**\*\*Project Task: Driver Information and Race Performance\*\***

In this project, I aim to enable users to query and view detailed information about Formula 1 drivers, including their personal details and performance in races.

\*\*SPARQL Query for Driver Information\*\*: When a user inputs a driver's name, I will retrieve personal information such as date of birth, nationality, and other relevant details. I will also display the driver's overall statistics, including the number of races they have participated in.

\*\*SPARQL Query for Race Performance\*\*: When a user selects a driver's name, I will retrieve information about the races the selected driver participated in. This will include details like race name, date, circuit, position, and points earned.

\*\*SPARQL Query for Driver Comparison\*\*: When a user selects two drivers for comparison, I will display a side-by-side comparison of their career achievements, points, and race performances.

\*\*Driver’s Performance Over Time\*\*: I will provide functionality for users to view a driver’s performance over time. This will involve showing how a driver’s points, positions, or other statistics have changed from race to race or season to season.

\*\*Team Performance\*\*: In addition to individual drivers, I will also enable users to query and view information about teams (constructors). This will include details like the team’s overall points, number of wins, and other relevant statistics.

\*\*Circuit Information\*\*: I will provide information about the different circuits where races take place. This will include details like the number of races held at each circuit, and the average number of points earned by drivers at each circuit.

\*\*Advanced Comparison Features\*\*: For the driver comparison feature, I will allow users to select specific statistics or races for comparison. This will give users more flexibility and could yield more detailed and relevant comparison results.

Through this project, I aim to demonstrate the practical application of Semantic Web principles to enhance data integration, interoperability, and knowledge representation in the domain of Formula 1 racing.

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java -server -Xmx4g -jar blazegraph.jar

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node server.js (in the root of project)

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Query \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

PREFIX ns1: <<http://example.com/f1/>>

PREFIX dbo: <<http://dbpedia.org/ontology/>>

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

PREFIX foaf: <<http://xmlns.com/foaf/0.1/>>

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

PREFIX dbpedia-owl: <<http://dbpedia.org/ontology/>>

SELECT ?fname ?lname ?dob ?nationality ?raceName ?circuitName ?raceDate (COUNT(?raceId) AS ?numRaces)

(SUM(?points) AS ?totalPoints) (AVG(?points) AS ?avgPoints)

WHERE {

?driverId foaf:nick ?nick ;

foaf:givenName ?fname ;

foaf:familyName ?lname ;

foaf:birthday ?dob ;

ns1:nationality ?nationality .

OPTIONAL { ?driverId foaf:homepage ?wikipediaUri }

# match the nickname entered by the user

FILTER(REGEX(STR(?nick), "hamilton", "i"))

# Information about races the driver participated in

?participation ns1:driverId ?driverId ;

ns1:raceId ?raceId ;

ns1:points ?points .

?raceId ns1:name ?raceName ;

ns1:date ?raceDate ;

ns1:circuitId ?circuitId .

?circuitId ns1:name ?circuitName .

}

GROUP BY ?fname ?lname ?dob ?nationality ?raceName ?circuitName ?raceDate