**QUERIES**

1. **According to the crash data of New York state, what is the percentage of severe injuries for different Vehicle Body Types?**

PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>

PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

PREFIX owl: <http://www.w3.org/2002/07/owl#>

PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>

PREFIX dt: <https://www.data.gov#>

SELECT ?Body\_Type (ROUND(?Severe\_Injury\_Count \* 100 / ?Total\_Injury\_Count) AS ?Severe\_Injury\_Percentage) ?Severe\_Injury\_Count ?Total\_Injury\_Count

WHERE {

{

SELECT ?Body\_Type (COUNT(?Injury\_Severity) AS ?Severe\_Injury\_Count)

WHERE {

?Crash dt:involves ?Vehicle .

?Vehicle dt:hasBodyType ?Body\_Type .

?Vehicle dt:isOccupiedBy ?Victim .

?Victim dt:hasInjurySeverity ?Injury\_Severity .

FILTER (?Injury\_Severity = "Severe" || ?Injury\_Severity = "Killed")

}

GROUP BY ?Body\_Type

}

{

SELECT ?Body\_Type (COUNT(?Body\_Type) AS ?Total\_Injury\_Count)

WHERE {

?Crash dt:involves ?Vehicle .

?Vehicle dt:hasBodyType ?Body\_Type .

}

GROUP BY (?Body\_Type)

HAVING (?Total\_Injury\_Count > 10)

}

}

ORDER BY DESC(?Severe\_Injury\_Percentage)

1. **In New York State, what percentage of male and female drivers involved in a crash, violated traffic laws in the year 2018?**

PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>

PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

PREFIX owl: <http://www.w3.org/2002/07/owl#>

PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>

PREFIX dt: <https://www.data.gov#>

SELECT ?Female\_Defaulter\_Count ?Male\_Defaulter\_Count ?Total\_Defaulter\_Count ?Male\_Defaulter\_Percentage ?Female\_Defaulter\_Percentage

WHERE {

{

SELECT (COUNT(?Gender) AS ?Female\_Defaulter\_Count)

WHERE {

?Crash dt:hasContributingFactorDesc ?Contributing\_Factor\_Desc .

VALUES ?Contributing\_Factor\_Desc {

"Unsafe Speed" "Failure to Yield Right-of-Way" "Failure to Keep Right" "Passing or Lane Usage Improper" "Unsafe Lane Changing" "Alcohol Involvement"

}

?Crash dt:involves ?Vehicle .

?Vehicle dt:isOccupiedBy ?Victim .

?Victim dt:hasSex ?Gender .

?Victim dt:hasRoleType ?Role\_Type .

FILTER (?Gender = "F")

FILTER contains(?Role\_Type, "Driver")

}

}

{

SELECT (COUNT(?Gender) AS ?Male\_Defaulter\_Count)

WHERE {

?Crash dt:hasContributingFactorDesc ?Contributing\_Factor\_Desc .

VALUES ?Contributing\_Factor\_Desc {

"Unsafe Speed" "Failure to Yield Right-of-Way" "Failure to Keep Right" "Passing or Lane Usage Improper" "Unsafe Lane Changing" "Alcohol Involvement"

}

?Crash dt:involves ?Vehicle .

?Vehicle dt:isOccupiedBy ?Victim .

?Victim dt:hasSex ?Gender .

?Victim dt:hasRoleType ?Role\_Type .

FILTER (?Gender = "M")

FILTER contains(?Role\_Type, "Driver")

}

}

BIND (?Male\_Defaulter\_Count + ?Female\_Defaulter\_Count AS ?Total\_Defaulter\_Count)

BIND (ROUND(?Female\_Defaulter\_Count \* 100 / ?Total\_Defaulter\_Count) AS ?Female\_Defaulter\_Percentage)

BIND (ROUND(100 - ?Female\_Defaulter\_Percentage) AS ?Male\_Defaulter\_Percentage)

}

1. **What are the 5 major contributing factors in the state of New York that resulted in crashes among the younger population within the age group 20-25?**

PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>

PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

PREFIX dt: <https://www.data.gov#>

PREFIX owl: <http://www.w3.org/2002/07/owl#>

PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>

SELECT ?Contributing\_Factor (COUNT(?Contributing\_Factor) as ?Total\_Count)

WHERE {

?Crash dt:hasContributingFactorDesc ?Contributing\_Factor .

?Crash dt:involves ?Vehicle .

?Vehicle dt:isOccupiedBy ?Victim .

?Victim dt:hasAge ?Age .

FILTER (?Age >= "20" && ?Age <= "25")

}

GROUP BY ?Contributing\_Factor

ORDER BY desc(?Total\_Count)

LIMIT 5

1. **Based on the vehicle manufacturing year, what shift has been noticed in the ratio of Minor to Severe injuries when individuals were wearing a seat belt?**

PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>

PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

PREFIX owl: <http://www.w3.org/2002/07/owl#>

PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>

PREFIX dt: <https://www.data.gov#>

SELECT ?Vehicle\_Year (?Minor\_Injury\_Count / ?Severe\_Injury\_Count AS ?Minor\_To\_Severe\_Injury\_Ratio) ?Minor\_Injury\_Count ?Severe\_Injury\_Count

WHERE {

{

SELECT ?Vehicle\_Year (COUNT(?Injury\_Severity) AS ?Minor\_Injury\_Count)

WHERE {

?Crash dt:involves ?Vehicle .

?Vehicle dt:hasVehicleYear ?Vehicle\_Year .

?Vehicle dt:isOccupiedBy ?Victim .

?Victim dt:safetyEquipmentInPlace ?Safety\_Equipment .

?Victim dt:hasInjurySeverity ?Injury\_Severity .

FILTER (?Safety\_Equipment = "Lap Belt" || ?Safety\_Equipment = "Lap Belt/Harness")

FILTER (?Injury\_Severity = "Minor")

}

GROUP BY ?Vehicle\_Year

HAVING (?Minor\_Injury\_Count > 20)

}

{

SELECT ?Vehicle\_Year (COUNT(?Injury\_Severity) AS ?Severe\_Injury\_Count)

WHERE {

?Crash dt:involves ?Vehicle .

?Vehicle dt:hasVehicleYear ?Vehicle\_Year .

?Vehicle dt:isOccupiedBy ?Victim .

?Victim dt:safetyEquipmentInPlace ?Safety\_Equipment .

FILTER (?Safety\_Equipment = "Lap Belt" || ?Safety\_Equipment = "Lap Belt/Harness")

?Victim dt:hasInjurySeverity ?Injury\_Severity .

FILTER (?Injury\_Severity = "Moderate" || ?Injury\_Severity = "Severe" || ?Injury\_Severity = "Killed")

}

GROUP BY ?Vehicle\_Year

}

}

ORDER BY desc(?Vehicle\_Year)