Megan Stinefield and Hannah Johnston
Professor Sun
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Homework 2

Part 1

In part one we complete a simple way to sort through the data frame. The user is able to input the column they want to search and then what they are searching for. These values are compared to every row within the searched column, and if it matches, its row number is added to a list of all matching row numbers.

In [70]:
```
def findDecade(userInput):
    result = 0
    rowArray = []
    for x in range(0, data.size):
        check = data.Decade.get(x)
        if check == userInput:
            result +=1
            rowArray.append(x+1)
    matches = str(rowArray).replace("[", "").replace("]", "")
    return "There is/are " + str(result) + " matches is rows "+matches+ " for the year "+ str(userInput)
```

Final Output:

When searching for unknown value:

```
There is/are 0 matches is rows  for the driver cat
```

Part 2

Here we are iterating through the rows and then for every row iterating of values with all of its preceding rows. If there is a match then the duplicate rows numbers and their values are printed out together.

In [41]:
```
for x in range(0, data.Driver.size):
    entrytocheck = data.values[x]
    if x + 1 == data.Driver.size:
        break
    for y in range(x+1, data.Driver.size):
        if str(entrytocheck) == str(data.values[y]):
            entry = str(entrytocheck).replace("[", "").replace("]", "").replace("'", "")
            print("row " + str(x) +" and row "+str(y)+" are identical with values " + entry)
```

Final Output:

```
row 9 and row 84 are identical with values Gino Bianco Brazil 4 1950
row 17 and row 40 are identical with values Cliff Allison United Kingdom 18 1960
row 42 and row 58 are identical with values Richard Attwood United Kingdom 17 1970
```

Part 3

In this part we iterate through every column and then every cell within the column, we then use the .isna method that checks if a certain cell is empty. If a cell is empty then all of its other values are printed out.

In [69]:
```
for x in range(0, data.Driver.size):
    if pandas.isna(data.at[x, "Driver"]) or pandas.isna(data.at[x, "Nationality"]) or pandas.isna(data.at[x, "Rac
        entry = str(data.values[x]).replace("[", "").replace("]", "").replace("'", "")
        print("Row " + str(x+1) + " has missing values(s) " + entry)
```

Final Output:

```
Row 16 has missing values(s) Philippe Alliot France 116.0 nan
Row 30 has missing values(s) nan Italy 1.0 1990.0
Row 60 has missing values(s) Zsolt Baumgartner Hungary nan 2000.0
Row 77 has missing values(s) Tony Bettenhausen nan 11.0 1960.0
Row 93 has missing values(s) Menato Boffa Italy 1.0 nan
```