Toyota Financial Services Customer 360 View

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Background

Toyota Financial Services (TFS) is the largest automotive lender in the nation with over $125B in total assets. TFS offers financing, leasing, protection plans, and other financial services to customers and dealers all across the United States. In order to serve their customers better, it was required to have a comprehensive view of the customer.
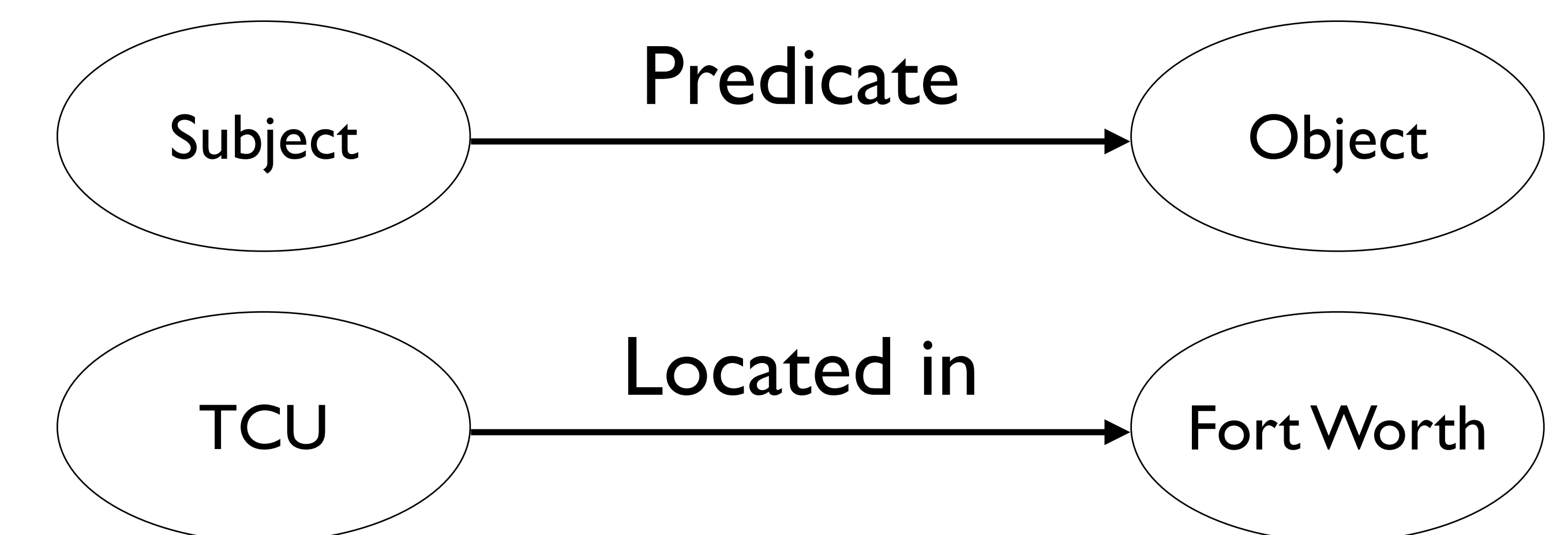
Solution

The TFS Customer 360 team has worked with TFS to create a Customer 360 view by harnessing the power of graph databases, semantic queries, and graph visualization tools. This view represents all direct and indirect relationships that exist for a customer and will be made available to different stakeholders in the company to make more informed decisions and to better identify potential opportunities.

Technologies Used

React, D3, AWS Lambda, Amazon API Gateway, Amazon SageMaker, Amazon Neptune, SPARQL, RDF

Home Page

CUSTOMER 360

- Select property to search by
- Select which categories to be shown
- Enter search value

Graph

- Example of one customer being returned from a query
- Customer name is always the central node

- Certain nodes can be drilled down on to show additional information pertaining to that node

- Multiple customers may be returned if a search value is shared
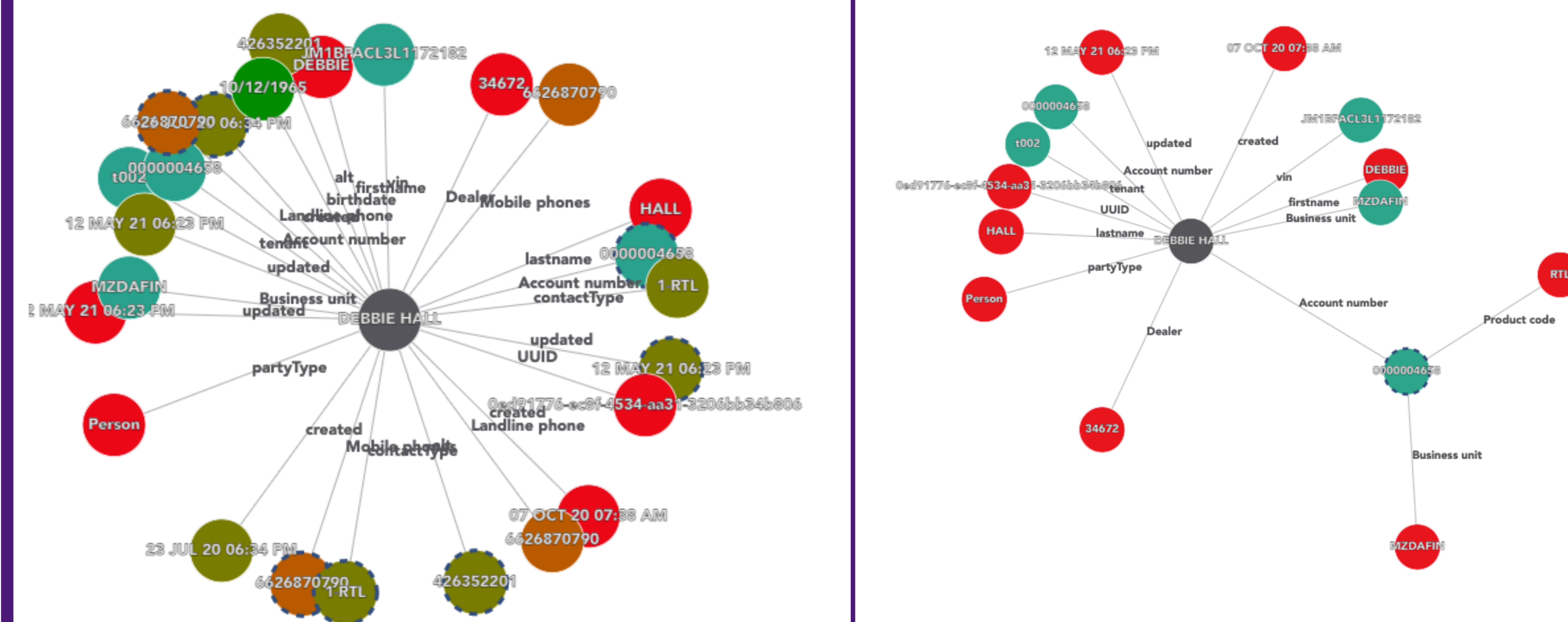- Two customers connected by a shared VIN

RDF

RDF is a standard that is used for representing highly interconnected data. Each RDF statement is a three part structure consisting of a subject, a predicate, and an object or literal. Representing data in RDF allows information to be easily identified and interconnected.

Subject → Predicate → Object

TCU → Located in → Fort Worth

SPARQL

SPARQL is the standard query language and protocol for RDF databases. It is able to retrieve and manipulate data stored in RDF format.

```
SELECT ?subject
WHERE {
    ?subject http://dbpedia.org/ontology/city "Fort Worth"
}
```

This query returns all subjects located in Fort Worth.

References

RDF - https://www.w3.org/RDF/
SPARQL - https://www.w3.org/TR/sparql11-query/
AWS - https://docs.aws.amazon.com/
D3 - https://d3js.org/
React JS - https://reactjs.org/

Acknowledgements