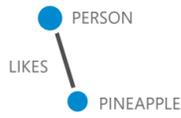■■ Microsoft

Slice your data queries in half

Demystify complex relationships with SQL Server 2017 and graph

How do graph databases work?

Graph databases represent relationships (edges) between entities (nodes).
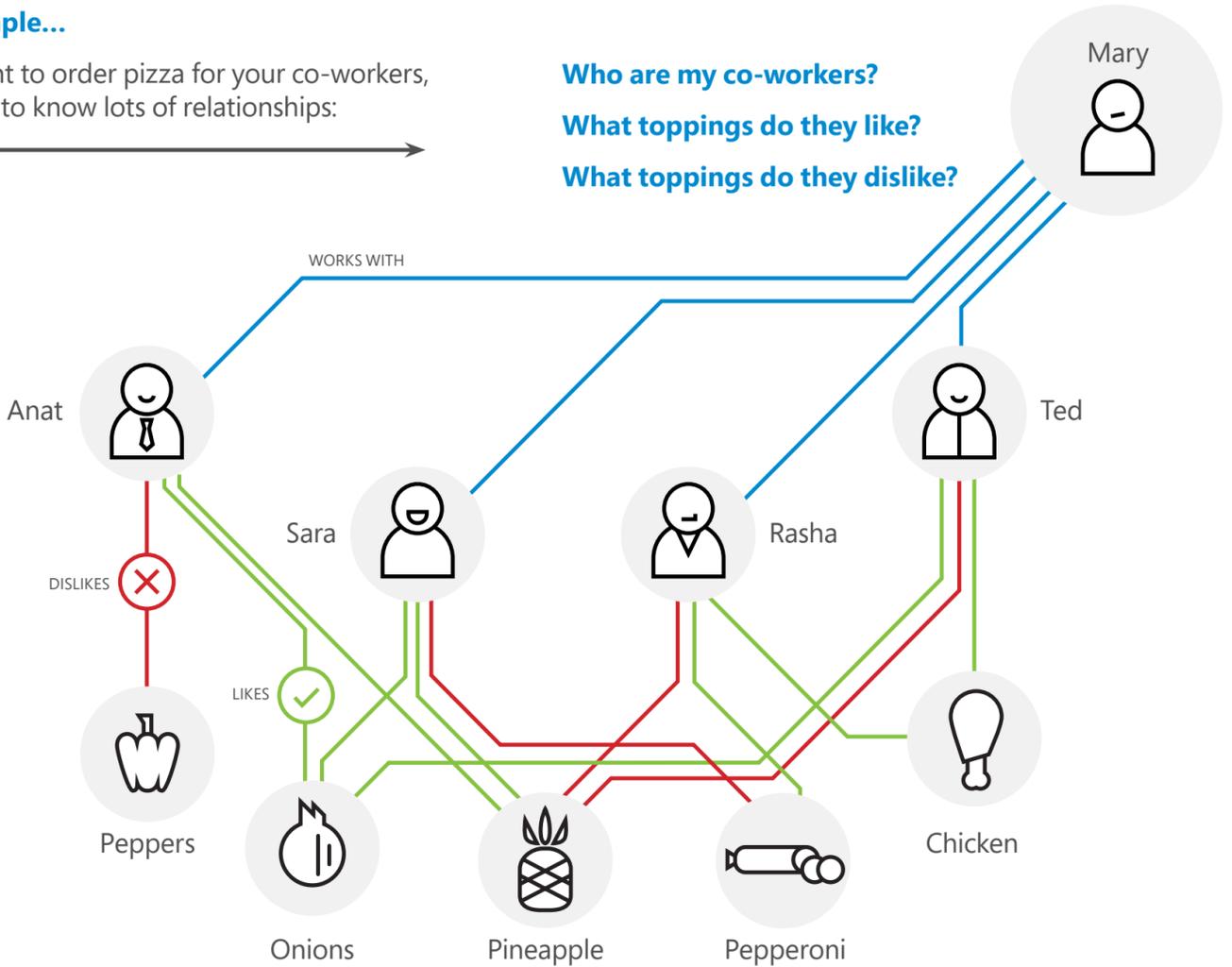
PERSON

LIKES

PINEAPPLE

When do you use graph databases?

Graph databases make finding and expressing relationships easier, helping to generate better insights from interconnected data.

For example...

If you want to order pizza for your co-workers, you need to know lots of relationships:

Who are my co-workers?

What toppings do they like?

What toppings do they dislike?

Mary

WORKS WITH

Anat

Sara

Rasha

Ted

DISLIKES

LIKES

Peppers

Onions

Pineapple

Pepperoni

Chicken

TRADITIONAL SQL QUERY:	VS	GRAPH QUERY:

```
SELECT DISTINCT Toppings.topping
FROM dbo.toppings AS Toppings
WHERE Toppings.id IN
    (SELECT Likes.toppingID
    FROM dbo.relToppingLikes AS Likes
    WHERE Likes.peopleID IN
        (SELECT Coworkers.coworkerID
        FROM dbo.relCoworkers AS Coworkers
        WHERE Coworkers.personID IN
            (SELECT Person.id
            FROM dbo.people AS Person
            WHERE Person.firstName = 'Mary')))
    AND Toppings.id NOT IN
    (SELECT DisLikes.toppingID
    FROM dbo.relToppingDisLikes AS DisLikes
    WHERE DisLikes.peopleID IN
        (SELECT Coworkers.coworkerID
        FROM dbo.relCoworkers AS Coworkers
        WHERE Coworkers.personID IN
            (SELECT Person.id
            FROM dbo.people AS Person
            WHERE Person.firstName = 'Mary')))
```

```
SELECT DISTINCT Topping.topping
FROM gPeople AS Person, gPeople AS Coworker,
eWorkswith, eLikes, eDisLikes, gToppings AS Topping
WHERE MATCH(Person-(eWorkswith)->Coworker-(eLikes)-
>Topping)
AND Topping.ID NOT IN
    (SELECT DISTINCT Topping.ID
    FROM gPeople AS Coworker, eWorkswith,
    eDisLikes, gToppings AS Topping
    WHERE MATCH(Person-(eWorkswith)->Coworker-
    (eDisLikes)->Topping))
AND Person.firstName='Mary'
```

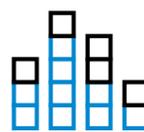## Why use SQL Server 2017 for graph?

With SQL Server 2017 graph capabilities, you also get:

Industry-leading security and compliance.

Microsoft SQL Server tools and management capabilities.

Other advanced features like columnstore, HA, R services, and more.

READ THE GRAPH 101 BLOG POST FOR MORE DETAILS

TRY IT ON THE PLATFORM OF YOUR CHOICE TODAY