

### ***Benchmarking Outline:***

When benchmarking Euler, there were three different test cases: Linear Relationship, Single Additional Option, and Two Additional Options.

Benchmarking is based on the **time of execution** vs. the **number of rules** in the knowledge base.

- **Test Case 1 - Linear Relationship:**

Uses a Single Fact

N3  
:Test rdf:type :A1

Each Fact Chains to One Other Fact:

N3  
{?X rdf:type :A1} => {?X rdf:type :B1}.  
{?X rdf:type :B1} => {?X rdf:type :C1}.  
{?X rdf:type :C1} => {?X rdf:type :D1}.  
{?X rdf:type :D1} => {?X rdf:type :E1}.  
...

Query Is Issued To The Last Possible Inferred Fact:

N3  
\_:Test rdf:type :E1

- **Test Case 2 - Single Additional Option:**

Uses a Single Fact

N3  
:Test rdf:type :A1

Each Fact Chains to Two Other Facts:

N3  
{?X rdf:type :A1} => {?X rdf:type :B1}.  
{?X rdf:type :A1} => {?X rdf:type :Node1}.  
{?X rdf:type :B1} => {?X rdf:type :C1}.  
{?X rdf:type :B1} => {?X rdf:type :Node2}.  
{?X rdf:type :C1} => {?X rdf:type :D1}.  
{?X rdf:type :C1} => {?X rdf:type :Node3}.  
{?X rdf:type :D1} => {?X rdf:type :E1}.  
{?X rdf:type :D1} => {?X rdf:type :Node4}.  
...

Query Is Issued To The Last Possible Inferred Fact:

N3  
\_:Test rdf:type :E1

- **Test Case 3 - Two Additional Options:**

Uses a Single Fact

N3

:Test rdf:type :A1

Each Fact Chains to **Two** Other Facts:

N3

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{?X rdf:type :A1} => {?X rdf:type :B1}.
{?X rdf:type :A1} => {?X rdf:type :Node1}.
{?X rdf:type :A1} => {?X rdf:type :Node2}.
{?X rdf:type :B1} => {?X rdf:type :C1}.
{?X rdf:type :B1} => {?X rdf:type :Node3}.
{?X rdf:type :B1} => {?X rdf:type :Node4}.
{?X rdf:type :C1} => {?X rdf:type :D1}.
{?X rdf:type :C1} => {?X rdf:type :Node5}.
{?X rdf:type :C1} => {?X rdf:type :Node6}.
{?X rdf:type :D1} => {?X rdf:type :E1}.
{?X rdf:type :D1} => {?X rdf:type :Node7}.
{?X rdf:type :D1} => {?X rdf:type :Node8}.
...
```

Query Is Issued To The Last Possible Inferred Fact:

N3

\_:Test rdf:type :E1