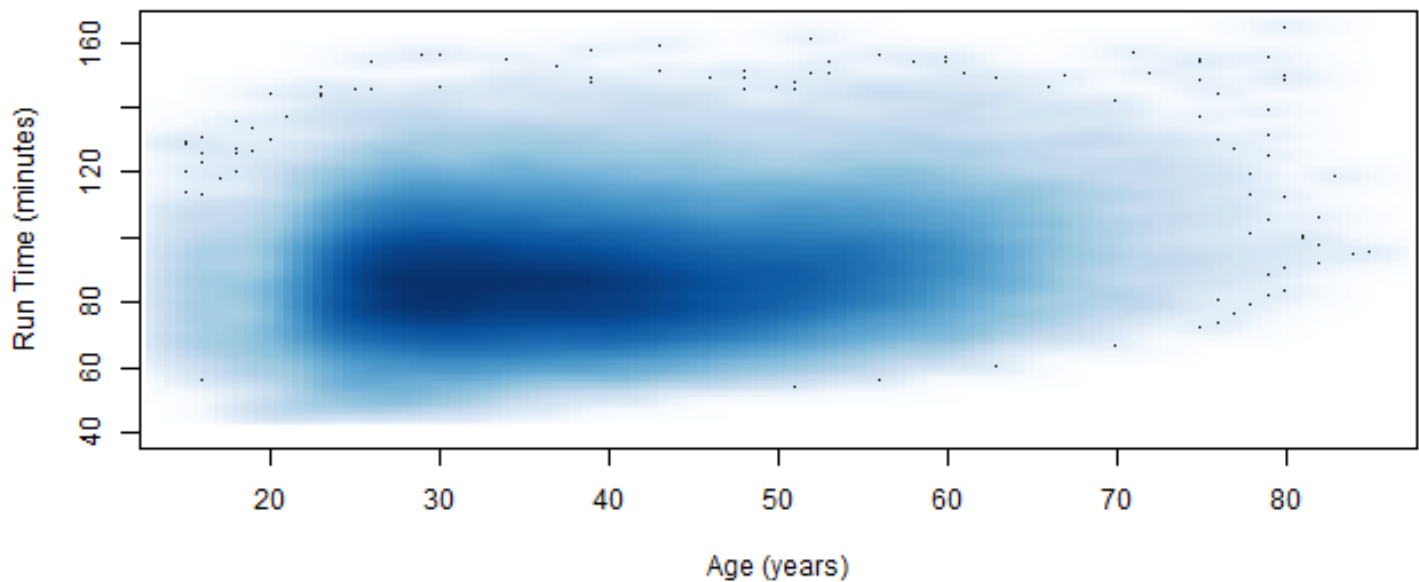
```r
cbMenSub <- cbMen[cbMen$runTime > 30 &
                    !is.na(cbMen$age) & cbMen$age > 15,]

ageCat <- cut(cbMenSub$age, breaks = c(seq(15, 75, 10), 90))

ggplot(data.table(age = ageCat, time = cbMenSub$runTime), aes(ageCat, time)) +
    geom_boxplot(aes(fill = age)) +
    labs("Run Times by Age Category")
```
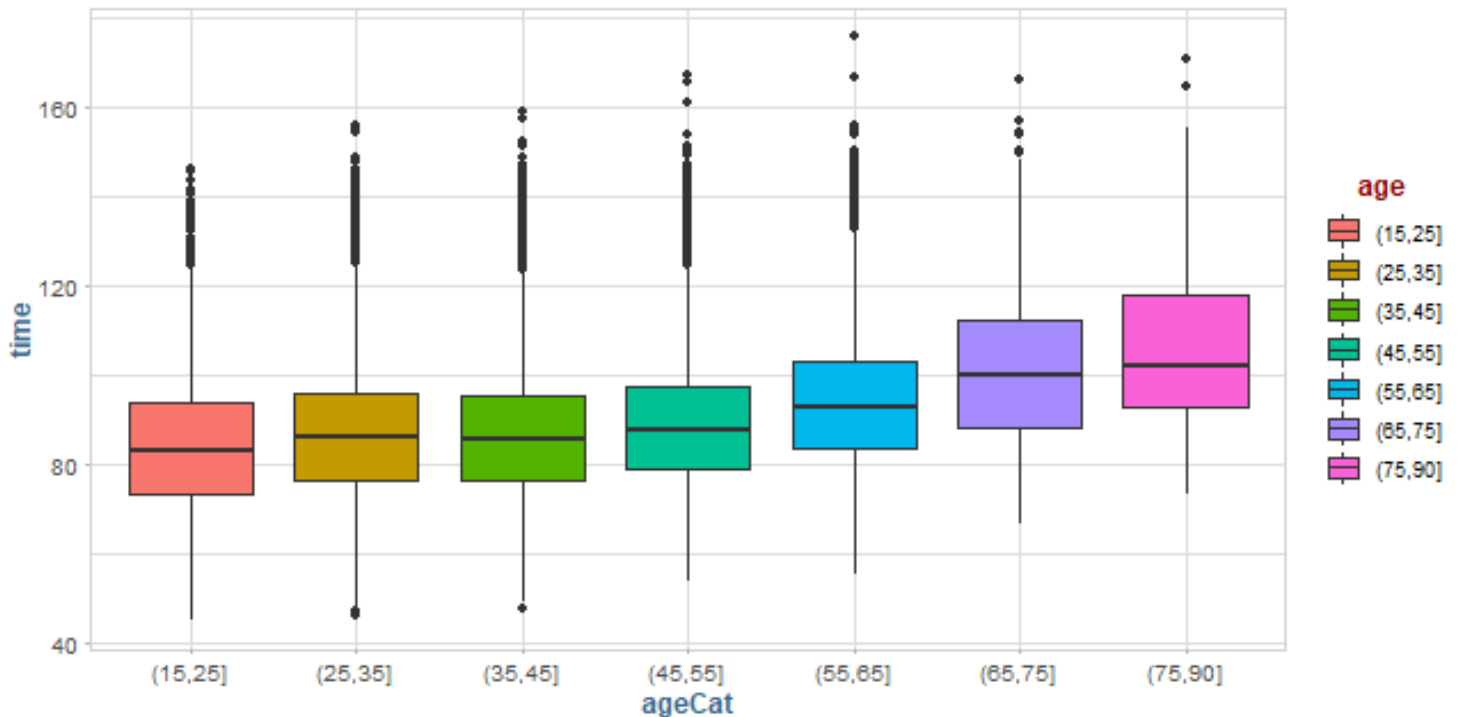


```r
lm_age <- lm(runTime ~ age, data = cbMenSub)

summary(lm_age)
```

```
Call:
lm(formula = runTime ~ age, data = cbMenSub)

Residuals:
    Min      1Q  Median      3Q     Max
-39.821 -10.234  -0.972   9.083  82.482

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept) 78.93366    0.20738  380.62   <2e-16 ***
age          0.22163    0.00516   42.95   <2e-16 ***
```

```
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 14.73 on 69733 degrees of freedom
Multiple R-squared:  0.02577,   Adjusted R-squared:  0.02576
F-statistic:  1845 on 1 and 69733 DF,  p-value: < 2.2e-16
```

```r
smoothScatter(x = cbMenSub$age, y = lm_age$residuals,
              xlab = "Age (years)", ylab = "Residuals")
abline(h = 0, col = "purple", lwd = 3)

resid.lo <- loess(resids ~ age,
                  data = data.frame(resids = residuals(lm_age),
                                    age = cbMenSub$age))

age20to80 <- 20:80

resid.lo.pr <- predict(resid.lo, newdata = data.frame(age = age20to80))

lines(x = age20to80, y = resid.lo.pr,
      col = "green", lwd = 3, lty = 2)
```
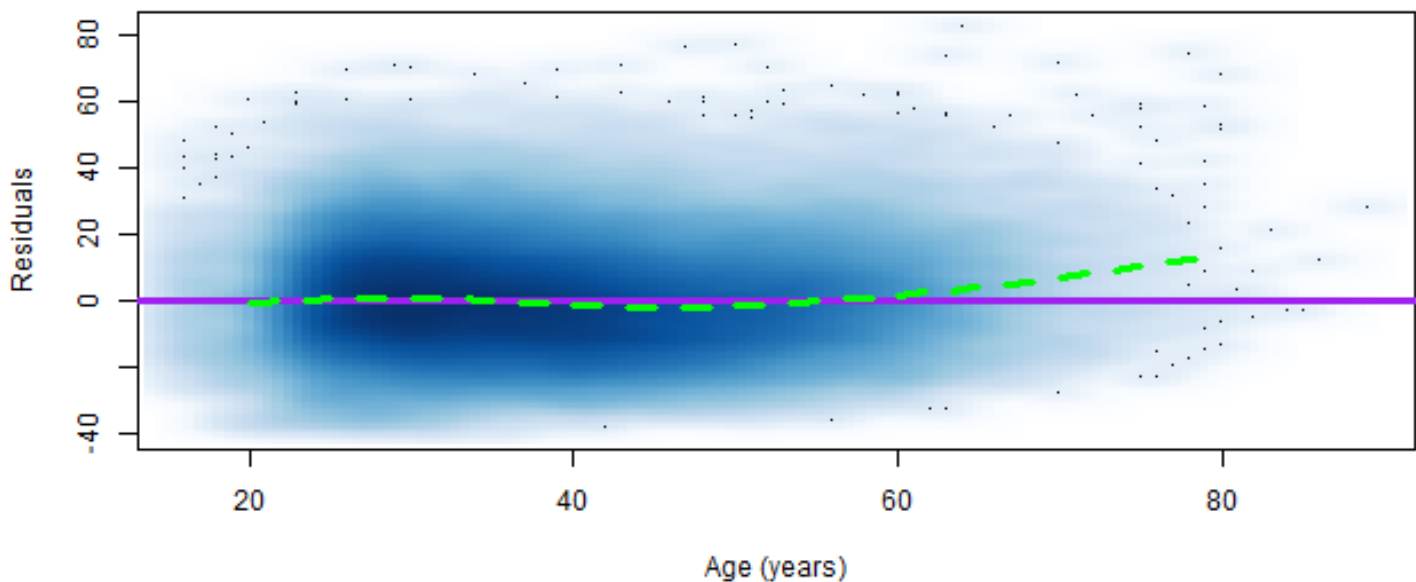


```r
menRes.lo <- loess(runTime ~ age, cbMenSub)

summary(menRes.lo)
```

```
Call:
loess(formula = runTime ~ age, data = cbMenSub)

Number of Observations: 69735
Equivalent Number of Parameters: 5.11
Residual Standard Error: 14.66
Trace of smoother matrix: 5.58  (exact)

Control settings:
  span     :  0.75
  degree   :  2
  family   :  gaussian
  surface  :  interpolate     cell = 0.2
  normalize:  TRUE
 parametric:  FALSE
drop.square:  FALSE
```

```r
menRes.lo.pr <- predict(menRes.lo, data.frame(age = age20to80))
```

```r
over50 <- pmax(0, cbMenSub$age - 50)
```

```r
lmOver50 <- lm(runTime ~ age + over50, data = cbMenSub)
```

```r
summary(lmOver50)
```

```
Call:
lm(formula = runTime ~ age + over50, data = cbMenSub)

Residuals:
    Min      1Q  Median      3Q     Max
-40.118 -10.115  -0.901   9.032  79.083

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 83.002850   0.264631  313.65   <2e-16 ***
age          0.099949   0.007134   14.01   <2e-16 ***
over50       0.573213   0.023314   24.59   <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 14.67 on 69732 degrees of freedom
Multiple R-squared:  0.03414,   Adjusted R-squared:  0.03412
F-statistic:  1233 on 2 and 69732 DF,  p-value: < 2.2e-16
```

```r
decades <- seq(30, 60, by = 10)
overAge <- lapply(decades,
                  function(x) pmax(0, (cbMenSub$age - x)))
names(overAge) <- paste("over", decades, sep = "")
overAge <- as.data.frame(overAge)

tail(overAge)
```

```
      over30 over40 over50 over60
69730     36     26     16      6
69731     11      1      0      0
69732      9      0      0      0
69733     26     16      6      0
69734      5      0      0      0
69735     18      8      0      0
```

```r
lmPiecewise <- lm(runTime ~.,
                  data = cbind(cbMenSub[, c("runTime", "age")],
                               overAge))

summary(lmPiecewise)
```

```
Call:
lm(formula = runTime ~ ., data = cbind(cbMenSub[, c("runTime",
    "age")], overAge))

Residuals:
    Min      1Q  Median      3Q     Max
-40.968 -10.131  -0.905   9.001  78.962

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) 74.784394   0.914733  81.755  < 2e-16 ***
age          0.407548   0.033184  12.282  < 2e-16 ***
over30      -0.466568   0.047720  -9.777  < 2e-16 ***
over40       0.229115   0.040568   5.648 1.63e-08 ***
over50       0.492733   0.052792   9.333  < 2e-16 ***
over60      -0.002991   0.077449  -0.039    0.969
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 14.66 on 69729 degrees of freedom
Multiple R-squared:  0.03547,   Adjusted R-squared:  0.03541
F-statistic: 512.9 on 5 and 69729 DF,  p-value: < 2.2e-16
```

```r
overAge20 <- lapply(decades, function(x) pmax(0, (age20to80 - x)))
names(overAge20) <- paste("over", decades, sep = "")
overAgeDF <- cbind(age = data.frame(age = age20to80), overAge20)

tail(overAgeDF)
```

```
   age over30 over40 over50 over60
56  75     45     35     25     15
57  76     46     36     26     16
58  77     47     37     27     17
59  78     48     38     28     18
60  79     49     39     29     19
61  80     50     40     30     20
```

```r
predPiecewise <- predict(lmPiecewise, overAgeDF)

plot(predPiecewise ~ age20to80,
     type = "l", col = "purple", lwd = 3,
     xlab = "Age (years)", ylab = "Run Time Prediction")

lines(x = age20to80, y = menRes.lo.pr,
      col = "green", lty = 2, lwd = 3)

legend("topleft", col = c("purple", "green"),
       lty = c(1, 2), lwd = 3,
       legend = c("Piecewise Linear", "Loess Curve"), bty = "n")
```
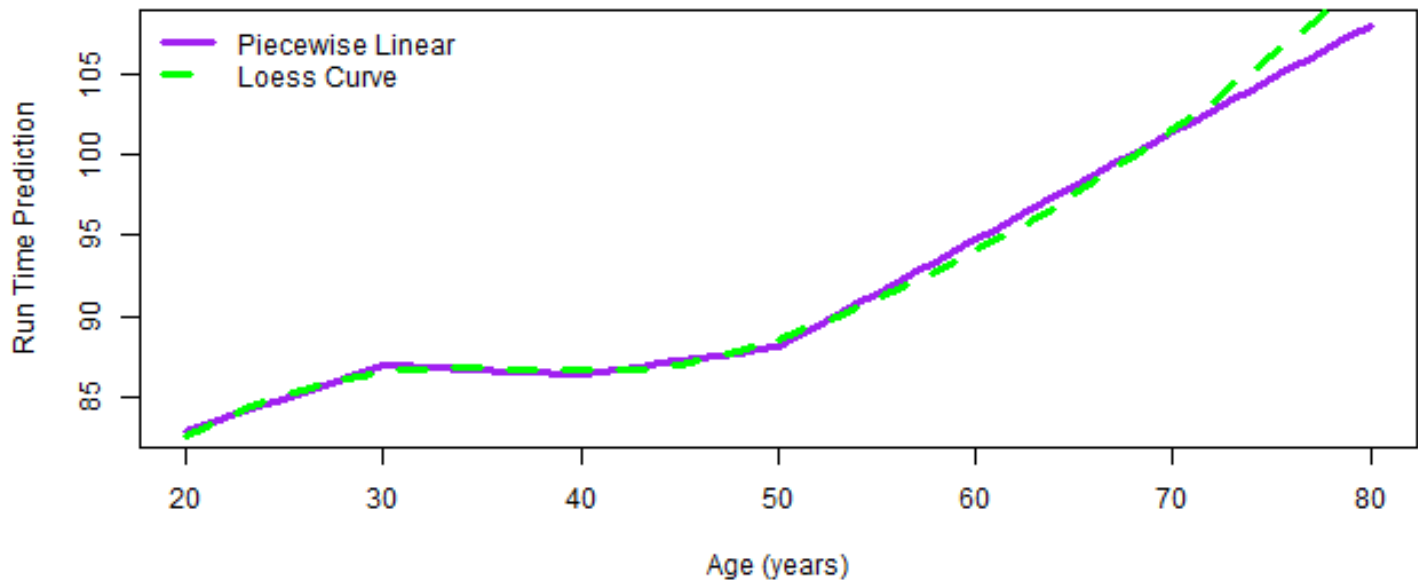
Cross-Sectional Data and Covariates

```r
age1999 <- cbMenSub[ cbMenSub$year == 1999, "age"]
age2012 <- cbMenSub[ cbMenSub$year == 2012, "age"]
```

```r
summary(age1999)
```

```
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
  16.00   32.00   40.00   40.43   48.00   80.00
```

```r
summary(age2012)
```

```
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
  16.00   29.00   36.00   37.84   45.00   89.00
```

```r
plot(density(age1999, na.rm = T),
     ylim = c(0, 0.05), col = "purple",
     lwd = 3, xlab = "Age (years)", main = "")
lines(density(age2012, na.rm = T),
      lwd = 3, lty = 2, col = "green")
legend("topleft", col = c("purple", "green"), lty = 1:2, lwd = 3,
       legend = c("1999", "2012", bty = "n"))
```
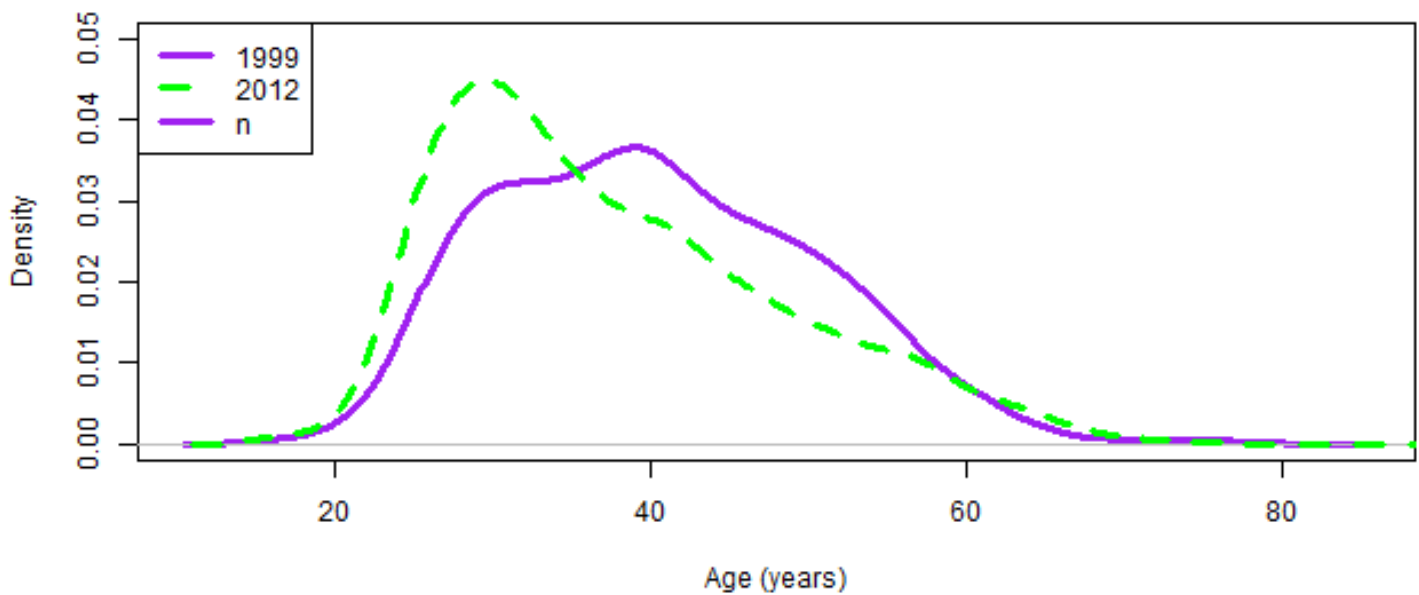
```r
by_year <- data.table(cbMenSub)[, .(age, mean = mean(age)), by = list(year)]

ggplot(by_year[year %in% c("1999", "2012")], aes(age, group = year)) +
    geom_density(aes(fill = year), alpha = .6) +
    geom_vline(aes(xintercept = mean, col = year, group = year)) +
    labs(title = "Runners by Year")
```
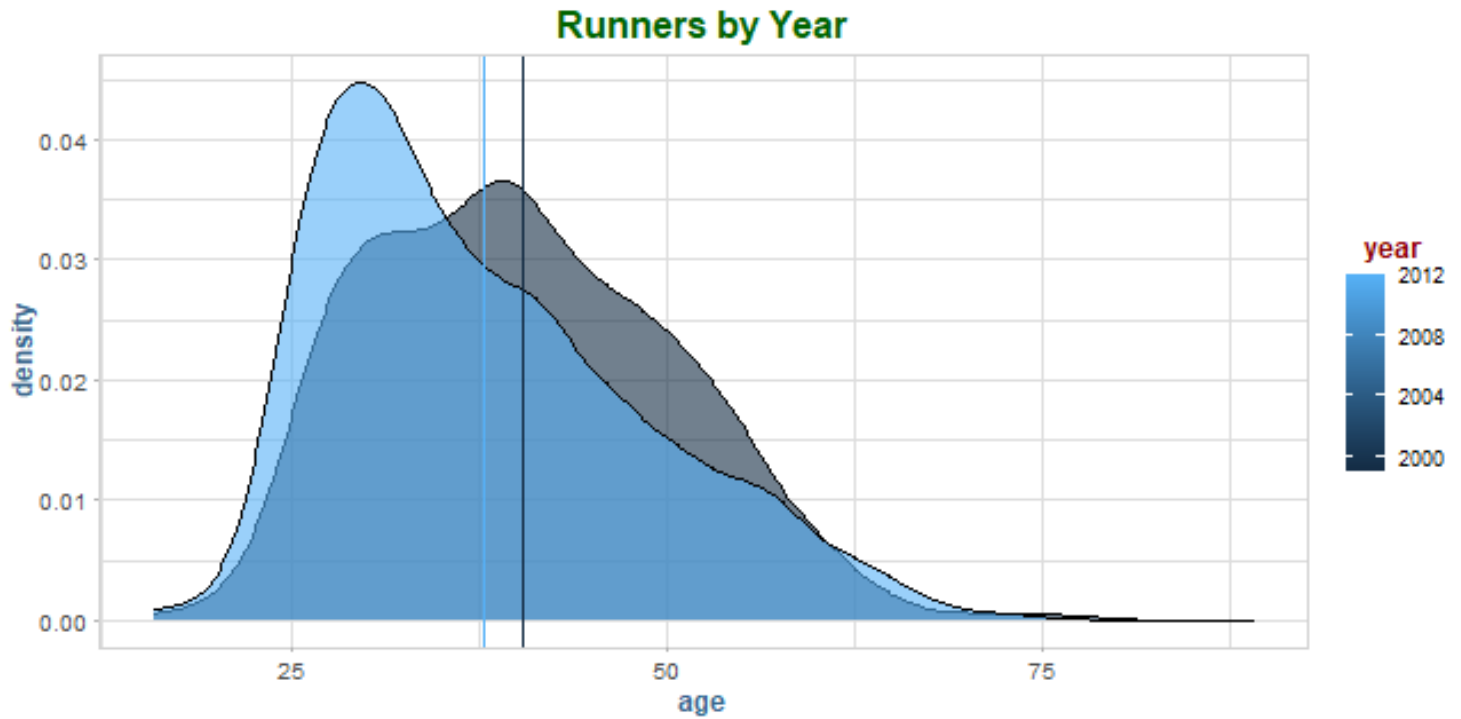
```
ggplot(by_year, aes(year, age)) +
    geom_point(aes(col = age)) +
    geom_quantile() +
    labs(title = "Runners Age Over Time")
```

Smoothing formula not specified. Using: y ~ x
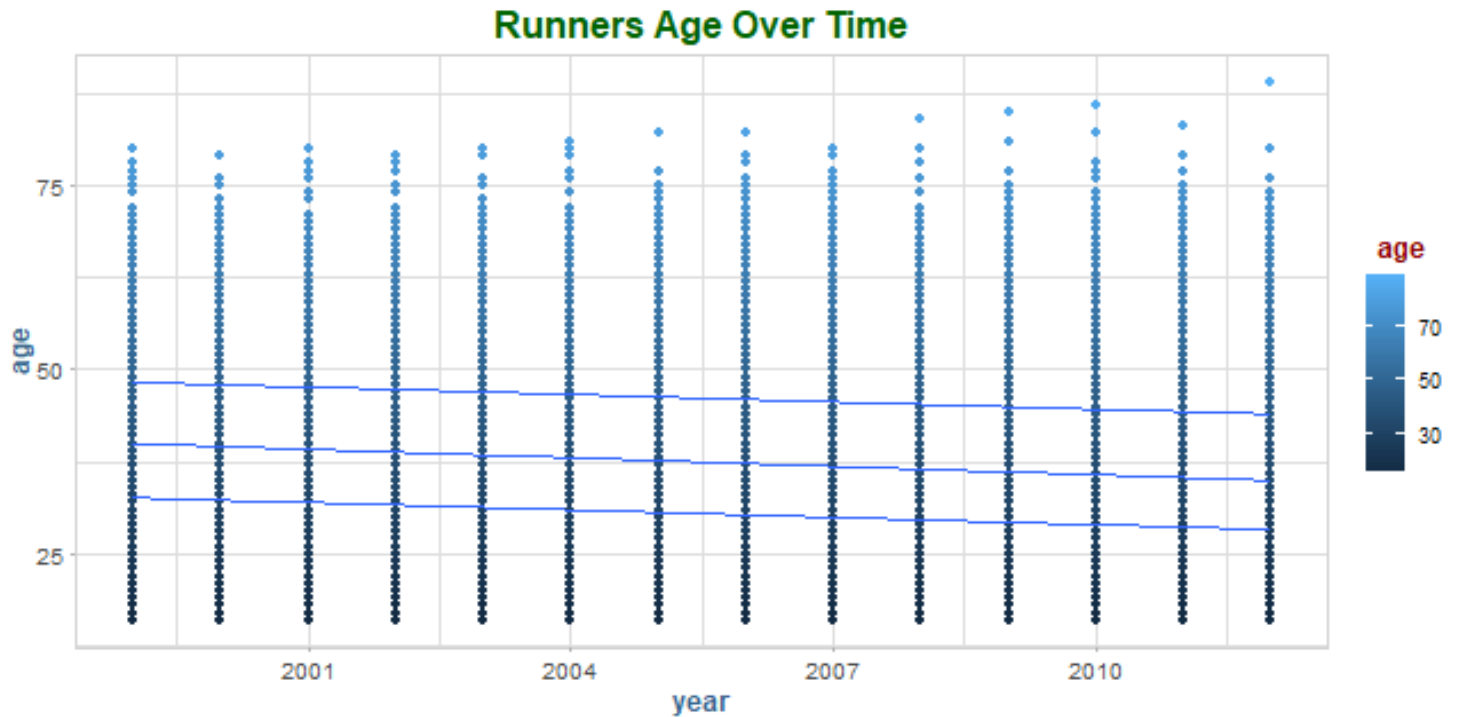
```r
mR.lo99 <- loess(runTime ~ age, cbMenSub[ cbMenSub$year == 1999,])
mR.lo.pr99 <- predict(mR.lo99, data.frame(age = age20to80))

summary(mR.lo.pr99)
```

```
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
  79.53   82.42   87.27   89.90   96.15  110.07
```

```r
mR.lo12 <- loess(runTime ~ age, cbMenSub[ cbMenSub$year == 2012, ])
mR.lo.pr12 <- predict(mR.lo12, data.frame(age = age20to80))

summary(mR.lo12)
```

```
Call:
loess(formula = runTime ~ age, data = cbMenSub[cbMenSub$year ==
    2012, ])

Number of Observations: 7164
Equivalent Number of Parameters: 5.08
Residual Standard Error: 15.23
Trace of smoother matrix: 5.55  (exact)

Control settings:
  span     :  0.75
  degree   :  2
  family   :  gaussian
```

```
  surface  :  interpolate      cell = 0.2
  normalize:  TRUE
 parametric:  FALSE
drop.square:  FALSE
```

```r
plot(mR.lo.pr99 ~ age20to80,
     type = "l", col = "purple", lwd = 3,
     xlab = "Age (years)", ylab = "Fitted Run Time (minutes)")

lines(x = age20to80, y = mR.lo.pr12,
      col = "green", lty = 2, lwd = 3)

legend("topleft", col = c("purple", "green"), lty = 1:2, lwd = 3,
       legend =  c("1999", "2012"), bty = "n")
```
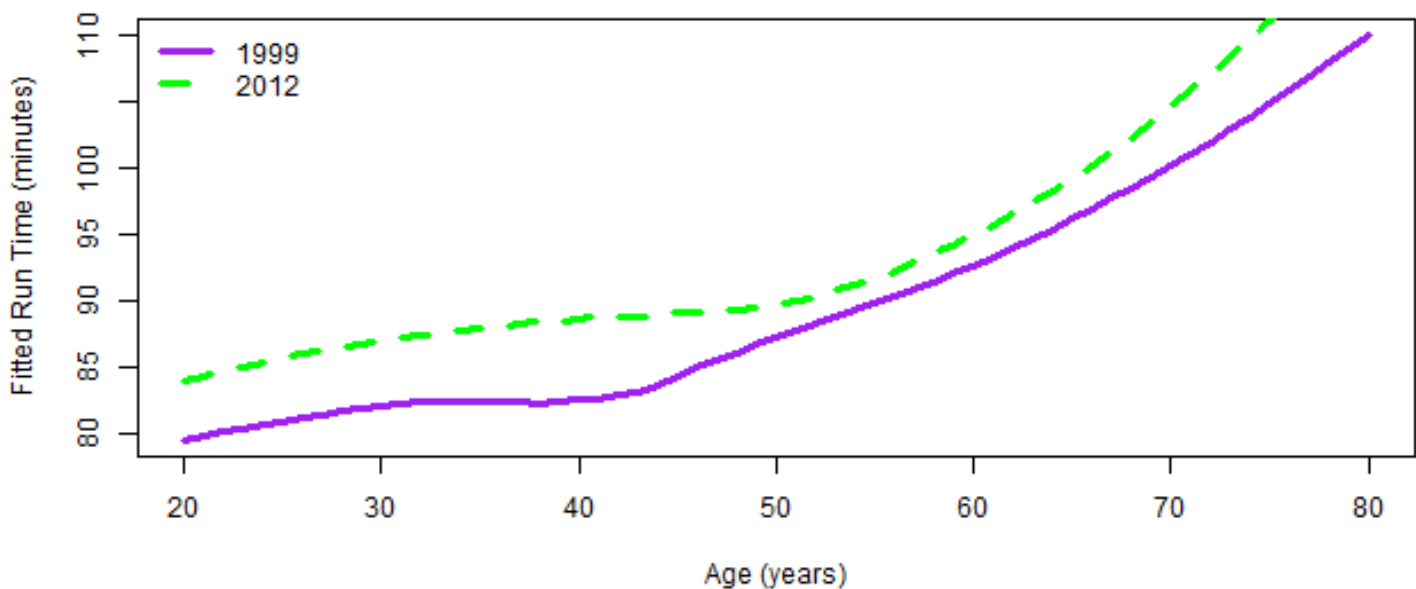


```r
years <- 1999:2012
results <- list(length(years))

y <- 1999

for( i in 1:length(years) )
{
   y = years[i]
   data <- cbMenSub[ which(cbMenSub$year == y), ]

   model <- loess(runTime ~ age, data)
```

```
    pred <- predict(model, newdata = age20to80)

    results[[i]] <- data.table(Year = rep(y, length(pred)), Age = age20to80, Pred = pred)
}

race_years_data <- do.call("rbind", results)

ggplot(race_years_data, aes(Age, Pred, group = Year)) +
    geom_line(aes(col = Year)) +
    labs(title = "Predicted Performance by Year", ylab = "Predicted Run Time", xlab = "Runner Ag
```

Warning: Removed 2 row(s) containing missing values (geom_path).
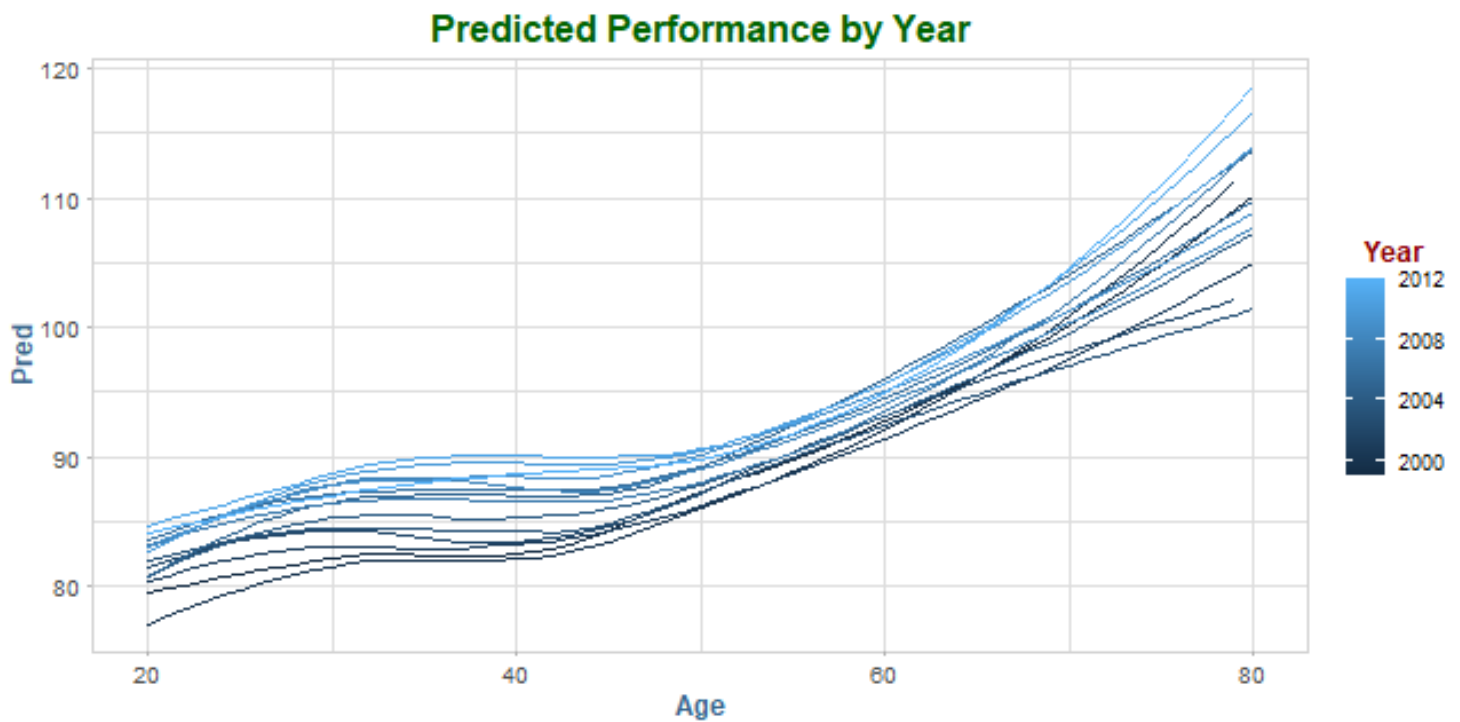
Constructing a Record for an Individual Runner across Years

```
trimBlanks <- function(charVector) {
    nameClean <- gsub("^[[:blank:]]+", "", charVector)
    nameClean <- gsub("[[:blank:]]+$", "", nameClean)
    nameClean <- gsub("[[:blank:]]+", " ", nameClean)
}

nameClean <- trimBlanks(cbMenSub$name)
```

```r
length(nameClean)
```

```
[1] 69735
```

```r
length(unique(nameClean))
```

```
[1] 42838
```

```r
table(table(nameClean))
```

```
    1      2      3      4      5      6      7      8      9     10     11     12     13
29258   7711   2733   1385    712    416    248    149     92     56     44     19      7
   14     15     17     18     19     30
    3      1      1      1      1      1
```

```r
head(sort(table(nameClean), decreasing = T), 1)
```

```
Michael Smith
           30
```

```r
mSmith <- cbMenSub[nameClean == "Michael Smith", ]

head(unique(mSmith$home))
```

```
[1] "Annapolis MD      "   "Bethesda MD         "  " Annapolis MD      "
[4] " Chevy Chase MD    "  " Annandale VA       "  "Annapolis MD      "
```

```r
nameClean <- tolower(nameClean)

head(sort(table(nameClean), decreasing = T), 1)
```

```
michael smith
           33
```

```r
nameClean <- gsub("[,.]", "", nameClean)

tabNameYr <- table(cbMenSub$year, nameClean)

max(tabNameYr)
```

```
[1] 5
```

```r
class(tabNameYr)
```

```
[1] "table"
```

```r
mode(tabNameYr)
```

```
[1] "numeric"
```

```r
names(attributes(tabNameYr))
```

```
[1] "dim"       "dimnames" "class"
```

```r
dim(tabNameYr)
```

```
[1]    14 39096
```

```r
head(colnames(tabNameYr), 3)
```

```
[1] "8illiam maury"   "a gudu memon"    "a miles simmons"
```

```r
which(tabNameYr == max(tabNameYr), arr.ind = T)
```

```
         nameClean
2012 14     25444
```

```r
indMax <- which(tabNameYr == max(tabNameYr), arr.ind = T)
colnames(tabNameYr)[indMax[2]]
```

```
[1] "michael brown"
```

```r
cbMenSub$nameClean <- nameClean
```

```r
cbMenSub$yob <- cbMenSub$year - cbMenSub$age
```

```r
homeClean <- trimBlanks(cbMenSub$home)
homeClean <- tolower(homeClean)
```

```r
table(homeClean)
```

```
homeClean
                       #2 dc                 0 va
             70            1                    1
   10707 berlin ge   1131 n utah st. va   1237 n utah st va
              1            1                    1
          14 va          20001 dc             21093 md
              1            1                    1
          316 dc          44136 oh          aberdeen md
              1            1                    8
        abingdon        abingdon md          abington
              3           40                    1
      abington pa        accokeek          accokeek md
              5            3                   21
      achorage ak        acme pa            acton ma
              1            1                    1
          ada mi        adamstown          adamstown md
              1            1                    7
      adelphi md        adrian mi          aelxandria va
```

15	1	1
aexandria va	afton va	ahsburn va
1	3	1
aiea hi	akron	akron oh
1	1	14
akron pa	albany	albany ny
1	1	9
albemarle nc	albertson ny	albertville al
1	4	1
albion ny	albion ri	albuquerque
2	1	3
albuquerque nm	alburg	alburtis pa
11	1	1
alden ny	alderson wv	aldie
1	3	4
aldie md	aldie va	alex va
1	30	1
alexadria va	alexanderia va	alexandira va
1	1	2
alexandrai va	alexandria	alexandria a
1	360	1
alexandria al	alexandria dc	alexandria fl
1	3	1
alexandria il	alexandria mn	alexandria va
1	1	4004
alexandria vi	alexandria vt	alexandria, va
2	1	1
alexnadria va	alfred me	alfred station ny
4	1	1
allendale nj	allentown nj	allentown pa
1	1	10
allison pa	allison park	allison park pa
1	1	7
alllston ma	allston ma	alpharetta ga
1	5	4
alrington va	altmar ny	altoona pa
3	3	3
altoona wi	altus ok	ambler pa
1	1	6
ambridge pa	ames ia	amesbury ma
2	1	3
amherst ma	amherst ny	amherst oh
1	2	5
amherst va	amissville va	anacostia annex dc
1	4	1

anaheim hills ca 1	anandale va 1	anchorage 4
anchorage ak 2	andale 1	andover 1
andover ct 1	andover ma 4	andrews afb 1
andrews afb md 20	andrews air for md 1	ann arbor 3
ann arbor mi 30	annaandale va 1	annadale va 1
annanadale va 1	annandale 44	annandale nj 2
annandale va 403	annandale` va 1	annapolis 27
annapolis md 436	anniston al 1	annville pa 1
ansonia ct 1	anthony nm 1	apalachin ny 1
apartment 22 dc 1	apartment 401 dc 1	apex 1
apex nc 11	apg md 2	apo aa 3
apo ae 4	apo ae md 1	apo ny 1
apple valley mn 2	appleton wi 7	apt # 1701 ca 1
apt 102 dc 1	apt 1137s va 1	apt 1202 md 1
apt 1407 va 1	apt 200 va 1	apt 201 dc 1
apt 202 dc 1	apt 2102 va 1	apt 221 pa 1
apt 301 dc 1	apt 304 va 1	apt 316 va 1
apt 318 dc 1	apt 335n va 1	apt 4 va 1
apt 438 va 1	apt 603 md 1	apt 703 dc 1
apt 716 dc 1	apt 8 ny 1	apt. 1b ny 1
apt. 212 dc 1	apt. 251 va 1	apt. 302 wa 1
apt. 401 dc 1	apt. 508 va 1	apt. 7f ny 1
apt. 830 dc	apt902 dc	ar va

Cherry Blossom Race Times

1	1	1
arbutus md	arcadia ca	archbald pa
1	1	2
ardmore	ardmore pa	arilngton va
1	14	1
arlignton va	arliington va	arlimgton va
1	2	1
arlingon va	arlingotn va	arlingtn va
3	2	1
arlingtno va	arlington	arlington dc
1	598	1
arlington heights il	arlington in	arlington ma
1	1	5
arlington md	arlington nc	arlington tx
1	1	8
arlington va	arlington va va	arlington vi
6871	3	2
arlington, va va	arlington881299 va	arlingtton va
1	1	1
arlintong va	arlnigton va	armold md
1	1	1
arnold	arnold md	artlington va
6	80	1
arvada co	asburn va	ashbunr va
1	1	1
ashburn	ashburn md	ashburn va
48	1	536
ashburn village va	ashburn vt	asheboro nc
1	1	1
asheville nc	ashland ks	ashland ma
3	1	2
ashton	ashton dc	ashton md
3	1	29
ashurn	aspen hill md	aston pa
1	1	3
astoria	astoria new yor ny	astoria ny
2	1	21
atglen	athens ga	athol ma
1	1	1
atlan highlands nj	atlanta ga	atlantic beach fl
1	58	2
atlantic city nj	attleboro ma	aubrey
1	1	1
aubrey tx	auburn hills mi	auburndale ma
1	3	2

Cherry Blossom Race Times

auderghem 1	audubon 1	audubon nj 4
audubon pa 1	auke bay ak 1	aurora co 1
aus 1	austell ga 1	austin 1
austin tn 1	austin tx 31	austintown oh 2
australia 3	averill park ny 1	avon ct 2
avon lake oh 4	avondale 2	avondale pa 4
ayer ma 1	aylett va 1	b3 va 1
babylon ny 5	bafb dc 1	bainbridge island wa 2
bala cynwyd pa 3	baldock hertfor uk 1	baldwin 2
baldwin md 9	baldwin ny 2	baldwinsville 2
baldwinsville ny 15	balitmore md 2	ballston lake ny 3
ballston spa ny 3	ballwin mo 2	balston va 1
baltimor md 1	baltimore 113	baltimore dc 1
baltimore md 1574	baltimore md md 1	baltimore me 1
baltimore, md 1	baltimpre md 1	baltlimore md 1
baltmore md 1	bangall ny 1	barkhamsted ct 1
barnesville 1	barnesville md 8	barrington 1
barrington il 1	barrington nh 6	barrington nj 2
barrington rd ri 1	barrington ri 2	basking ridge 1
basking ridge nj 9	batavia il 1	bath ny 2
bath pa 4	batimore md 1	batlimore md 1
baton rouge la 2	bay city mi 1	bay head nj 1
bay shore ny	bayonne	bayonne nj

Cherry Blossom Race Times

2	1	9
bayside ny	bayville ny	be md
3	1	1
beachwood nj	beachwood oh	bealeton va
1	1	8
bealrton va	bear creek nc	bear creek twp
1	1	2
bear creek twp pa	bear creek twp. pa	bear de
4	1	13
beaufort sc	beaver dams ny	beaver falls pa
2	1	3
beavercreek	beavercreek oh	beaverdam va
1	2	3
beaverton or	beckley wv	bedford corners
1	1	1
bedford corners ny	bedford hills ny	bedford nh
3	2	4
bedford ny	bedford tx	bedminster nj
1	1	1
behlehem pa	behtesda md	bel air
1	2	5
bel air md	bel alton md	belair md
87	1	3
belcamp md	bellaire tx	bellbrook oh
7	2	2
belle harbor ny	belle mead nj	bellefonte pa
3	1	2
belleville pa	bellevue ne	bellevue wa
1	2	1
bellmore ny	bellows falls vt	belmar nj
2	1	1
belmont ma	belpre	belpre oh
7	1	3
beltsville	beltsville md	benbrook
3	55	1
benbrook tx	bennett co	bennington vt
1	1	1
bensalem pa	bergenfield nj	berkeley ca
2	2	1
berkeley heights nj	berkeley spring wv	berlin ct
1	1	2
berlin md	bernardsville nj	berryville
2	1	1
berryville va	berwick	berwyn
5	1	1

Cherry Blossom Race Times

berwyn heights md 13	berwyn pa 9	betehsda md 1
bethany beach de 1	betheda md 1	bethel ct 5
bethel park pa 2	bethesd md 1	bethesda 152
bethesda dc 2	bethesda de 1	bethesda md 1607
bethesta md 1	bethleham pa 1	bethlehem 1
bethlehem pa 11	bethpage ny 27	bethsda md 2
beverly hills ca 3	beverly hills mi 7	beverly ma 1
big spring tx 1	billerica ma 1	binghampton ny 1
binghamton ny 6	birmingham al 9	birmingham mi 4
bishopville md 2	bismarck nd 1	blacklick oh 1
blacksburg 2	blacksburg va 28	blackwood nj 1
bladensburg md 2	blaine 1	blairstown nj 1
blakely pa 1	blandon pa 3	blauvelt ny 1
bloomfield hills mi 1	bloomfield mi 1	bloomfield nj 4
bloomfield villag mi 1	blooming grove ny 1	bloomingburg ny 4
bloomingdale il 1	bloomingdale nj 1	bloomington in 3
bloomsburg pa 1	blowing rock nc 1	blue bell 1
blue bell pa 6	blue springs mo 1	bluefield wv 4
bluemont va 3	bmore md 1	boalsburg pa 1
boardman oh 3	boca raton 1	boca raton fl 1
boiling springs pa 1	boise id 2	bolinas ca 1
bolivia 1	bolling afb 1	bolling afb dc 23
bolton landing ny	bon air va	bonaire ga

1	1	2
bonfield il	boone nc	boonsboro
1	1	2
boonsboro md	boonton nj	boothbay harbor me
14	2	2
boston	boston ma	boulder co
3	46	15
bourquet@verizo md	bow nh	bowie
1	6	17
bowie md	boxboro ma	boxborough ma
233	4	1
boyds	boyds md	bozeman mt
1	40	1
braddock height md	bradenton fl	bradfordwoods pa
1	2	2
brambleton va	branchburg	branchburg nj
21	1	11
branchville nj	brandon	brandon fl
1	1	2
brandon ms	brandy station va	brandywine
1	1	1
brandywine md	branford	branford ct
5	1	1
brattleboro vt	breinigsville pa	brentwood
1	1	1
brentwood md	brentwood tn	brevard nc
1	7	2
brewer me	brewster	brewster ny
3	1	6
bri	briarcliff manor ny	briarwood ny
1	1	1
brick nj	bridgeport	bridgeport ct
3	1	3
bridgeport pa	bridgeport wv	bridgeton mo
1	5	1
bridgeton nj	bridgewater nj	bridgewater va
6	4	4
brielle nj	brigantine nj	brighton ma
3	1	9
brighton mi	brinklow	brinklow md
2	1	2
bristol	bristol ct	bristol pa
1	1	1
bristol ri	bristow	bristow va
4	16	122

broad brook ct	broad run va	broadlands va
1	3	24
broadview heights oh	broadview hts oh	brokklyn ny
1	1	1
bronx ny	bronxville	bronxville ny
8	1	3
brookeville	brookeville md	brookfield
6	58	1
brookfield ct	brookfield wi	brookhaven
4	4	1
brookline	brookline ma	brooklyn
2	14	8
brooklyn ny	brooklyn oh	brookside
156	1	1
brookside nj	broomall pa	broomes island
1	3	1
broomes island md	bruke va	brunswick md
1	1	1
bryans rd md	bryans road md	bryn mawr pa
1	4	9
buchanan va	buckingham	buckingham pa
1	1	1
budd lake nj	buena vista va	buffalo grove il
2	1	6
buffalo ny	buford ga	buies creek nc
14	2	1
bunker hill	bunker hill wv	burke
1	2	43
burke va	burkittsville md	burlingame ca
497	1	1
burlington ct	burlington nc	burlington nj
2	1	1
burlington vt	burnley	burnsville mn
7	1	1
burnt hills ny	burtonsvile md	burtonsville
1	1	2
burtonsville md	buxton me	buzzards bay ma
32	1	2
byfield ma	c1130 dc	cabin john md
1	1	28
cabin john me	cahpel hill nc	calabasas ca
1	1	4
calais me	california	california md
1	3	23
callaway	callaway md	cambria heights ny

Location	Count	Location	Count	Location	Count
	1		3		1
cambridge	4	cambridge ma	46	cambridge md	3
camden de	1	camden sc	2	cameron nc	1
camillus ny	2	camp hill pa	9	camp lejeune nc	3
camp springs md	11	campbell ca	1	campbell hall ny	1
campton nh	1	can	5	canada	27
canandaigua ny	2	canonsburg pa	7	canton ct	1
canton ga	3	canton ma	1	canton mi	3
canton oh	2	cape elizabeth me	3	cape may nj	1
capitol heights md	4	carbondale co	1	carleton	1
carlisle	1	carlisle ma	1	carlisle pa	35
carlsbad ca	5	carmel in	1	carmel ny	3
carmichael ca	1	carmichaels pa	1	carngie pa	1
carrboro nc	5	carrollton ga	1	carrollton tx	1
carrollton va	1	cary	1	cary nc	34
casanova va	2	cascade md	1	cascade road md	1
casper wy	1	catawba va	1	catharpin	2
catharpin va	18	catlett va	1	catonsville	12
catonsville md	118	catonsville, md. md	1	cedar grove nj	1
cedar rapids ia	1	cedaredge co	1	cedarville oh	1
centennial co	3	center conway nh	1	centerville oh	1
centerville va	1	centeville va	1	central islip ny	1
centreville	46	centreville md	6	centreville va	481

centreville vi 1	centrevillle va 1	chadron ne 1
chagrin falls 1	chagrin falls oh 4	chambersburg 3
chambersburg pa 40	champaign 1	champaign il 2
chandler az 3	chanitlly va 1	chantilly 17
chantilly va 207	chantily va 1	chapapaqua ny 1
chapel hill 1	chapel hill nc 54	chapel hill tn 1
chappaqua ny 13	charles town 2	charles town wv 9
charleston 1	charleston sc 3	charleston wv 5
charlestown ma 9	charlestown nh 1	charlettesville va 1
charlotte 4	charlotte hall md 1	charlotte nc 65
charlottesville 7	charlottesville va 70	chatham 1
chatham nj 4	chatilly va 1	chattanooga tn 3
chcago il 1	chelsea ma 2	cheltenham md 9
cheltenham pa 1	cherry hill nj 11	chesapeake 2
chesapeake bch md 1	chesapeake beac 3	chesapeake beac md 6
chesapeake beach md 18	chesapeake city md 1	chesapeake md 1
chesapeake va 22	cheshire ct 8	chestefield va 1
chester 1	chester md 8	chester nj 1
chester ny 1	chester springs pa 3	chester va 1
chesterfield 1	chesterfield va 7	chestertown md 9
chestnut hill ma 6	chevelry md 1	cheverly 1
cheverly dc 1	cheverly md 13	chevy chas md 3
chevy chase	chevy chase dc	chevy chase md

Cherry Blossom Race Times

53	2	711
cheyenne wy	chicago	chicago il
3	3	104
chillum md	chittenango ny	christiansburg va
6	1	6
chula vista ca	churchhill md	churchton md
1	1	6
churchville md	cibolo tx	cincinnati
3	2	1
cincinnati oh	city dc	city island ny
25	1	1
clarendon hills il	clark nj	clarks green pa
2	1	2
clarks summit pa	clarksburg	clarksburg md
3	3	46
clarksburg wv	clarkston mi	clarksvile md
1	2	1
clarksville	clarksville md	clay city in
8	89	1
claymont de	clayton mo	clayton nc
1	3	3
clayton oh	clear spring md	clearfield pa
1	2	1
clearwater fl	clemmons	clemmons nc
5	1	2
clermont ga	cleveland heights oh	cleveland oh
2	1	10
cliffside park nj	cliffwood beach nj	clifton
1	3	11
clifton nj	clifton park ny	clifton va
2	2	154
clinton	clinton ct	clinton md
4	1	45
clinton nj	clinton wa	closter nj
1	1	1
cloverly md	coatesville	coatesville in
1	1	74
coatesville pa	cockeysville	cockeysville md
4	3	1
coconut grove	cohoes ny	col
1	4	1
colchester ct	cold spring ny	coldwater mi
1	1	21
colesville md	college grove tn	college park
2	1	21

college park md	collegeville pa	collingswood
168	12	1
collingswood nj	colmar pa	colombia
3	3	1
colonia nj	colonial beach va	colonial height va
1	5	2
colonial hghts va	colonie ny	colorado spring
1	1	2
colorado spring co	colorado springs ca	colorado springs co
7	1	2
coltons point md	colts-neck nj	colts neck nj
1	1	2
columbia	columbia de	columbia md
63	1	726
columbia mo	columbia nj	columbia pa
5	1	8
columbia sc	columbia va	columbua ms
6	1	1
columbus	columbus afb ms	columbus ga
3	1	1
columbus in	columbus ms	columbus nj
4	2	2
columbus oh	colummbia md	columubs nj
31	1	1
commack	commack ny	commerce city co
1	1	1
commerce twp	comus	comus md
1	1	10
concord	concord ca	concord ma
2	3	2
concord nc	concord nh	concord oh
5	10	1
congers ny	conneaut oh	conover nc
2	1	1
conshohocken pa	converse la	conway ar
11	1	1
conway nh	conyngham pa	cooksville md
1	3	2
coopersburg pa	coplay pa	coppell tx
1	1	1
coral gables fl	coral springs fl	coralville ia
1	1	2
coram ny	coraopolis pa	cordova tn
1	3	1
cornelius nc	corning ny	corpus christi tx

2	4	1
cortland	cortland oh	cortlandt manor ny
1	4	3
corvalis or	corvallis or	costa mesa ca
1	1	1
council bluffs ia	coventry ri	coventry vt
2	1	1
coxsackie ny	cplumbia md	cramerton nc
1	1	1
cranberry pa	cranberry towns pa	cranberry townshi pa
2	2	2
cranberry twp pa	cranbury	cranford nj
10	1	7
cranston ri	cream ridge nj	cresskill nj
1	1	2
cresson pa	crofton	crofton md
2	11	143
cromwell ct	croom md	cross junction va
2	1	1
crossville tn	crown point	crown point in
1	1	1
crownesville md	crownsville	crownsville md
1	1	25
crozet	crozet va	crystal city va
1	3	1
crystal lake il	ct va	cudjoe key fl
1	1	1
culpeper	culpeper va	culver city ca
1	11	1
cumberland	cumberland md	cumberland me
1	3	3
cumberland ri	curtis bay md	cuyahoga falls oh
2	3	2
dacula ga	dahlgren	dahlgren va
3	2	19
dahlonega ga	dale city	dale city va
1	2	17
dale va	dallas	dallas pa
1	5	5
dallas tx	dallastown pa	daly city ca
24	2	1
damariscotta me	damascus	damascus md
1	8	85
danbury ct	daniels wv	danvers ma
2	2	2

danville pa	danville va	darenstown md
3	1	1
darien	darien ct	darlington md
2	7	2
darnestown	darnestown md	dartmouth ma
1	28	1
davenport ia	davidson nc	davidsonville
2	2	2
davidsonville md	davie fl	davis ca
27	1	3
davison mi	davudsonville md	daxton md
2	1	1
dayton	dayton md	dayton me
3	9	1
dayton nj	dayton oh	dc dc
2	3	8
deale md	dearborn height mi	dearborn mi
6	1	2
debary fl	decatur	decatur al
1	1	1
decatur ga	dedham ma	deerfield il
12	4	1
deerfield wi	defreestville,r ny	delano mn
1	1	1
delaplane va	delaware oh	deleware oh
1	1	1
delmar md	delran nj	deltona fl
2	2	1
denbigh va	denton	denton md
1	1	2
denver	denver co	denver nc
2	26	3
denver pa	denville nj	depere wi
1	1	2
deptford nj	derry	derry nh
1	1	3
derwod md	derwood	derwood md
1	5	74
derwoord md	des moines	des moines ia
1	1	4
destin fl	detroit mi	devon pa
1	2	1
dewitt ny	dickerson	dickerson md
2	1	2
dillsburg pa	disputanta va	district height

Cherry Blossom Race Times

4	1	1
district height md	district heights md	district hgts md
6	3	1
district hts	district of colum dc	dix hills ny
1	1	5
dobbs ferry ny	dominican republi	dorchester ma
1	1	7
dorset vt	dothan al	douglassville pa
1	1	1
douglasville ga	dover	dover de
4	2	9
dover ma	dover nh	dover pa
1	2	1
dover plains ny	dowers grove il	downington pa
1	1	1
downingtown	downingtown pa	doylestown
3	8	1
doylestown pa	drayden md	dresher pa
14	1	7
drexel hill	drexel hill pa	drive md
2	8	1
dryden ny	dubham nc	dublin oh
1	3	12
dulles va	duluth ga	duluth mn
6	4	1
dumfires va	dumfries	dumfries va
1	12	96
dumont nj	dunbar wv	duncansville pa
5	3	2
dunkirk	dunkirk md	dunlap il
1	26	2
dunmore pa	dunn loring	dunn loring va
2	3	24
dunville nj	dunwoody ga	durango co
1	9	1
durant ok	durham	durham ct
1	4	1
durham nc	durham nh	durham nm
79	1	1
duxbury ma	dyersburg tn	e brunswick nj
1	1	2
e hampton ny	e northport ny	e orleans ma
2	1	1
e windsor hill	e. amherst ny	e. windsor nj
1	1	2

eagan mn 2	east amherst 1	east amherst ny 2
east boston ma 1	east brunswick 1	east brunswick nj 14
east falmouth ma 1	east freetown ma 1	east greenbush ny 1
east greenwich ri 1	east hampton 2	east hampton ct 2
east hampton ny 11	east haven ct 1	east islip ny 1
east lansing mi 1	east lyme ct 4	east meadow ny 1
east northport ny 6	east norwich ny 1	east orleans ma 4
east palestine oh 1	east patchogue ny 1	east rutherford 1
east troy wi 1	east windsor nj 1	easthampton 1
eastlake oh 2	easton md 6	easton pa 5
eaton oh 1	ebensburg pa 1	eden md 1
edgewater 5	edgewater md 57	edgewater nj 3
edgewood 1	edgewood md 9	edgwater md 1
edina mn 2	edinboro pa 1	edison nj 14
edmonston 1	edmonston md 5	el macero ca 2
eldersbug md 1	eldersburg 3	eldersburg md 50
eldersbvurg md 1	elgin il 2	elicott city md 1
elizabeth city nc 2	elizabeth nj 1	elizabethtown ky 2
elizabethtown pa 11	elizabethtwon pa 1	elk grove ca 1
elk grove villa il 1	elkins park 1	elkins park pa 9
elkins wv 1	elkrdige md 2	elkridge 7
elkridge md 86	elkton md 10	ellciott city md 1
ellicot city md	ellicott city	ellicott city md

Cherry Blossom Race Times

2	37	447
ellicott md	ellington ct	ellwood city
4	1	1
ellwood city pa	elmhurst ny	elmira ny
9	1	1
elmont ny	elverson pa	elysburg pa
1	1	1
emerald hills ca	emerson nj	emmaus pa
1	5	1
emmitsburg md	endicott ny	enfield ct
2	1	1
englewood nj	englishtown nj	enid ok
1	1	1
enola pa	enon oh	enterprise al
1	1	1
ephrata pa	erie pa	escondido ca
2	5	1
essex ct	essex junction vt	essex vt
1	1	1
eth	ethiopia	etters pa
4	23	3
eugene or	euless	evans city pa
3	1	2
evans ga	evanscity pa	evanston il
1	1	5
everett ma	everett wa	evington va
2	1	1
ewing nj	ewing township nj	exeter
1	2	1
exeter nh	exeter pa	export pa
10	5	3
exton	exton pa	fai
2	8	1
faifax va	fair haven nj	fair lakes va
3	3	1
fair lawn nj	fairafx va	fairborn oh
3	1	1
fairfax	fairfax sta va	fairfax statio va
111	1	1
fairfax station	fairfax station a	fairfax station dc
20	1	1
fairfax station va	fairfax va	fairfax, va va
208	1426	1
fairfax. va	fairfield	fairfield oh
1	1	4

Cherry Blossom Race Times

fairfield pa	fairhope	fairlawn oh
2	1	1
fairless hills pa	fairmont wv	fairplay md
1	1	1
fairport ny	fairview pa	falling waters wv
7	1	3
falls chruch va	falls chuch city va	falls chuch va
3	1	2
falls church	falls church ci va	falls church city va
120	3	3
falls church va	falls church wv	falls church, va
1293	1	1
falls churh va	falls, church va	fallson md
1	1	1
fallston	fallston md	falmouth ma
2	18	3
falmouth me	falmouth va	falss church va
5	1	1
fannettsburg pa	fanwood nj	farfax va
1	1	1
farifax station va	farifax va	fariport ny
1	1	1
farmingdale	farmingdale nj	farmingdale ny
1	3	4
farmington	farmington ct	farmington hill
2	2	1
farmington hill mi	farmington hills mi	farmington mi
3	2	1
farmville va	faurfax va	fayetteville ar
2	1	1
fayetteville ga	fayetteville nc	fayetteville pa
1	11	5
fayetteville wv	feasterville pa	federal way
1	1	1
federal way wa	felton de	fiarfax station va
2	3	1
findlay oh	finksburg md	fishersville va
1	18	1
fishkill	fishkill ny	flanders nj
1	3	1
flemington nj	flinksburg md	flint hill
15	4	1
flint hill va	floral park ny	florham park nj
5	1	3
florida ny	flossmoor il	flourtown pa

4	floyd va	2	flushing	2	flushing mi
2	flushing ny	2	ford city pa	1	forest
8	forest heights md	1	forest hill	1	forest hill md
1	forest hills ny	1	forest lake	19	forest park il
8	forest va	1	forestdale	1	forestville
7	forestville md	1	fork md	2	fork union va
13	fort a.p. hill va	4	fort ap hill va	1	fort belvior va
1	fort belvoir	1	fort belvoir va	1	fort blevoir va
1	fort bragg nc	54	fort carson co	1	fort collins
1	fort collins co	1	fort dodge	1	fort george g. md
7	fort lauderdale fl	1	fort lee	2	fort lee nj
2	fort lee va	1	fort mcnair dc	7	fort meade
1	fort meade md	1	fort mill sc	1	fort myer va
14	fort stewart ga	1	fort washington	3	fort washington md
1	fort washington va	4	fort washinton md	58	fort worth
1	fort worth tx	1	forty fort pa	1	foster city ca
6	foxridge md	1	fpo ae	1	fpo ap
1	fpo ap ca	1	fra	1	framingham ma
2	france	1	frankfort ny	7	franklin
4	franklin lakes nj	4	franklin ma	1	franklin nc
2	franklin pa	2	franklin tn	7	fredercksburg va
22	frederick	252	frederick md	1	fredericksbrug va

Cherry Blossom Race Times

fredericksburg 13	fredericksburg va 128	fredersick md 1
fredonia ny 1	fredricksburg va 2	freehold nj 4
freeland md 2	freeland mi 1	freeport me 1
fremont ca 1	fremont oh 1	frenchtown nj 1
freshmeadows ny 1	frisco tx 1	front royal 2
front royal va 10	frostburg md 9	fruita 1
fruitland 1	fruitland md 15	ft belvoir va 22
ft bragg nc 2	ft collins co 2	ft lauderdale fl 2
ft lee va 4	ft mcnair dc 2	ft meade md 17
ft monroe va 1	ft myer va 4	ft myers fl 1
ft royals va 1	ft stewart ga 1	ft thomas ky 1
ft washington 4	ft washington md 18	ft wayne in 1
ft worth tx 1	ft. belvoir va 12	ft. bragg nc 2
ft. lauderdale fl 2	ft. meade md 1	fullerton ca 2
fulton 1	fulton md 16	fuquay varina nc 4
gahanna 1	gahanna oh 2	gaiithersburg md 1
gainesvilel va 1	gainesville 1	gainesville fl 5
gainesville ga 1	gainesville va 121	gainseville va 3
gainsville va 2	gaitherburg md 1	gaithersbug md 1
gaithersburg 65	gaithersburg dc 1	gaithersburg md 807
gaithersburg, m md 1	gaithersburg, md 1	gaithersburgh md 1
gaithursburg md 1	gales ferry ct 1	galesburg il 1
galesville md	galloway oh	gambrills

3	1	5
gambrills md	garden city mo	garden city ny
26	2	1
garden ridge tx	gardena ca	garland tx
1	1	2
garner nc	garret park md	garrett park md
1	5	10
gary court va	gaston nc	gastonia nc
1	2	2
geigertown pa	geneva il	georgetown dc
1	3	1
georgetown de	georgetown ma	georgetown tx
4	1	1
ger	germantown	germantown md
1	39	381
germantown nc	germantown oh	germantown wi
1	1	1
germantownd md	gerrardstown wv	gettysburg
1	1	3
gettysburg pa	gibson island	gibsonia
26	1	2
gibsonia pa	gig harbor wa	gilbert az
14	1	2
gilbertsville pa	girard dc	girardville pa
1	1	1
glastonbury ct	glen allen	glen allen va
1	1	30
glen arm	glen arm md	glen burnie
1	13	1
glen burnie md	glen burnine md	glen carbon il
36	1	2
glen cove ny	glen dale wv	glen echo md
1	1	5
glen mills pa	glen rock nj	glen rock pa
5	2	6
glenarden	glenarden md	glencoe il
1	7	4
glendale	glendale az	glendale md
1	2	2
glenelg	glenelg md	glenmead md
1	10	1
glenmoore pa	glenn burnie md	glenn dale
4	1	1
glenn dale md	glenndale md	glenshaw pa
11	1	9

Cherry Blossom Race Times

glenside pa	glenview il	glenwood
8	5	2
glenwood md	gloucester point va	glyndon md
8	1	2
goffstown nh	golden valley mn	goldsboro nc
3	1	5
goldvein va	goode va	goodyear az
2	1	1
gordonsville va	gore	goshen ny
1	1	1
gragton va	graham nc	granby ct
1	2	1
grand blanc mi	grand ledge mi	grand prairie tx
1	1	1
grand rapids	grand rapids mi	grandview heights oh
1	7	2
granger	granger in	granite quarry nc
1	4	1
granite springs	granite springs ny	grantsville md
1	5	1
grantville pa	granville oh	grasonville md
1	3	3
great falls	great falls mt	great falls va
15	2	211
great falss va	great mills md	great neck
1	6	1
great neck ny	green bay	green bay wi
4	1	3
greenbelt	greenbelt md	greenblet md
8	80	1
greenburg	greencastle	greencastle pa
1	2	16
greenelt md	greenfield ma	greenlawn ny
1	1	2
greensboro	greensboro nc	greensburg
2	25	5
greensburg pa	greenville	greenville de
31	2	4
greenville nc	greenville pa	greenville sc
3	1	3
greenwich	greenwich ct	greenwich ny
1	6	2
greer sc	gregory mi	griffin ga
2	1	1
griswold ct	grosse ile mi	grosseile

1	1	1
groton	groton ct	groton ma
1	1	12
grove city oh	grove city pa	grundy center ia
1	2	1
guaynabo pr	guilford	guilford ct
4	1	2
gulfport me	gulfport ms	gunpowder md
1	1	1
gwynn oak md	hackensack nj	hackettstown nj
3	1	2
haddon heights nj	haddon township nj	haddonfield nj
1	1	3
hagerstown	hagerstown md	hainesport nj
9	71	1
halbur ia	halethorpe md	hamarket va
1	3	1
hamburg	hamburg nj	hamburg ny
1	2	8
hamden	hamden ct	hamilton
1	3	6
hamilton nj	hamilton ny	hamilton square nj
5	5	1
hamilton va	hamilton,ont cn	hammond in
22	1	1
hampstead md	hampstead nc	hampton
7	1	3
hampton va	hanover	hanover md
22	4	32
hanover nh	hanover pa	hanover twp pa
2	53	1
hanscom afb ma	hanson ma	hardwick ma
1	1	1
harleysville pa	harmony pa	harpers ferry
2	3	2
harpers ferry wv	harriman	harriman ny
12	1	2
harrington	harrington park nj	harrisburg
4	1	3
harrisburg nc	harrisburg pa	harrisonberg va
1	52	1
harrisonburg va	harrisville pa	harrsionburg va
13	1	1
hartford	hartford ct	hartsdale ny
1	4	1

hartwood	hartwood va	harwich ma
2	4	1
harwick pa	harwood md	hasting on hudson ny
1	4	1
hastings-hudson	hastings-on-hud ny	hastings-on-hudso ny
1	3	2
hastings-on-hus ny	hatboro pa	hatfield ma
1	6	1
hauppauge	hauppauge ny	havelock nc
1	5	5
haverford pa	haverhill ia	haverhill ma
3	1	1
havertown	havertown pa	havre de grace
2	10	1
havre de grace md	hawthorne nj	hayamrket va
8	1	1
hayes va	haymarket	haymarket va
1	4	88
hazleton pa	head of chezzet no	hebron md
2	1	1
hedgesville	hedgesville wv	helena mt
1	2	1
hempstead	hempstead ny	henderson nv
1	6	1
hendersonville tn	hendon va	henrico md
2	1	1
henrico nc	henrico va	henrietta ny
1	4	1
herdon va	hermitage pa	hermosa beach ca
1	3	2
herndon	herndon va	hernodn va
45	599	2
hershey pa	hertford nc	hialeah fl
22	1	1
hickory nc	hickory pa	hicksville
2	1	1
high point nc	highland	highland lakes nj
1	4	1
highland md	highland mi	highland mills ny
16	2	5
highland park il	highland park nj	highland ut
2	4	1
highlands nj	highlands ranch co	hightstown nj
1	2	2
hilliard oh	hillsborough	hillsborough nc

Cherry Blossom Race Times

3	1	2
hillsborough nj	hilltown pa	hilton head isl sc
10	2	1
hilton hean isl sc	hinesburg	hinesburg vt
1	1	2
hingham ma	hinsdale il	hoboken
3	2	1
hoboken nj	hoboken ny	hockessin
54	2	1
hockessin de	hoffman estates il	holbrook ny
7	3	2
holland	holland oh	holland pa
2	1	9
hollidaysburg pa	hollis nh	hollister ca
2	2	1
holliston ma	hollwood md	holly church va
1	1	1
holly springs nc	hollywood	hollywood fl
2	1	6
hollywood md	holmdel nj	holton ks
28	2	1
holyoke ma	homer city pa	homestead fl
1	1	1
homewood	honeoye	honeoye falls ny
1	1	1
honesdale	honesdale pa	honeybrook pa
1	2	1
honolulu	hope mills nc	hope valley ri
1	2	1
hopewell jct ny	hopewell junct ny	hopewell juncti ny
1	1	1
hopewell nj	hopewell va	hopwood pa
1	1	1
horseheads ny	horsham	horsham pa
3	1	2
houma la	houston	houston pa
1	2	1
houston tx	huber heights oh	huckessin de
34	1	1
hudson ia	hughesville	hughesville md
1	1	14
hull ma	hume va	hummelstown
1	2	1
hummelstown pa	hunt valley md	huntersville nc
10	18	4

huntingdon valley pa	huntington beac ca	huntington ct
5	1	1
huntington in	huntington md	huntington ny
1	6	4
huntington statio ny	huntington wood mi	huntington wv
1	1	4
huntingtown	huntingtown md	huntly va
2	38	1
huntsville al	huntvalley md	hurlock md
2	2	2
hurst tx	hutchinson ks	hyattsville
1	1	4
hyattsville md	hyattsville roa md	hyde park ny
108	1	3
ijamsville	ijamsville md	imperial beach ca
2	34	2
imperial mo	independence oh	independence va
2	1	2
indian head	indian head md	indian trail nc
1	11	1
indiana	indiana pa	indianaplois in
1	5	1
indianapolis	indianapolis in	indinapolis in
3	25	1
ingleside il	interlaken nj	inverness
1	1	1
iowa city ia	ipswich ma	ire
1	3	1
irmo sc	irvine ca	irving ny
2	3	1
irvington ny	irvington va	islip ny
4	1	1
ithaca	ithaca ny	ivyland pa
1	10	5
jackson heights ny	jacksonville	jacksonville be fl
2	2	2
jacksonville beac fl	jacksonville f	jacksonville fl
2	1	31
jacksonville nc	jacobus pa	jaffrey nh
3	1	1
jamaica estates ny	jamaica ny	jamaica plain
1	5	1
jamaica plain ma	jamesburg nj	jamestown nc
1	1	1
jamison pa	jane lew wv	jap

Cherry Blossom Race Times

6	1	3
japan	jarrettsville md	jaxksonville nc
8	1	1
jeannette pa	jefferson md	jeffersonton
1	4	1
jeffersonton va	jeffersonville pa	jenkintown pa
7	3	6
jenks ok	jericho ny	jericho vt
1	1	2
jersey city nj	jersey shore pa	jessup
29	1	2
jessup md	jessup pa	johns creek ga
36	3	1
johnson city ny	johnson city tn	johnston ia
1	2	1
johnston ri	johnstown pa	joliet va
1	15	1
joppa md	joppa town md	joppatowne md
1	1	1
jordan	juneau ak	jupiter fl
1	2	1
kailua ha	kailua hi	kalamazoo mi
1	1	3
kankakee il	kansas city	kansas city ks
1	1	3
kansas city mo	kaploei	kaska pa
15	1	1
kathleen ga	katonah ny	katy tx
1	12	2
keansburg nj	keedysville md	keene nh
1	4	1
kellingworth ct	ken	kenbridge va
1	25	1
kennet square pa	kennett square pa	kenosha wi
1	3	2
kensignton md	kensingtin md	kensingtion md
1	1	1
kensington	kensington ct	kensington md
33	1	298
kent oh	kent wa	kenya
2	2	62
kenyon street n dc	kernersville nc	keswick va
1	5	3
kettering md	keuka park ny	kew gardens ny
1	1	2

Cherry Blossom Race Times

keymar	keymar md	keyport nj
1	2	2
keyser wv	kill devil hill nc	killingworth ct
1	1	6
kimberly wi	kimberton pa	kinderhook ny
1	9	1
king george	king george va	king nc
2	12	1
king of prussia	king of prussia pa	king william va
1	5	1
kings mountain nc	kingsport tn	kingston pa
1	2	1
kingstown va	kingstowne	kingstowne va
1	9	59
kingsville md	kinnelon nj	kinston nc
2	1	1
kirksville mo	kirkville ny	kirkwood ny
1	1	3
kittanning pa	kittery me	kittery point me
3	4	2
kitty hawk	kitty hawk nc	knightdale nc
1	7	1
knoxville	knoxville md	knoxville tn
1	3	10
koengen	kor	kutztown pa
1	1	2
la crosse wi	la grange il	la jolla ca
2	1	1
la plata	la plata md	la porte in
3	24	1
ladera ranch ca	lafayette ca	lafayette co
1	1	1
lafayette hill	lafayette hill pa	lafayette la
1	6	1
lafayette ny	laguna beach ca	lake ariel
2	1	1
lake ariel pa	lake bluff il	lake city fl
7	3	1
lake forest il	lake geneva wi	lake jackson tx
1	1	1
lake mary fl	lake placid ny	lake ridge
2	3	2
lake ridge va	lake toxaway nc	lakeland fl
31	1	1
lakeland tn	lakeridge va	lakeville ma

	1		4		2
lakewood co		lakewood oh		lambertville nj	
	6		2		2
lancaster		lancaster ny		lancaster oh	
	5		3		2
lancaster pa		lancaster va		landenber pa	
	74		1		1
landenberg pa		landisville pa		landover hills md	
	11		6		1
landover md		landsdowne va		lanexa va	
	24		1		1
langhoren pa		langhorne		langhorne pa	
	1		2		6
langley afb va		langlorne pa		lanham	
	1		1		2
lanham md		lansdale		lansdale pa	
	26		1		13
lansdowne		lansdowne pa		lansdowne va	
	3		4		15
lansdownes va		lansing mi		laplata md	
	1		2		15
laporte in		laramie wy		larchmont ny	
	2		1		3
largo fl		largo md		las cruces nm	
	1		4		3
las vegas nv		latham		latrobe	
	2		1		1
latrobe pa		laurel		laurel dc	
	8		22		1
laurel de		laurel md		laureldale pa	
	1		303		1
lavale md		lawrence ks		lawrence nj	
	1		2		1
lawrenceburg tn		lawrenceville		lawrenceville ga	
	1		2		3
lawrenceville nj		layton ut		laytonsville	
	8		1		5
laytonsville md		league city tx		leawood ks	
	41		1		7
lebanon nh		lebanon pa		lee	
	2		4		1
leeasburg va		leechburg pa		lees summit mo	
	1		1		2
leesburg		leesburg va		lenexa	
	19		279		1

lenexa ks 3	leola pa 3	leominster ma 1
leonardtown md 20	leucadia ca 1	levittown ny 1
levittown pa 1	lewes 1	lewes de 18
lewes pa 1	lewisburg pa 4	lewisburg tn 1
lewisburg wv 6	lewiston ny 1	lewisville nc 7
lewisville tx 1	lexington 3	lexington ky 5
lexington ma 6	lexington nc 2	lexington park 1
lexington park md 34	lexington pk. md 1	lexington va 1
liberty mo 1	libertytown 1	libertytown md 5
libertyville il 9	lic ny 2	lighthouse poin fl 1
lignum va 1	lilburn ga 3	lillteton 1
lincoln 2	lincoln ne 9	lincoln ri 7
lincoln univers 2	lincoln univers pa 3	lincolnton nc 1
linden hill nj 1	linden hill ny 3	linden pa 1
linden va 9	lindenhurst ny 3	lino lakes mn 1
linthicum heights md 1	linthicum md 10	lit 1
litchfield ct 1	lithuania 2	lititz 1
lititz pa 13	little falls ny 3	little ferry nj 1
little neck ny 1	little rock 1	little rock ar 15
little silver nj 4	littlelton co 1	littlestown pa 2
littleton co 4	livermore ca 1	liverpool 2
liverpool ny 6	livingston manor ny 1	livingston nj 7
livonia mi	lock haven pa	locke ny

1	1	3
lockport ny	locust grove va	locust valley ny
7	6	1
logansport in	lonaconing md	london ky
1	3	2
londonderry nh	long beach	long beach ca
4	1	8
long beach ny	long branch nj	long grove il
2	1	1
long island cit ny	long island city ny	long valley
2	5	1
long valley nj	longboat key	longmeadow ma
1	1	1
longmont co	longwood fl	lorton
3	1	18
lorton va	los alamos nm	los angeles
151	3	1
los angeles ca	los gatos ca	lothain md
26	1	1
lothian	lothian md	loudonville ny
1	12	1
louisa va	louisville	louisville ky
1	1	15
loveland co	loveland ny	lovettsville
2	1	1
lovettsville va	lowell ma	lowell mi
26	2	1
lubbock tx	ludlow ma	luray va
2	1	1
lusby	lusby md	lutherville
2	33	2
lutherville-timon md	lutherville md	lutherville,md. md
1	49	1
lutz fl	lykens pa	lynbrook ny
1	1	1
lynchburg	lynchburg va	lyndell pa
1	11	2
lyndhurst nj	m	mableton ga
1	1	3
macedon ny	macomb mi	macon
1	1	1
macon ga	macungie	macungie pa
1	1	11
madison	madison al	madison ct
2	2	1

Cherry Blossom Race Times

madison heights mi	madison ms	madison nj
1	2	8
madison ny	madison va	madison wi
4	3	19
madisonville ky	magnolia de	mahwah nj
1	2	7
maitland fl	malta	malvern
1	1	4
malvern pa	mamaroneck ny	manahawkin nj
14	4	1
manakin-sabot va	manalapan nj	manasquan nj
3	1	10
manassas	manassas park	manassas park va
18	2	28
manassas va	manchester ct	manchester md
244	4	4
manchester nh	manchester pa	manhasset ny
12	2	1
manhattan beach ca	manhattan ks	manheim pa
2	4	2
manlius ny	manorville pa	mansfield ma
2	2	1
mansfield oh	manssas va	maple glen pa
1	1	1
maple grove mn	maple shade nj	maplewood
1	4	1
maplewood nj	maralapan nj	marcellus ny
10	1	1
marengo il	marietta	marietta ga
1	2	11
marietta oh	mariettta ga	marlborough ct
3	1	1
marlow en	marlton	marlton nj
1	1	6
marriotsville md	marriottsville	marriottsville dc
1	2	1
marriottsville md	mars pa	marshall va
29	3	7
martinsburg pa	martinsburg wv	martinsubrg wv
1	13	1
martinsville va	mason neck	mason neck va
1	2	24
masontown ma	masontown pa	massapequa ny
1	2	2
massillon oh	mastic beach ny	mathews va

2	1	1
mattawan mi	matthews	mauldin
1	1	1
maurertown va	mayfield height	mayfield pa
1	1	2
maynard ma	mays landing nj	mc clean va
1	7	1
mc lean va	mcclean va	mcclellandtown pa
1	1	3
mccormick	mcdonald pa	mcgaheysville va
1	1	3
mcguire afb	mckees rocks pa	mckeesport pa
1	1	2
mclane va	mclean	mclean va
1	75	791
mclelan va	mcmlean va	mcmurray pa
1	1	3
md	md md	me lean va
1	1	1
mead co	mechanicsburg	mechanicsburg pa
1	2	27
mechanicsville	mechanicsville md	mechanicsville va
4	21	11
medford ma	medford nj	medford ny
6	4	1
media pa	medical lake wa	medina oh
9	1	2
medway ma	melbourne	melbourne beach fl
2	1	2
melbourne fl	melrose ma	melrose park pa
3	2	1
melville	melville ny	memphis
1	2	1
memphis im	memphis tn	mendham
1	7	1
mendham nj	menlo park ca	menomonee falls
2	3	1
mentor oh	merced ca	mercer pa
2	1	1
mercersburg	mercersburg pa	merchantville nj
1	13	2
meridian ms	merion station	merion station pa
1	1	3
merrick ny	merrifield	merrifield va
1	1	5

merrimack nh	merritt island fl	mesa az
1	1	3
metairie la	methuen ma	mex
1	3	2
mexico	miami	miami beach fl
4	1	4
miami fl	miami springs fl	miamisburg oh
16	1	3
micanopy fl	middle river md	middleburg
1	1	1
middleburg fl	middleburg va	middlebury cent
1	10	1
middlebury vt	middlefield	middlefield ct
2	1	2
middlesex nj	middleton	middleton wi
3	2	6
middletown	middletown ct	middletown de
3	1	11
middletown md	middletown nj	middletown ny
31	4	10
middletown pa	middletown ri	midland mi
3	1	1
midland tx	midland va	midlothian
3	2	1
midlothian va	mifflinburg pa	mifflingburg pa
39	1	1
milbank sd	mildale court md	milford ct
1	1	3
milford de	milford nh	milford nj
7	2	1
milford oh	milford pa	mill valley ca
1	2	3
millburn nj	miller place	millersville
1	1	4
millersville md	millersville pa	millerswville md
63	2	1
millerville md	millesrville md	millington md
1	1	1
millington tn	millsboro de	milltown nj
1	2	2
millville nj	millwood	milton
1	1	1
milton de	milton ma	milwaukee wi
11	1	9
mine hill nj	mineola ny	mineral va

Cherry Blossom Race Times

1	2	1
minneapolis	minneapolis mn	minnetonka mn
2	20	1
minocqua wi	minster oh	mirror lake nh
1	1	1
mission hills ks	missouri city tx	mitchellville
2	2	2
mitchellville md	mitchelville md	mobile al
24	2	4
mogadore oh	mohegan lake ny	mohnton pa
2	1	2
monee il	moneta	mongomery village md
1	1	1
mongtomery vill md	monkton	monkton md
1	1	10
monroe ny	monroe township nj	monroe turnpike nj
6	1	2
monroe twp nj	monroe twp. nj	monroeville pa
2	2	3
monrovia	monrovia md	mont alto pa
1	6	1
mont clare pa	mont village md	montague ma
1	2	1
montclair	montclair nj	montclair va
1	5	21
montgomery	montgomery al	montgomery ny
1	5	3
montgomery vil md	montgomery vill	montgomery vill md
1	8	73
montgomery villag md	monticello	monticello ut
43	1	1
montoursville pa	monument co	moon twp pa
1	1	1
moorestown	moorestown nj	mooresville nc
1	7	4
mooresville nj	moose wy	morgantown
1	1	1
morgantown pa	morgantown wv	morganville nj
2	19	1
morocco	morris plains nj	morristown nj
3	3	8
morrisville nc	morrisville pa	morton grove il
7	2	1
moscow id	moscow pa	moseley va
1	2	2

Cherry Blossom Race Times

moun airy md	mount air va	mount airy
1	4	6
mount airy md	mount holly	mount holly nc
51	1	4
mount holy nj	mount joy	mount joy pa
1	1	4
mount kisco ny	mount laurel nj	mount pleasant sc
5	9	1
mount rainier md	mount royal nj	mount vernon wa
7	1	1
mountain lakes nj	mountain top pa	mountain view
1	1	1
mountain view ca	mountainside nj	mountaintop ma
3	2	1
mountaintop pa	mountville pa	mt airy
6	6	4
mt airy md	mt holly nj	mt jackson
17	2	1
mt jackson va	mt joy pa	mt kisco ny
2	5	1
mt laurel nj	mt royal, nj 0806 nj	mt. airy md
3	1	10
mt. airy, md	mt. gilead oh	mt. holly pa
1	1	1
mt. jackson va	mt. kisco ny	mt. rainer md
1	1	1
mt.rainier md	mullica hill nj	muncy pa
1	1	1
munich	murrells inlet sc	murrysville
1	1	1
murrysville pa	muttontown ny	my airy md
1	1	3
myerstown pa	myersville	myersville md
1	2	17
mystic ct	n andover ma	n babylon ny
4	2	1
n bellmore	n bellmore ny	n bethesda
1	1	5
n bethesda md	n huntingdon pa	n huntington pa
24	4	1
n potomac	n potomac md	n salt lake ut
1	20	2
n springfield va	n. bethesda md	n. huntingdon pa
1	11	1
n. potomac md	n.bethesda md	n.potomac md

11	1	2
nanuet	nanuet ny	napa ca
1	5	1
naperville il	naples fl	narberth pa
5	3	1
narragansett ri	naruto	nashua nh
2	2	8
nashville	nashville tn	natick ma
2	14	1
national harbor md	natrona heights pa	navarre fl
2	3	1
nazareth pa	ne va	neavitt md
5	1	1
needham ma	neeedham ma	neptune nj
4	1	1
neshanic statio nj	netrona heights pa	new baltimore
4	1	1
new baltimore va	new berlin pa	new berlin wi
2	1	1
new bern	new bern nc	new braunfels tx
3	7	1
new brighton mn	new brighton pa	new brunswick nj
1	1	4
new canaan	new canaan ct	new carrollton
2	11	1
new carrollton md	new city ny	new cumberland
2	1	1
new cumberland pa	new fairfield ct	new freedom pa
13	1	7
new harford	new hartford ny	new haven ct
1	3	9
new holland pa	new hope pa	new hyde park ny
1	4	4
new iberia la	new ipswich nh	new mark md
1	1	1
new market	new market md	new milford nj
4	45	5
new orleans la	new paltz	new paltz ny
3	2	2
new prague	new providence nj	new rochelle
1	2	1
new rochelle ny	new ulm mn	new windsor md
11	1	7
new windsor ny	new york	new york city ny
1	55	4

new york ny	new zealand	newark
717	1	2
newark de	newark nj	newark oh
29	1	1
newburgh ny	newbury park ca	newington ct
3	1	2
newington va	newmarket nh	newport beach ca
1	2	2
newport nc	newport news va	newport ny
1	40	1
newport ri	newport tn	newton il
6	2	2
newton ma	newton nc	newton nj
8	1	2
newton pa	newton va	newtown
1	1	1
newtown ct	newtown pa	newtown square
2	1	1
newtown square pa	newyorkcity ny	niagara-on-the- on
5	1	2
niantic ct	niceville fl	niskayuna ny
1	2	1
no. chelmsford ma	no. potomac md	nokesville
1	1	1
nokesville va	norcross ga	norfolk
19	4	2
norfolk ma	norfolk va	norman
1	50	1
norman ok	norristown pa	nort potomac md
1	8	1
north andover ma	north attleboro ma	north babylon ny
2	1	1
north beach	north beach md	north bellmore ny
1	6	1
north bergen nj	north berwick me	north bethesda
2	1	4
north bethesda md	north branford ct	north canton
68	1	1
north canton oh	north east md	north falmouth ma
2	4	2
north haledon nj	north haven ct	north huntingdo pa
1	4	3
north las vegas nv	north olmsted oh	north palm beac fl
1	2	1
north potomac	north potomac md	north salt lake ut

Cherry Blossom Race Times

7	78	1
north springfie va	north tonawanda ny	north wales pa
1	2	10
north yarmouth	northampton ma	northborough ma
2	1	3
northbrook il	northeast harbo me	northfield il
2	1	1
northfield mn	northfield nj	northport
1	4	1
northport ny	northville mi	norton va
2	1	1
norwalk	norwalk ct	norway
1	9	1
norwell ma	not published md	nottingham
2	1	2
nottingham md	novi mi	nutley nj
5	2	1
ny ny	nyc ny	o'fallon il
11	3	1
oak hill	oak hill va	oak hlil va
13	204	1
oak park	oak ridge nj	oakdale
1	1	1
oakdale ny	oakdale pa	oakfield ny
6	2	1
oakhurst nj	oakland	oakland ca
1	2	3
oakland md	oakmont	oakmont pa
1	1	6
oakton	oakton va	occoquan va
25	304	3
ocean city	ocean city md	ocean nj
1	3	5
ocean view	ocean view de	oceanport nj
1	1	5
oceanside ca	oceanside ny	odenton
1	1	11
odenton md	odessa	odessa fl
65	1	4
odon in	okate sc	okatie sc
1	1	2
oklahoma city	oklahoma city ok	olathe
1	2	1
olathe ks	old bethpage ny	old bridge nj
5	1	1

old greenwich ct	old lyme ct	old saybrook
2	1	1
old tappan nj	oldsmar fl	oley pa
1	2	2
olney	olney md	olympia wa
23	178	1
omaha	omaha ne	onalaska wi
1	20	1
oneida ny	oneonta ny	onley md
1	3	1
oradell nj	orange park fl	orange va
2	1	1
orchard park	orchard park ny	oreland pa
1	4	2
orem ut	orlando	orlando fl
1	1	12
orlando ok	orlean va	ormond beach fl
1	2	1
oro valley az	orrtanna	orrtanna pa
1	1	8
oshkosh wi	oskaloosa ia	ossining ny
1	1	4
oswego ny	ottawa il	ottawa on
4	1	1
overland park	overland park ks	oviedo
2	10	2
oviedo fl	owego ny	owing mills
3	3	1
owing mills md	owings	owings md
11	1	21
owings mill md	owings mills	owings mills md
1	8	86
oxford	oxford mi	oxford ms
1	1	1
oxford pa	oxon hill md	oyster bay ny
1	9	1
pacific palisad ca	pacific palisades ca	paeonian spring va
1	1	4
pahokee fl	painesville oh	palatine il
1	1	2
palisades ny	palm beach gard fl	palm beach gdns fl
1	1	1
palm harbor fl	palmetto fl	palmyra
3	1	1
palmyra pa	palmyra wi	palo alto ca

Cherry Blossom Race Times

	3		1		2
panama city beach fl		paoli		paoli pa	
	2		1		13
park hall md		parker co		parkersburg	
	1		2		4
parkersburg wv		parkland fl		parkton	
	27		1		1
parkton md		parkville		parkville md	
	9		2		15
parma oh		parsippany nj		pasadena	
	3		2		4
pasadena md		patuxent river md		pavilion ny	
	47		11		1
pawleys island sc		pawling ny		pawnee il	
	1		1		2
peabody ma		peachtree city ga		pearl city hi	
	1		9		1
pearl river ny		peckville pa		peekskill ny	
	7		2		3
pelham manor ny		pelham ny		pembroke va	
	1		2		1
pembrokepines fl		pen argyl pa		penfield	
	1		1		1
penfield ny		penn laird va		penn valley pa	
	1		1		1
pennellville ny		pennington		pennington nj	
	1		2		13
pennsburg pa		pennsville nj		peoria il	
	1		1		2
peosta ia		pequea pa		per	
	1		2		1
perkasie pa		perkiomenville pa		perry hall md	
	2		2		8
perryopolis pa		perryville md		petersburg tn	
	1		1		1
petersburg va		pgh pa		phila pa	
	3		1		5
philadelpha pa		philadelphia		philadelphia me	
	1		13		1
philadelphia pa		philadelphia. pa		philippi wv	
	256		1		2
philipsburg pa		phillipsburg nj		philomont va	
	3		1		3
phoenix		phoenix az		phoenix md	
	3		12		20

Cherry Blossom Race Times

phoenixville pa 13	pickerington oh 2	piedmont sc 1
pikesville 6	pikesville md 16	pilesgrove nj 1
pinckneyville il 1	pine beach nj 2	pine hill nj 2
pinellas park fl 2	pipestone mn 1	piqua oh 2
piscataway nj 1	pitman nj 1	pittsboro nc 1
pittsburg pa 2	pittsburgh 10	pittsburgh pa 137
pittsburgh,pa. pa 1	pittsburgh. pa 1	pittsfield ma 1
pittsford 1	pittsford ny 4	pittsgrove nj 1
pittsville md 1	plainfield in 1	plainfield nj 1
plainsboro 1	plainsboro nj 10	plainview ny 1
plainwell mi 1	plaistow nh 1	plano 1
plano tx 2	plant city fl 1	plantation fl 2
plattsburgh ny 1	pleasant prairie wi 2	pleasant valley ny 2
pleasantville ny 2	plum pa 1	plymouth ma 1
plymouth meetin pa 2	plymouth meeting pa 3	plymouth mi 1
plymouth mn 4	point of rocks md 2	point pleasant 1
point pleasant be nj 1	point pleasant nj 3	poland oh 2
pomfret md 5	pomona ny 1	pompey ny 1
ponte vedra bea fl 1	ponte vedra fl 1	pontiac il 1
poolesville 1	poolesville md 22	poollesville 1
poollesville md 2	poquoson va 3	port chester ny 1
port clinton oh 1	port hueneme ca 2	port huron mi 1
port jervis ny	port matilda pa	port republic md

	3		7		3
port republic nj		port tobacco md		port washington	
	1		7		1
port washington ny		port washington wi		portage mi	
	10		1		1
portland me		portland or		portsmouth nh	
	6		7		6
portsmouth ri		portsmouth va		potmac falls va	
	2		5		1
potomac		potomac dc		potomac falls	
	76		1		6
potomac falls md		potomac falls va		potomac md	
	1		106		800
potomac me		potomc md		pottstown pa	
	1		1		12
poughkeepsie ny		poughquag ny		powell oh	
	2		1		2
powhatan va		pr. frederick md		prattville al	
	3		3		1
presto pa		prestonburg ky		prestonsburg	
	1		1		1
prestonsburg ky		prince frederic md		princeton	
	1		6		4
princeton jct		princeton jct nj		princeton jct. nj	
	1		8		1
princeton junct		princeton junct nj		princeton junctio nj	
	1		2		1
princeton ma		princeton nj		princeton wv	
	3		28		2
prospect park pa		providence forg va		providence ri	
	2		2		9
pt pleasant bea nj		pt republic md		pt washington ny	
	1		1		1
pueblo west co		pulaski va		punxsutawney pa	
	2		1		1
purcellvill va		purcellville va		purceville va	
	1		41		1
putnam valley ny		quakertown pa		quantico	
	1		1		1
quantico va		quarryville pa		quebradillas pr	
	14		2		1
queensbury ny		queenstown md		quincy	
	1		4		1
quincy ma		quincy pa		quincy wa	
	6		4		1

radnor pa	raeford nc	rahway nj
5	3	4
railroad pa	raleigh	raleigh nc
3	1	59
ramsey nj	rancho cucamong ca	rancho santa fe ca
2	4	3
randallstown	randallstown md	randalstown md
1	9	2
randolph nj	randolph vt	rapid city sd
2	1	2
ravena	ravenna oh	raymond nh
1	4	1
reading	reading ma	reading pa
1	2	5
red bank nj	red lion pa	red oak tx
4	3	1
redondo beach ca	redwood city ca	rego park ny
1	1	1
rehobeth beach de	rehoboth beach de	rehoboth de
2	20	7
rehoboth ma	reisterstown	reisterstown md
1	8	80
reistertown md	reliance dc	reliance va
1	1	2
relince va	renfrew pa	reno nv
1	4	1
rensselaer ny	republic pa	resiterstown md
4	1	1
reson va	reston	reston va
1	71	830
rhinecliff ny	richardson tx	richboro pa
2	2	5
richland mi	richlands va	richmond
1	1	12
richmond hill ga	richmond hill ny	richmond ky
4	1	1
richmond mi	richmond ri	richmond va
1	1	209
richmond vt	richmondhill ny	riderwood md
1	1	1
ridge	ridge md	ridgefield
1	8	1
ridgefield cn	ridgefield ct	ridgefield wa
1	5	1
ridgeland ms	ridgewood	ridgewood nj

1	1	8
ridgewood ny	ridley park pa	rising sun md
2	2	1
riva	riva md	river edge nj
1	10	1
river falls wi	riverdale	riverdale md
1	2	23
riverdale park md	riverhead ny	riverview fl
1	1	1
rixeyville va	rlington va	road va
4	1	1
roanoke	roanoke va	roaring brook pa
5	14	1
robbinsville nj	rocheser mn	rochester
4	1	3
rochester hills	rochester hills mi	rochester mi
1	1	2
rochester mn	rochester ny	rochester qn
10	40	1
rochester vt	rock hall md	rock port mo
3	1	3
rockaway nj	rockaway park ny	rockford il
1	2	1
rockledge fl	rockvile md	rockville
1	1	115
rockville centr ny	rockville centre ny	rockville lm
3	1	1
rockville md	rockvlle md	rockwall tx
1253	1	1
rocky hill ct	rocky river	rocky river oh
3	1	2
rocvkille md	rogers ar	rogers mn
3	1	1
rogersville tn	rollinsford nj	ronceverte
1	1	1
ronceverte wv	rosedale md	roseland nj
8	5	1
rosemont md	rosemont pa	rosendale ny
1	6	2
roseto pa	rosslyn va	roswell ga
1	2	5
rougemont nc	round hill va	round rock tx
1	15	1
rowayton ct	rowlett tx	royal oak mi
1	1	1

Cherry Blossom Race Times

royersford pa	ruckersville va	rumson nj
3	4	2
rural hall nc	rus	russia
1	1	3
russia oh	ruther glen va	rutherford nj
2	1	1
rutland ma	rutledge pa	ruxton
1	1	1
ruxton md	s boston ma	s burlington vt
6	1	1
s dartmouth ma	s riding va	s va
1	8	1
sabillasville md	sacramento ca	saddle brook nj
3	1	1
saint charles il	saint germain	saint germain wi
1	1	5
saint germain wy	saint james md	saint james ny
1	1	3
saint joseph mi	saint leonard md	saint louis mo
1	6	3
saint paul	saint paul mn	saint petersburg fl
1	1	1
salem ct	salem ma	salem va
1	1	1
salineville	salineville oh	salisbury
2	20	11
salisbury md	salisbury nc	salt lake city
106	2	1
salt lake city ut	salt lake ut	salt point ny
5	1	1
saltillo	sammamish	san angelo tx
1	1	1
san antonio	san antonio tx	san diego
1	17	1
san diego ca	san dimas ca	san francisco
17	1	2
san francisco ca	san fransisco ca	san jose ca
37	2	2
san juan pr	san luis obispo ca	san marino ca
1	2	1
san tan valley az	sandusky oh	sandwich
1	2	1
sandy hook va	sandy spring md	sandy ut
3	9	2
sanford fl	sanger tx	santa ana

1	1	1
santa ana ca	santa barbara ca	santa clara ca
1	3	1
santa fe	santa fe nm	santa maria ca
1	3	2
santa monica ca	saratoga spring ny	sardis ms
2	1	1
sartell mn	saskatoon sa	satellite beach fl
1	1	1
savage	savage md	savannah ga
1	7	7
saxtons river vt	sayerville nj	saylorsburg pa
1	1	3
sayre pa	sayreville nj	sayville ny
1	2	2
scaggsville md	scarboroontario	scarborough me
9	1	4
scarsdale ny	scenery hill pa	schenectady
3	1	1
schenectady ny	schuylkill hvn pa	scituate ma
15	1	4
sco	scotch plains nj	scotia ny
1	1	3
scott afb il	scott depot wv	scottsdale az
1	1	6
scranton pa	sea cliff ny	sea girt nj
3	1	2
seabright nj	seabrook	seabrook md
1	1	3
seaford ny	seattle	seattle wa
4	1	20
sebring fl	secaucus nj	selbyville de
1	1	1
selden ny	selfridge angb mi	selinsgrove pa
2	1	2
seven valleys pa	severn	severn md
4	3	57
severna park	severna park md	seville oh
4	107	1
sewell nj	sewickley	sewickley pa
3	1	6
seymour ct	seymour in	shady side md
1	2	3
shadyside md	shaker heights oh	shalimar fl
1	4	1

Cherry Blossom Race Times

shamong nj	sharpsburg	sharpsburg md
2	1	9
sharpsburg pa	shavertown pa	shawnee
1	1	3
shawnee ks	shelburne nh	shelburne vt
5	1	1
shelby twp mi	shellington pa	shelton ct
2	1	3
shenadoah junct wv	shenandoah junc wv	shenandoah juncti wv
1	7	3
shepherdstown wv	sherborn ma	sherman dale pa
1	5	1
sherman oaks ca	sherrill ny	sherwood ar
1	1	1
sherwood md	shillington	shillington pa
1	1	12
shiloh il	shohola pa	shorewood wi
2	2	2
short hills nj	short hills` nj	shreveport la
3	1	4
shrewbury pa	shrewsbury	shrewsbury nj
1	1	1
shrewsbury pa	sicklerville nj	sierra vista az
5	6	2
signal mountain tn	siler city nc	siliver spring md
1	1	1
silve spring md	silver md	silver sping md
1	1	1
silver spring	silver spring dc	silver spring ma
136	4	1
silver spring md	silver springs md	silver sprng md
1653	1	1
silverspring md	simpsonville sc	simsbury ct
2	1	1
sinking spring pa	sioux falls sd	skaneateles
5	1	1
sleepy hollow ny	slovenia	smith's parish
3	1	1
smith town ny	smithfield	smithsburg md
1	1	3
smithtown ny	smyrna de	smyrna ga
10	2	1
sneads ferry	sneads ferry nc	snow hill md
1	1	3
so. plainfield nj	solomons island md	solomons md

Cherry Blossom Race Times

Location	Count	Location	Count	Location	Count
solon oh	1	somerset	1	somerset nj	6
somerville ma	2	somerville nj	1	sound beach ny	12
south bend in	22	south boston	4	south boston ma	1
south boston va	11	south bound brook nj	1	south charlesto wv	1
south charleston wv	2	south dennis nj	2	south glens fal ny	1
south hadley	4	south hadley ma	2	south hamilton ma	2
south huntington ny	1	south lake taho ca	1	south meriden ct	1
south mills nc	3	south orange	2	south orange nj	1
south riding	1	south riding va	1	south river	7
south river nj	19	south weymouth ma	154	southboro ma	1
southbridge va	4	southbury	1	southbury ct	1
southern pines	1	southfield mi	1	southgate ky	1
southport	1	southport ct	1	southriding va	1
sparks	1	sparks glencoe md	3	sparks md	1
sparks nv	1	sparrows point md	20	sparta nj	1
spartanburg sc	1	spencerport ny	1	spencerville md	8
sperryville va	2	spingfield va	1	spokane wa	3
sporingfield va	1	spotsylvania	1	spotsylvania va	5
sprindale md	1	sprinfield va	1	spring grove il	19
spring grove pa	1	spring lake hts nj	1	spring lake nc	1
spring lake nj	2	spring run pa	2	spring tx	1
springboro oh	7	springdale md	1	springfield	4
	2		5		84

springfield dr va	springfield nj	springfield oh
1	3	1
springfield pa	springfield va	springfield vt
6	851	1
springfield wa	springfiled va	sprngfield va
1	4	1
st albans ny	st augustine fl	st charles il
1	3	2
st clair mi	st davids pa	st germain wi
1	1	2
st inigoes md	st james	st james md
3	1	1
st james ny	st joseph mi	st leonard
1	1	1
st leonard md	st louis	st louis mo
6	2	4
st mary's city md	st petersburg fl	st. albans wv
1	21	1
st. augustine fl	st. bonifacius mn	st. charles mo
2	1	1
st. germain wi	st. inigoes md	st. leonard
1	1	1
st. leonard md	st. louis mo	st. louis park mn
1	4	2
st. marys ga	st. paul mn	st. petersburg fl
1	1	4
st.louis mo	stafford	stafford va
1	22	169
stamford ct	stanaford wv	stanardsville va
26	1	1
stanford ca	star lake ny	state college
2	1	1
state college pa	staten island	staten island ny
55	1	17
statesville nc	staunton va	ste 150-119 dc
1	3	1
stephens city va	stephenson va	sterling
33	1	30
sterling ma	sterling va	sterling va va
1	353	1
sterrett al	stevenson	stevenson md
1	1	1
stevensville	stevensville md	stevensville, md
1	15	1
stewartstown pa	stewartsville nj	stillwater pa

	1		2		1
stirling nj	1	stockbridge ga	1	stockton	1
stockton nj	3	stone ridge	2	stone ridge ny	3
stone ridge va	6	stoneham ma	1	stony brook	1
stony brook ny	1	storrs ct	1	stoughton ma	1
stoughton wi	6	stow	1	stow oh	2
stowe vt	1	strafford pa	6	strasburg pa	2
strasburg va	2	stratford ct	1	street md	2
strongsville oh	4	stuart va	1	stuarts draft va	1
succasunna nj	1	sudbury ma	5	suffern ny	2
suffolk	1	suffolk va	8	sugar grove pa	1
sugar land tx	1	sugar loaf ny	1	suite 30 md	1
suite 500 dc	1	suitland md	5	summerfield fl	7
summerville sc	1	summit nj	3	sumter sc	1
sunderland	1	sunderland md	4	sunny isles beach fl	1
sunnyside ny	7	sunnyvale ca	1	sunriver or	1
superior co	1	sutton ma	3	suwanee ga	1
swampscott ma	3	swansea il	1	swansea ma	1
swanton md	3	swanton oh	1	swarthmore	1
swarthmore pa	7	swedesboro nj	1	sykesville	2
sykesville md	40	sylvania	2	sylvania oh	3
syracuse	1	syracuse ny	19	takkoma park md	1
takoma park	17	takoma park md	166	talcott wv	1

Cherry Blossom Race Times

tall timbers md	tallahassee fl	tallmadge oh
4	8	1
tamaqua pa	tampa	tampa fl
2	2	20
taneytown md	tanzania	tappahannock va
4	1	2
tappan ny	taylor mi	teaneck
1	1	1
teaneck nj	tempe az	temple hills dc
1	3	1
temple hills md	temple terrace fl	tenafly nj
14	1	1
tewksbury ma	the plains	the plains va
1	2	7
the villages fl	the woodlands	the woodlands tx
2	1	4
thiells ny	thomasville nc	thompson ridge ny
1	3	2
thornton co	thornton pa	thornwood ny
3	2	1
thorofare nj	thurmont	thurmont md
2	1	12
tidewater md	tilghman island md	tilghman md
1	3	2
tillson ny	timonium	timonium md
4	5	71
tinton falls nj	titusville fl	titusville pa
3	2	1
toano va	toledo oh	tolland
1	2	1
tolland ct	toms river	toms river nj
3	2	18
tonawanda ny	topeka ks	topsail beach
2	1	1
topsail beach nc	topsham	topsham me
1	1	1
topton pa	toronto	torrance ca
1	1	3
torrington ct	townsend ma	towson
3	1	13
towson md	trappe pa	trenton mi
105	1	1
trenton nj	triangle	triangle va
3	1	15
trout run pa	troutville va	troy mi

1	3	2
troy ny	tuckahoe ny	tucson az
1	2	3
tully ny	tulsa	tulsa ok
4	1	4
tunkhannock pa	turnersville nj	tuscaloosa al
1	8	1
tustin ca	twinsburg oh	uhwiesen
1	4	1
union bridge md	union city nj	union nj
1	1	2
uniontown	uniontown pa	unionville pa
2	21	1
unit 202 md	unit 421 va	unit c dc
1	1	1
unit d wa	united states	university height oh
1	7	1
university park	university park md	unknown
3	46	2
upper darby pa	upper marlboro	upper marlboro md
2	9	115
upper marobor md	upper montclair nj	upper saddle rive nj
1	2	1
upperco md	uppermarlboro md	upton ma
4	1	1
urbana	urbana il	urbana md
1	2	14
urbandale ia	uruguay	us
1	1	1
usa	utica ny	va beach va
6	5	3
va. beach va	vacaville ca	vail co
1	2	1
valatie ny	valencia ca	valley forge pa
3	2	1
valley stream	valley stream ny	valparaiso fl
1	6	1
valparaiso in	vancouver bc	vauxhall nj
2	1	2
venetia pa	venice ca	ventura ca
1	1	1
vergennes vt	vermilion oh	vernon ct
1	1	8
vero beach fl	verona nj	verona wi
5	2	1

vestal ny	vestavia hills al	victor ny
5	2	1
vienn va	vienna	vienna a
1	89	1
vienna oh	vienna va	vienna wv
3	1004	2
vienne va	viewtown va	villa rica ga
1	2	3
villanova	villanova pa	villas nj
1	7	1
vincentown nj	vineland nj	vinton va
1	4	1
virginia beach	virginia beach va	viuenna va
5	77	1
voorhees nj	w barnstable ma	w chester pa
7	2	1
w conshohocken	w covina ca	w dc
1	1	1
w friendship md	w hartford ct	w hartford ct ct
1	1	2
w newbury ma	w newton pa	w rupert vt
1	2	1
w. hartford ct ct	w. hyattsville md	waban ma
1	1	3
wadsworth oh	wahington dc	wahoo ne
1	3	1
wahsington dc	wake forest nc	wakefield ma
1	10	2
waldorf	waldorf md	waldrof md
21	143	1
waldwick nj	walkersville md	wallingford ct
1	7	6
wallingford pa	walnutport pa	walpole ma
7	1	1
waltham ma	wantagh ny	wappingers fall
6	2	1
wappingers fall ny	wappingers falls ny	waretown nj
1	4	1
warminster	warminster pa	warner robins ga
1	2	1
warren mi	warren nj	warren oh
2	2	1
warrenton	warrenton va	warreton va
11	140	1
warrington	warrington pa	warrrenton va

1	7	2
warsaw in	warwick ny	warwick ri
1	5	3
wash dc	wash. dc	washgington dc
2	1	1
washhington dc	washignton dc	washigton dc
1	7	2
washing	washingon dc	washingotn dc
1	5	3
washingt dc	washingtin dc	washingtion dc
1	1	1
washingto dc	washington	washington al
1	937	1
washington ave dc	washington ca	washington co
1	1	1
washington court oh	washington ct	washington d.c. dc
1	4	5
washington d.c. md	washington dc	washington dc co
1	11522	1
washington dc dc	washington dc md	washington dc wa
77	1	1
washington de	washington fl	washington ga
3	1	1
washington grove md	washington ia	washington ma
3	1	1
washington me	washington mo	washington nh
3	1	1
washington nj	washington nw dc	washington ny
6	1	1
washington ri	washington twp mi	washington va
1	2	3
washington vt	washington wi	washington wv
2	1	1
washington, d.c. dc	washington, dc	washington, dc dc
6	2	19
washingtondc dc	washingtonville ny	washintgon dc
1	1	1
washinton dc	washngton dc	washtington dc
5	1	1
wasington	wasington dc	watchung nj
1	7	1
waterbury ct	waterford pa	waterford va
1	1	8
watertown	watertown ct	watertown ma
1	6	4

Cherry Blossom Race Times

watertown ny	waukesha wi	wauseon oh
3	3	1
waverly ia	waxhaw nc	wayne nj
1	1	5
wayne pa	waynesboro pa	waynesboro va
22	14	3
waynsboro pa	wayzata mn	weatherly pa
1	1	1
webster ma	webster ny	weehawken nj
1	2	5
weems va	welcome md	wellesley hills ma
1	3	1
wellington	wellsboro	wendell nc
1	1	1
wenham ma	wernersville pa	wernesville
1	4	1
wernesville pa	wesley chapel fl	west allenhurst nj
1	2	1
west barnstable ma	west bend wi	west bloomfield mi
1	3	1
west brookfield ma	west caldwell nj	west chester
1	1	1
west chester pa	west conshohock pa	west deptford nj
30	3	1
west des moines	west dundee	west dundee il
1	2	4
west end nc	west friendship	west friendship md
1	1	7
west grove pa	west hartford	west hartford ct
1	4	21
west hempstead ny	west hollywood ca	west islip ny
1	1	3
west jefferson oh	west lafayette in	west lawn pa
1	2	6
west lebanon nh	west long branc nj	west melbourne fl
1	1	1
west milton oh	west new york nj	west newton
2	4	1
west newton pa	west nyack ny	west orange nj
15	1	2
west palm beach fl	west point ny	west port ct
5	6	1
west river	west river md	west roxbury ma
2	8	4
west sayville ny	west seneca ny	west springfiel

1	3	1
west springfiel ma	west springfield ma	west stockholm
4	3	1
west stockholm ny	west trenton nj	west windsor nj
2	1	4
westbrook	westbrook ct	westbury ny
1	5	2
westchester	westchester il	westerville oh
1	6	2
westfield	westfield ma	westfield nj
2	2	4
westford ma	westlake oh	westland mi
1	4	2
westminister md	westminster	westminster co
1	2	1
westminster md	westmont nj	weston
61	4	3
weston ct	weston fl	weston ma
10	1	1
westport ct	westtown pa	westwood ma
10	1	3
westwood nj	wethersfield ct	wetumpka al
3	4	1
wexford pa	weyers cave va	weymouth
8	1	1
weymouth ma	wheat ridge co	wheaton
1	1	8
wheaton il	wheaton md	wheeling wv
2	79	2
whispering pine nc	white hall md	white oak pa
1	4	1
white plains	white plains md	white plains ny
2	27	10
white post va	white river jun	whitefish bay wi
3	1	1
whitehall pa	whitehouse stat nj	whitehouse statio nj
1	3	1
whitestone	whitestone ny	whitten
1	2	1
whitten ia	wichita ks	wilber ne
7	2	1
wilder ky	wildwood mo	wilkes-barre pa
1	1	6
wilkes barre pa	willamstown ma	williamsburg
6	1	3

williamsburg va 29	williamsport 1	williamsport md 10
williamsport pa 1	williamston mi 1	williamstown 1
williamstown ma 2	williamstown nj 2	williamsubrg va 1
williamsville ny 3	williston 1	williston park 1
williston vt 8	willoughby oh 1	willow grove pa 2
willow spring nc 2	willowbrook il 3	wilm de 1
wilmette il 3	wilmington 6	wilmington de 70
wilmington ma 1	wilmington nc 13	wilton me 1
winchester 9	winchester ky 1	winchester va 79
windemere fl 1	windermere fl 1	windsor ct 2
windsor mill md 2	winnipeg ct. va 1	winston-salem nc 19
winston salem 5	winston salem nc 5	winter garden fl 1
winter park fl 3	winter springs fl 3	winthrop ma 1
woburn ma 1	wolverine lake mi 1	wolverton 1
wolverton mn 1	woodbine md 18	woodbridg va 1
woodbridge 44	woodbridge ct 1	woodbridge va 601
woodbury heights nj 1	woodbury nj 1	woodbury ny 1
woodlands tx 1	woodlawn va 1	woodridge il 1
woodsboro md 1	woodside ca 1	woodside ny 1
woodstock 2	woodstock ga 2	woodstock md 17
woodstock va 3	woodstrock va 1	woonsocket ri 1
wooster oh 1	worcester ma 2	worcester pa 2
worthington mn	worthington oh	wrightsville be nc

```
                   1                       4                       1 
wrightsville beac nc         wrightsville pa            wshington dc 
                   2                       4                       2 
        wurtsboro ny             wyckoff nj              wyncote pa 
                   1                       1                       1 
         wyndmoor pa           wynnewood pa                 wyoming 
                   3                      10                       1 
          wyoming pa              wyomissing           wyomissing pa 
                   1                       1                      17 
       wyonissing pa            yacaville ca            yalesville ct 
                   1                       1                       1 
          yardley pa               yardville             yardville nj 
                   7                       1                       2 
         yarmouth me                 yonkers              yonkers ny 
                   1                       1                       8 
                york           york harbor me                york pa 
                   5                       1                      49 
     york springs pa                yorktown     yorktown heights ny 
                   2                       1                       2 
         yorktown ny             yorktown va            yorkville ny 
                   2                      26                       1 
       youngstown oh            ypsilanti mi           yugoslavia nm 
                   2                       1                       1 
        zanesville oh           zephyrhills fl               zionsville 
                   2                       1                       2 
       zionsville in 
                   5 
```

```r
table(table(homeClean))
```

```
   1    2    3    4    5    6    7    8    9   10   11   12   13 
2053  607  320  191  110   85   72   52   43   36   33   19   20 
  14   15   16   17   18   19   20   21   22   23   24   25   26 
  18   18    6   12   11   11   12   11   11    5    8    6    9 
  27   28   29   30   31   32   33   34   35   36   37   38   39 
   7    6    5    5    6    2    3    4    1    2    2    1    2 
  40   41   43   44   45   46   47   48   49   50   51   52   53 
   6    2    2    2    3    5    1    1    2    2    1    1    2 
  54   55   57   58   59   61   62   63   65   68   70   71   73 
   3    3    2    3    2    1    1    2    3    1    3    3    1 
  74   75   76   77   78   79   80   84   85   86   87   88   89 
   3    1    1    2    1    3    3    1    1    2    1    1    2 
  96  104  105  106  107  108  111  113  115  118  120  121  122 
   1    1    1    2    1    1    1    1    2    1    1    1    1 
 128  136  137  140  143  151  152  154  156  166  168  169  178 
```

```
     1      1      1      1      2      1      1      2      1      1      1      1      1
   204    207    208    209    211    233    244    252    256    279    298    303    304
     1      1      1      1      1      1      1      1      1      1      1      1      1
   353    360    381    403    436    447    481    497    536    598    599    601    711
     1      1      1      1      1      1      1      1      1      1      1      1      1
   717    726    791    800    807    830    851    937   1004   1253   1293   1426   1574
     1      1      1      1      1      1      1      1      1      1      1      1      1
  1607   1653   4004   6871  11522
     1      1      1      1      1
```

```r
cbMenSub$homeClean <- homeClean
```

```r
vars <- c("year", "homeClean", "nameClean", "yob", "runTime")
mb <- which(nameClean == "michael brown")
birthOrder <- order(cbMenSub$yob[mb])
cbMenSub[mb[birthOrder], vars]
```

```
              year        homeClean       nameClean  yob    runTime
2000.2514 2000        tucson az michael brown 1939   96.88333
2010.4230 2010  north east md michael brown 1953   92.26667
2011.3025 2011  north east md michael brown 1953   85.95000
2012.3800 2012  north east md michael brown 1953   88.43333
2009.5237 2009        oakton va michael brown 1957   99.73333
2008.3895 2008      ashburn va michael brown 1958   93.73333
2009.3500 2009      ashburn va michael brown 1958   88.56667
2010.5298 2010      ashburn va michael brown 1958   99.75000
2012.4078 2012       reston va michael brown 1958   89.95000
2006.2625 2006     chevy chase michael brown 1966   84.56667
2010.1896 2010 chevy chase md michael brown 1966   79.35000
2012.5089 2012 chevy chase md michael brown 1966   95.81667
2004.998  2004   berryville va michael brown 1978   76.31667
2008.2501 2008    arlington va michael brown 1984   84.68333
2010.6296 2010     new york ny michael brown 1984  110.88333
2011.2273 2011    arlington va michael brown 1984   81.70000
2012.881  2012    arlington va michael brown 1984   70.93333
2012.3084 2012      clifton va michael brown 1988   84.88333
```

```r
cbMenSub$ID = paste(nameClean, cbMenSub$yob, sep = "_")

races <- tapply(cbMenSub$year, cbMenSub$ID, length)

races8 <- names(races)[which(races >= 8)]

men8 <- cbMenSub[ cbMenSub$ID %in% races8, ]

orderByRunner <- order(men8$ID, men8$year)
```

```
men8 <- men8[orderByRunner, ]
```

```
men8L <- split(men8, men8$ID)
names(men8L)
```

```
 [1] "aaron glahe_1974"          "abiy zewde_1967"
 [3] "adam bain_1962"            "adam hughes_1978"
 [5] "adam knapp_1977"           "adam stolzberg_1976"
 [7] "al navidi_1960"            "alan kraut_1951"
 [9] "alan pemberton_1953"       "alan rider_1936"
[11] "alan stiffler_1962"        "alexander packard_1970"
[13] "alfred del grosso_1954"    "allan arbogast_1956"
[15] "allen greenberg_1966"      "alvin white_1956"
[17] "amir alibabaie_1962"       "andrew aitken_1962"
[19] "andrew bernstein_1973"     "andrew klemas_1964"
[21] "andrew mclaren_1949"       "andrew polott_1956"
[23] "anthony flowe_1958"        "arthur scott_1960"
[25] "arya akmal_1968"           "augustine paik_1955"
[27] "bailey st clair_1939"      "barry bupp_1948"
[29] "barry goldmeier_1965"      "barry goldsmith_1950"
[31] "barry smith_1953"          "barton bland_1970"
[33] "benjamin richter_1957"     "bennett beach_1950"
[35] "bernard kelly_1956"        "bill maccormack_1943"
[37] "bill rodgers_1948"         "bill sollers_1940"
[39] "bill vesey_1949"           "bob brammer_1953"
[41] "bob kramer_1950"           "brad seibert_1957"
[43] "brandon dubois_1966"       "brian byrne_1948"
[45] "brian carroll_1956"        "brian chabot_1965"
[47] "brian kass_1969"           "brian lane_1975"
[49] "brian murphy_1953"         "brian robertson_1950"
[51] "bruce kirch_1960"          "bruce whitson_1946"
[53] "carl ek_1948"              "carl lay_1944"
[55] "charles banks_1961"        "charles both_1944"
[57] "charles clark_1936"        "charles crout_1967"
[59] "charles divan_1951"        "charles sardo_1954"
[61] "charles taylor_1947"       "charlie sole_1946"
[63] "chris ebert_1957"          "chris quasebarth_1960"
[65] "chris riley_1944"          "chris sega_1955"
[67] "christian arriola_1976"    "christoph duenwald_1966"
[69] "christopher jones_1973"    "christopher miller_1973"
[71] "christopher sten_1944"     "chuck naegeli_1949"
[73] "clinton schmitt_1957"      "colm dunne_1974"
[75] "craig berkey_1968"         "craig witmer_1961"
[77] "curt allen_1957"           "curtis dalton_1952"
```

Cherry Blossom Race Times

```
 [79] "dale anderson_1975"        "dale jordan_1953"
 [81] "dale learn_1970"           "dallas harrison_1966"
 [83] "daniel barton_1979"        "daniel keany_1956"
 [85] "daryl deprenger_1950"      "daryl knuth_1956"
 [87] "david andrews_1957"        "david cascio_1963"
 [89] "david chernicky_1952"      "david downin_1946"
 [91] "david farrisee_1957"       "david fleming_1954"
 [93] "david gearin_1945"         "david lambert_1960"
 [95] "david landau_1956"         "david mead_1969"
 [97] "david pearson_1961"        "david phillips_1970"
 [99] "david poole_1968"          "david sahnow_1963"
[101] "david walker_1944"         "david wiesenhahn_1962"
[103] "dean siedlecki_1957"       "dennis barr_1954"
[105] "dennis faust_1942"         "dennis loy_1950"
[107] "denny gainer_1952"         "desi alston_1953"
[109] "dick stark_1957"           "dick woods_1947"
[111] "dj waldow_1976"            "donald hensel_1945"
[113] "donald warren_1953"        "douglas dunlop_1954"
[115] "douglas edgecomb_1970"     "douglas klein_1959"
[117] "douglas lunenfeld_1971"    "dov lutzker_1971"
[119] "duane ingalsbe_1940"       "earle fingerhut_1943"
[121] "edward bacon_1954"         "edward green_1932"
[123] "edward hagarty_1955"       "edward hollander_1941"
[125] "edward jefferson_1934"     "edward kopeck_1947"
[127] "edward neighbour_1963"     "elliott hamilton_1961"
[129] "emmet davitt_1958"         "eric katkow_1945"
[131] "eric melby_1949"           "eric winslow_1966"
[133] "erik fatemi_1966"          "erin mccartney_1973"
[135] "eugene elrod_1950"         "eugene kenney_1947"
[137] "evan roberts_1971"         "forest sun_1955"
[139] "francisco cordova_1960"    "frank jankoski_1954"
[141] "frank manganiello_1946"    "frank myers_1962"
[143] "frank surface_1963"        "fred carson_1940"
[145] "gabriel gluck_1948"        "gary anderson_1953"
[147] "gary chidester_1948"       "gary kodeck_1952"
[149] "gary presuhn_1955"         "gene grady_1949"
[151] "george englert_1949"       "george poporad_1950"
[153] "george yannakakis_1932"    "gerald brown_1957"
[155] "gerald royce_1942"         "gerard lacourciere_1968"
[157] "gilbert macias_1955"       "glenn geelhoed_1942"
[159] "graham anderson_1964"      "grant stewart_1971"
[161] "gregg hinkle_1963"         "guillermo cabrera_1971"
[163] "gustavo olmedo_1958"       "hal danoff_1960"
[165] "harold rosen_1943"         "harrison grayson_1952"
[167] "houng soo_1950"            "howard scruggs_1959"
```

```
[169] "hunter montgomery_1969"    "ian heavers_1979"
[171] "ira leibowitz_1952"        "jack tosi_1960"
[173] "jaime salcedo_1953"        "james blackwood_1985"
[175] "james carey_1952"          "james christina_1958"
[177] "james ferguson_1967"       "james harden_1964"
[179] "james mcnabb_1966"         "james mort_1947"
[181] "james peischel_1967"       "james scarborough_1959"
[183] "james snee_1961"           "james trump_1956"
[185] "james weiss_1975"          "jamie hoag_1977"
[187] "jan cook_1965"             "jason tripp_1973"
[189] "jay jacob wind_1950"       "jeffrey allen_1962"
[191] "jeffrey gutman_1950"       "jeffrey kempic_1963"
[193] "jerry marty_1947"          "jim ashworth_1963"
[195] "jim bradford_1963"         "jim cavanaugh_1942"
[197] "jim doyle_1952"            "jim katzman_1967"
[199] "jim noone_1945"            "jim o'donnell_1964"
[201] "john baxter_1947"          "john beard_1960"
[203] "john dean_1945"            "john dix_1949"
[205] "john duda_1962"            "john faith_1949"
[207] "john flynn_1956"           "john haubert_1943"
[209] "john ianno_1956"           "john maclean_1953"
[211] "john mariani_1963"         "john mctyre_1954"
[213] "john miller_1954"          "john moeller_1958"
[215] "john pace_1965"            "john pappajohn_1964"
[217] "john sauer_1956"           "john solberg_1953"
[219] "john sonntag_1968"         "john stanmore_1963"
[221] "john thorsen_1936"         "john tobe_1961"
[223] "john wheatland_1949"       "john winkert_1957"
[225] "jon handel_1977"           "jon laurich_1949"
[227] "jon reinhard_1963"         "jon wolfsthal_1967"
[229] "jonathan agin_1972"        "jonathan mcmullen_1952"
[231] "jorge paredes_1967"        "joseph durso_1955"
[233] "joseph khalil_1966"        "joseph mccloskey_1947"
[235] "joseph mirarchi_1967"      "joseph valenza_1947"
[237] "joseph vida_1971"          "joseph white_1939"
[239] "julian angelone_1944"      "keith buell_1974"
[241] "ken buja_1964"             "ken krehbiel_1954"
[243] "ken landauer_1960"         "ken quincy_1938"
[245] "kenneth cockerill_1962"    "kenneth kelley_1939"
[247] "kenyon erickson_1954"      "kevin adams_1957"
[249] "kevin barrett_1959"        "kevin cassidy_1963"
[251] "kevin keany_1955"          "kevin kunkel_1972"
[253] "kevin mcmahon_1960"        "kevin moore_1973"
[255] "kevin tullier_1971"        "kevin walsh_1963"
[257] "kevin yates_1972"          "kurt landauer_1954"
```

```
[259] "kurt quasebarth_1963"      "kyle barton_1979"
[261] "larry denino_1961"         "lary larson_1955"
[263] "laszlo madaras_1962"       "lee youngblood_1955"
[265] "len doughty_1958"          "len gemma_1960"
[267] "leonard bechtel_1964"      "leonard lee_1966"
[269] "les graber_1962"           "les pang_1953"
[271] "lester brown_1934"         "lewis parker_1965"
[273] "loren bussert_1947"        "lou lodovico_1924"
[275] "louis demouy_1940"         "louis garczynski_1940"
[277] "luis amaya_1963"           "lyle jentzer_1953"
[279] "mac mcneil_1949"           "madis muller_1977"
[281] "malcolm poulin_1957"       "marc de angelis_1957"
[283] "marc gunther_1951"         "marc wolfson_1950"
[285] "mark davies_1970"          "mark fraley_1957"
[287] "mark freeman_1975"         "mark hoon_1965"
[289] "mark johnson_1963"         "mark kline_1952"
[291] "mark lin_1966"             "mark lippman_1962"
[293] "mark malander_1958"        "mark neff_1962"
[295] "mark palmer_1967"          "mark wisch_1959"
[297] "mark wolff_1961"           "martin mclean_1945"
[299] "marvin pace_1954"          "matthew chesnes_1979"
[301] "matthew gaertner_1974"     "matthew haskins_1968"
[303] "michael coffee_1972"       "michael davitt_1954"
[305] "michael dusenbery_1979"    "michael gadbaw_1948"
[307] "michael glikes_1968"       "michael glover_1961"
[309] "michael golash_1944"       "michael greenwalt_1959"
[311] "michael greer_1959"        "michael hedrick_1972"
[313] "michael kellogg_1955"      "michael lustig_1967"
[315] "michael martin_1951"       "michael mashner_1980"
[317] "michael matyas_1955"       "michael mclenigan_1964"
[319] "michael mcroberts_1963"    "michael rayne_1956"
[321] "michael rosenthal_1968"    "michael scheurer_1949"
[323] "michael scott_1957"        "michael smith_1963"
[325] "michael stievater_1959"    "michael triantafillou_1960"
[327] "mike acuna_1966"           "mike duncan_1956"
[329] "milton vazquez_1954"       "mitchell krasnopoler_1958"
[331] "mohammed zaatari_1967"     "nathan greenbaum_1949"
[333] "neil levin_1957"           "neil shepherd_1958"
[335] "neil simons_1959"          "nianxiang xie_1928"
[337] "nicholas clark_1951"       "norm coleman_1945"
[339] "omar ali_1971"             "pat piscitelli_1956"
[341] "patrick connors_1982"      "patrick griffith_1945"
[343] "patrick hinderdael_1959"   "patrick kunze_1980"
[345] "paul aloe_1957"            "paul bousel_1954"
[347] "paul brown_1967"           "paul durbin_1965"
```

```
[349]  "paul elias_1962"            "paul fiondella_1947"
[351]  "paul foster_1956"           "paul garrard_1956"
[353]  "paul grosz_1950"            "paul kates_1970"
[355]  "paul loebach_1969"          "paul sandy_1960"
[357]  "paul schlereth_1951"        "paul sharratt_1956"
[359]  "paul warren_1950"           "paul wilder_1966"
[361]  "peter comfort_1950"         "peter farley_1973"
[363]  "peter hemphill_1959"        "peter horton_1956"
[365]  "peter lunt_1950"            "peter mckeen_1959"
[367]  "peter reilly_1957"          "philip rizzi_1964"
[369]  "pierce mcmanus_1971"        "pierre donahue_1963"
[371]  "prasad gerard_1959"         "radhakisan baheti_1945"
[373]  "rahul sood_1985"            "ralph mckinney_1945"
[375]  "ray celeste_1959"           "ray lake_1960"
[377]  "reginald trujillo_1949"     "rich luquette_1952"
[379]  "richard barton_1948"        "richard behnke_1945"
[381]  "richard carter_1972"        "richard fox_1948"
[383]  "richard glenn_1969"         "richard joseph_1964"
[385]  "richard kaplar_1952"        "richard mitchell_1945"
[387]  "richard williams_1936"      "rick berzon_1953"
[389]  "rick kern_1966"             "rick pulley_1958"
[391]  "rick westley_1948"          "robert cassagnol_1956"
[393]  "robert daniels_1961"        "robert falk_1964"
[395]  "robert gray_1956"           "robert hall_1972"
[397]  "robert keith_1949"          "robert platt_1952"
[399]  "robert roche_1954"          "robert smith_1934"
[401]  "robert trost_1947"          "robert vaughn_1940"
[403]  "robert walker_1968"         "roger kuehnle_1956"
[405]  "roger minor_1953"           "ron wolak_1947"
[407]  "ronald busch_1961"          "ronnie wong_1947"
[409]  "roy beaumont_1972"          "roy cargiulo_1962"
[411]  "russ cooke_1952"            "samuel floyd_1943"
[413]  "samuel richman_1958"        "samuel wyman_1972"
[415]  "scott bell_1959"            "scott hall_1967"
[417]  "scott hubert_1958"          "scott hunt_1968"
[419]  "scott kohr_1962"            "scott koonce_1972"
[421]  "sean hicks_1973"            "sean keely_1972"
[423]  "sean logan_1963"            "sean rhoderick_1973"
[425]  "sid kaplan_1947"            "stephen chavez_1953"
[427]  "stephen forman_1941"        "stephen johnson_1945"
[429]  "stephen koch_1961"          "stephen mostow_1971"
[431]  "stephen silberstein_1959"   "stephen svab_1955"
[433]  "steve fulton_1952"          "steven grufferman_1953"
[435]  "steven kaplow_1955"         "steven maguire_1967"
[437]  "steven palkovitz_1961"      "steven teslik_1954"
```

```
[439] "ted poulos_1962"          "terry schnarrs_1958"
[441] "thip vongxay_1979"        "thomas askins_1955"
[443] "thomas engle_1959"        "thomas momiyama_1932"
[445] "thomas simpson_1943"      "thomas skelly_1952"
[447] "tim appenzeller_1960"     "tim kirkner_1962"
[449] "tim rowe_1955"            "timothy mcquade_1963"
[451] "timothy morgan_1951"      "timothy oldham_1947"
[453] "todd kane_1951"           "tom ivey_1959"
[455] "tom jones_1958"           "tom ray_1934"
[457] "tom stone_1966"           "tom tobin_1955"
[459] "tom winkert_1965"         "tony santucci_1954"
[461] "tony zukas_1954"          "tracy wilson_1960"
[463] "tyler jug_1971"           "vasilios stayeas_1947"
[465] "victor finnegan_1957"     "w ralph eubanks_1958"
[467] "walter winans_1952"       "warren baise_1950"
[469] "william brooks_1952"      "william cavanaugh_1942"
[471] "william cho_1958"         "william clem_1960"
[473] "william furlong_1955"     "william haskins_1970"
[475] "william noonan_1972"      "william parsons_1948"
[477] "william pulver_1938"      "william scott_1948"
[479] "william waskes_1977"      "yonghee nam_1961"
```

```r
length(unique(men8$ID))
```

```
[1] 480
```

```r
length(men8L)
```

```
[1] 480
```

```r
gapTime <- tapply(men8$runTime, men8$ID,
                  function(t) any(abs(diff(t)) > 20))

gapTime <- sapply(men8L, function(df)
    any(abs(diff(df$runTime)) > 20))

sum(gapTime)
```

```
[1] 49
```

```r
lapply(men8L[ gapTime ][1:2], function(df) df[, vars])
```

```
$`abiy zewde_1967`
          year             homeClean  nameClean  yob   runTime
1999.2640 1999       gaithersburg md abiy zewde 1967   96.51667
2000.2604 2000   montgomery vill md abiy zewde 1967   96.63333
2001.2261 2001   montgomery vill md abiy zewde 1967   89.10000
2002.3684 2002   montgomery vill md abiy zewde 1967  123.00000
```

```
2003.3293 2003         gaithersburg md abiy zewde 1967  97.68333
2004.3579 2004    montgomery vill md abiy zewde 1967 100.36667
2006.4833 2006          gaithersburg abiy zewde 1967 108.40000
2008.4560 2008    montgomery vill md abiy zewde 1967  98.78333
2009.5063 2009 montgomery villag md abiy zewde 1967  98.50000
2010.5319 2010 montgomery villag md abiy zewde 1967  99.91667
2011.6492 2011 montgomery villag md abiy zewde 1967 113.10000
2012.3085 2012 montgomery villag md abiy zewde 1967  84.88333

$`adam hughes_1978`
          year       homeClean    nameClean yob    runTime
2005.1916 2005 washington dc adam hughes 1978   80.38333
2006.2273 2006    washington adam hughes 1978   85.16667
2007.1362 2007 washington dc adam hughes 1978   77.78333
2008.1028 2008 washington dc adam hughes 1978   74.23333
2009.5971 2009 washington dc adam hughes 1978 108.06667
2010.5630 2010 washington dc adam hughes 1978 103.06667
2011.1484 2011 washington dc adam hughes 1978   77.11667
2012.1836 2012 washington dc adam hughes 1978   77.76667
```

```r
homeLen <- nchar(cbMenSub$homeClean)

cbMenSub$state <- substr(cbMenSub$homeClean,
                    start = homeLen - 1, stop = homeLen)

cbMenSub$state[cbMenSub$year == 2006] = NA


cbMenSub$ID = paste(cbMenSub$nameClean, cbMenSub$yob,
                cbMenSub$state, sep = "_")
```

```r
numRaces <- tapply(cbMenSub$year, cbMenSub$ID, length)
races8 <- names(numRaces)[which(numRaces >= 8)]
men8 <- cbMenSub[ cbMenSub$ID %in% races8, ]

orderByRunner <- order(men8$ID, men8$year)
men8 <- men8[orderByRunner, ]

men8L <- split(men8, men8$ID)
names(men8L) <- races8

length(men8L)
```

```
[1] 306
```

Modeling the Change in Running Time for Individuals

Further Analysis

1.)

Write a function that uses *read.fwf()* to read the 28 text tables in MenTxt/ and WomenTxt/ into R. These are called 1999.text, 2000txt, etc. and are described in greater detail in 2.2. Examine the tables in a plain text editor to determine the start and end position of each column of interest (name, hometown, age and gun and net time).

Use statistics to explore the results and confirm that you have extracted the information from the correct positions in the text.

2.)

Revise the extractVariables function (see section 2.2) to remove the rows in *menTables* that are blank. In addition, eliminatee the rows that begin with a '*' or a '#'. You may find the following regular expression helpful for locating blank rows in a table.

grep(")[1]*$", body)

The pattern uses several meta characters. The ^ is an anchor for the start of the string, the $ anchors to the end of the string, the [[:blank:]] denotes the equivalence class of any space or tab character, and * indicates that the blank character can appear 0 or more times. All together the pattern [2]*$ matches a string that contains any number of blanks from start to end.

```
extractVariables =
   function(file, varNames = c("name", "home", "ag", "gun", "net", "time"))
   {
      # Find the index of the row with =s
      eqIndex <- grep("^===", file)
      spacerRow <- file[eqIndex]
      headerRow <- tolower(file[ eqIndex - 1 ])
      body <- file[ -(1 : eqIndex) ]

      blank <- grep("^[[:blank:]]*$", body)
      footnote <- grep("^[^\\s]*[\\*]*[#]", body)
      ignore <- union(blank, footnote)

      if(length(ignore))
         body <- body[-ignore]

      # Obtain the starting and ending positions of variables
      searchLocs <- findColLocs(spacerRow)
```

[1][:blank:]
[2][:blank:]

```
        locCols <- selectCols(varNames, headerRow, searchLocs)

        Values <- mapply(substr, list(body), start = locCols[1, ],
                         stop = locCols[2, ])
        colnames(Values) <- varNames

        invisible(Values)
    }
```

3.)

Find the record where the time is only 1.5. What happened? Determine how to handle the problem and which function needs to be modified: *extractResTable()*, *extractVariables()*, or *cleanUp()*. In your modification, include code to provide a warning message about the rows that are being dropped for having a time that is too small.

4.)

Examine the head and tail of the 2006 men's file. Look at both the character matrix in the list called *menResMat* and the character vector in the list called *menFiles* (see Sec 2.2). (Recall that the desired character matrix in *menResMat* and the character vector in *menFiels* both correspond to the element named "2006"). What is wrong with the hometown? Examine the header closely to figure out how this error came about. Modify the *extractVariables()* function to fix the problem.

5.)

Write the *convertTime()* function described in Section 2.3. This function takes a string where time is in either the format hh:mm:ss or mm:ss. The return value is the time as numeric value of the number of minutes. Design this function to take a character vector with multiple strings and return a numeric vector.

6.)

Modify the *createDF()* function in Section 2.3 to handle the formatting problem with the 2006 male file. You will need to carefully inspect the raw text file in order to determien the problem.

```
createDF =
    function(Res, year, sex) {
        useTime <- if(!is.na(Res[1, 'net']) )
                       Res[, 'net']
                   else if( !is.na(Res[1, 'gun']) )
                       Res[ , 'gun']
                   else
                       Res[, 'time']
```

```r
    useTime <- gsub("[#\\*[:blank:]]", "", useTime)

    Res <- Res[ useTime != "", ]

    runTime <- convertTime(useTime[ useTime != "" ])

    N <- nrow(Res)

    Results <- data.frame( year = rep(year, N),
                           sex = rep(sex, N),
                           name = Res[, 'name'],
                           home = Res[, 'home'],
                           age = as.numeric(Res[, 'ag']),
                           runTime = runTime,
                           stringsAsFactors = F)

    invisible(Results)
  }
```

7.)

Follow the approach developed in Section 2.2 to read the files for the female runners and then process them using the functions in Section 2.3 to create a data frame for analysis. You may need to generalize the *createDF()* and *extractVariables()* functions to handle additional oddities in the raw text files.