

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("1XrJP0eIJCavRjP1nHbWYKcGo79dO-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
```

```
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")

```

```

histogram(nypd-stop-frisk-emoji-table, "age", 2)

```

```

#####

```

```

# 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-bserve 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 scatterplot that takes the age and min-bserve 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")
```