Link to code:
https://code.pyret.org/editor#share=1-VtugzqL6EmpOtJIBsh6Dyi5CpFKj6Hy&v=22f3b65

```
###############################################################
# include Libraries we want
include shared-gdrive("Bootstrap-DataScience-v1.5.arr",
"1btFfKCcas4zkQ6-SYCYMkcDCqmduzQqB")
# include Google Sheets and Tables library
include gdrive-sheets
include tables
include image



###############################################################
# Load your spreadsheet and define your table
nypd-sheet = load-spreadsheet("1XrJPOeIJCavRjP1nHbWYKcGo79dO-x_XidLplJabGko")

nypd-table = load-table: id, suspected-of, min-observed, searched, frisked, asked-consent,
given-consent, weapon-found, arrested, time, month, day, officer-rank, in-uniform, age, sex, race,
eye, hair, demeanor, boro
  source: nypd-sheet.sheet-by-name("stop-question-frisk-2019", true)
end



###############################################################
# Define some rows
first-row = nypd-table.row-n(0)
arrest-criminal-possession-of-a-weapon = nypd-table.row-n(1)
arrest-petit-larceny = nypd-table.row-n(2)
arrest-robbery = nypd-table.row-n(46)
arrest-grand-larceny-auto = nypd-table.row-n(5557)
arrest-assault = nypd-table.row-n(1107)
arrest-burglary = nypd-table.row-n(7761)
arrest-menacing = nypd-table.row-n(7772)
arrest-criminal-mischief = nypd-table.row-n(5361)
arrest-criminal-sale-controlled-substance = nypd-table.row-n(3704)
arrest-criminal-sale-marijuana = nypd-table.row-n(502)
arrest-trespass = nypd-table.row-n(508)
arrest-grand-larceny = nypd-table.row-n(26)
arrest-making-graffiti = nypd-table.row-n(1763)
```

arrest-murder = nypd-table.row-n(662)
arrest-prostitution = nypd-table.row-n(4720)
arrest-rape = nypd-table.row-n(2317)
arrest-reckless-endangerment = nypd-table.row-n(8760)
arrest-terrorism = nypd-table.row-n(5832)
arrest-theft-of-services = nypd-table.row-n(1436)


```
###############################################################
# Define some helper functions

#Takes in a row and tests whether the suspect was arrested.
#Help filter the data as I create a table
#arrested::(r::Row)->Boolean
fun is-arrested(r): r["arrested"] end

examples:
  is-arrested(arrest-assault) is nypd-table.row-n(1107) == "FALSE"
is-arrested(arrest-burglary) is nypd-table.row-n(7761) == "TRUE"

end


#Takes in a row and tests whether longer observation time leads to an arrest
#greater than 2 mins and suspect was arrested
#is-long-observation::(r::Row) -> Boolean
fun is-long-observation-arrest(r):(r["min-observed"] > 2) and (r["arrested"] == "TRUE") end


#Checks the Borough suspect frisked
fun is-borough-arrested(r):r["boro"] end


fun BX(r): r["boro"] == "BRONX" end
fun BK(r): r["boro"] == "BROOKLYN" end
fun SI(r): r["boro"] == "STATEN ISLAND" end
fun NYC(r): r["boro"] == "MANHATTAN" end
fun QN(r): r["boro"] == "QUEENS" end
```

```
#checks race of suspects
fun is-race(r):r["race"] end

fun race-icon(r):
  if r["race"] == "BLACK":  circle(4,"solid","black")
  else if  r["race"] == "BLACK HISPANIC":  circle(4,"solid","brown")
  else if  r["race"] == "WHITE HISPANIC":  circle(4,"solid","yellow")
  else if  r["race"] == "WHITE":  circle(4,"solid","white")
  else if  r["race"] == "ASIAN / PACIFIC ISLANDER":  circle(4,"solid","tan")
  else: circle(4, "solid", "red")

  end
end

#Builds an column with race icons
nypd-race-table = nypd-table.build-column("Race Icon", race-icon)


#Arrest Table
nypd-stop-and-frisk-arrests-table = nypd-table.filter(is-arrested)

#Adds a column that show the arrest by icon emoji
fun arrest-emoji(r):
  if r["suspected-of"] == "PETIT LARCENY": text(" 💲 ", 10, "gray")
  else if r["suspected-of"] == "ROBBERY": text(" 👤 ",10,"gray")
  else if r["suspected-of"] == "CRIMINAL POSSESSION OF WEAPON": text("🔪 ", 10, "gray")
  else if r["suspected-of"] == "GRAND LARCENY AUTO": text("🚗", 10, "gray")
  else if r["suspected-of"] == "GRAND LARCENY": text(" 💰 ", 10, "gray")
  else if r["suspected-of"] == "BURGLARY": text("🤑", 10, "gray")
  else if r["suspected-of"] == "ASSAULT": text("😠", 10, "gray")
  else if r["suspected-of"] == "MENACING": text("👿", 10, "gray")
  else if r["suspected-of"] == "UNAUTHORIZED USE OF A VEHICLE": text("🏍", 10, "gray")
  else if r["suspected-of"] == "CRIMINAL TRESPASS": text("⛔", 10, "gray")
  else if r["suspected-of"] == "THEFT OF SERVICES": text("🏦", 10, "gray")
  else if r["suspected-of"] == "MURDER": text("☠", 10, "gray")
  else if r["suspected-of"] == "RAPE": text("🙅", 10, "gray")
  else if r["arrested"] == "RECKLESS ENDANGERMENT": text("🚓", 10, "gray")
  else if r["suspected-of"] == "TERRORISM": text("💣", 10, "gray")
  else if r["suspected-of"] == "CRIMINAL MISCHIEF": text("🏃 ", 10, "gray")
  else if r["suspected-of"] == "MAKING GRAFFITI": text(" 🖌", 10, "gray")
```

```
    else if r["suspected-of"] == "CRIMINAL SALE MARIJUANA": text("🌿", 10, "gray")
    else if r["suspected-of"] == "CRIMINAL SALE CONTROLLED SUBSTANCE": text("💊",
20, "gray")
      else: circle(1, "solid", "blue")
    end
  end

#Builds an additional column for emoji icons
nypd-stop-frisk-emoji-table = nypd-stop-and-frisk-arrests-table.build-column("Arrest Icon",
arrest-emoji)

fun arrest-borough(r):
  if r["boro"] == "BROOKLYN": circle(2,"solid","purple")
  else if r["boro"] == "BRONX": circle(2,"solid","yellow")
  else if r["boro"] == "STATEN ISLAND": circle(2,"solid","pink")
  else if r["boro"] == "QUEENS": circle(2,"solid","green")
  else if r["boro"] == "MANHATTAN": circle(2,"solid","blue")
    else:circle(2,"solid","red")
  end
end

nypd-stop-frisk-borough-icon = nypd-stop-and-frisk-arrests-table.build-column("Borough Icon",
arrest-borough)

############################################################
# Define random and logical subsets

#Checks to see if there is a correlation between the borough and waiting time. There were only
two tables that allowed for a scatter plot age and minutes observed but, I choose to evaluate
whether borough and age played a differnece in wait time
nypd-stop-frisk-race = scatter-plot(nypd-stop-and-frisk-arrests-table,
"boro","age","min-observed")


############################################################
# Define a new Table
#subsets by Borough
Brooklyn = nypd-table.filter(BK)
StatenIsland = nypd-table.filter(SI)
Bronx = nypd-table.filter(BX)
```

```
Queens = nypd-table.filter(QN)
Manhattan = nypd-table.filter(NYC)


###############################################################
# Define some data visuals



suspected-crimes = pie-chart(nypd-table,"suspected-of")
#Q. Which crimes were most people frequently stopped for?
#A. Criminal possession of a weapon at 28.1%, with Robbery at 16.7% & Assault at 13.5%

crime-arrest = bar-chart(nypd-table,"arrested")
#Q.What suspected crimes lead to arrest?
#A.Out of 8764 stop and frisk records for 2019, only 2986 lead to an actual arrest.

#Creates an image scatterplot that takes the age and min-bserved and looks at the suspected
crimes for a correlation
image-scatter-plot(nypd-stop-frisk-emoji-table, "age", "min-observed", arrest-emoji)

#Creates an image catterplot that takes the age and min-bserved and looks at the boro and looks
for a correlation
image-scatter-plot(nypd-stop-frisk-borough-icon, "age", "min-observed", arrest-borough)

#pie chart arrested table by suspected crimes
pie-chart(nypd-stop-and-frisk-arrests-table,"suspected-of")

#suspected by race entire table
bar-chart(nypd-table,"race")

#arrested by race arrested table
bar-chart(nypd-stop-and-frisk-arrests-table,"race")

#scatterplot showing arrested based on race
image-scatter-plot(nypd-stop-frisk-emoji-table, "age", "min-observed", race-icon)

#pie chart of suspects by race
pie-chart(nypd-race-table,"race")

#pie chart of arrests by race
pie-chart(nypd-stop-and-frisk-arrests-table,"race")
```

```
#shows the age range of all those arrested by age
histogram(nypd-stop-frisk-emoji-table, "age", 2)

histogram(nypd-table,"age", 2)
```