

Creating Stored Procedures and Using Parameters



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Creating Stored Procedures and Using Parameters

**Creating a Simple
Stored Procedure**

Adding Parameters

**Optional and
Output Parameters**

**Returning Data and System
Options in Stored Procedures**



The First Stored Procedure



Grace

```
CREATE PROCEDURE  
dbo.SelectAllContacts  
AS  
BEGIN;  
SELECT * FROM dbo.Contacts;  
END;
```



Insert Contact Procedure Requirements



Insert contact



Return details



Return ID



No duplicates



```
public int InsertContact(string name)
{
    string sql = $"INSERT INTO dbo.Contacts (Name) VALUES
    ('{name}')";

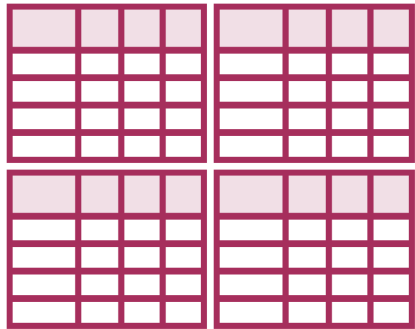
    return ExecuteSql(sql);
}
```

Embedding SQL in Program Code

A bad idea!

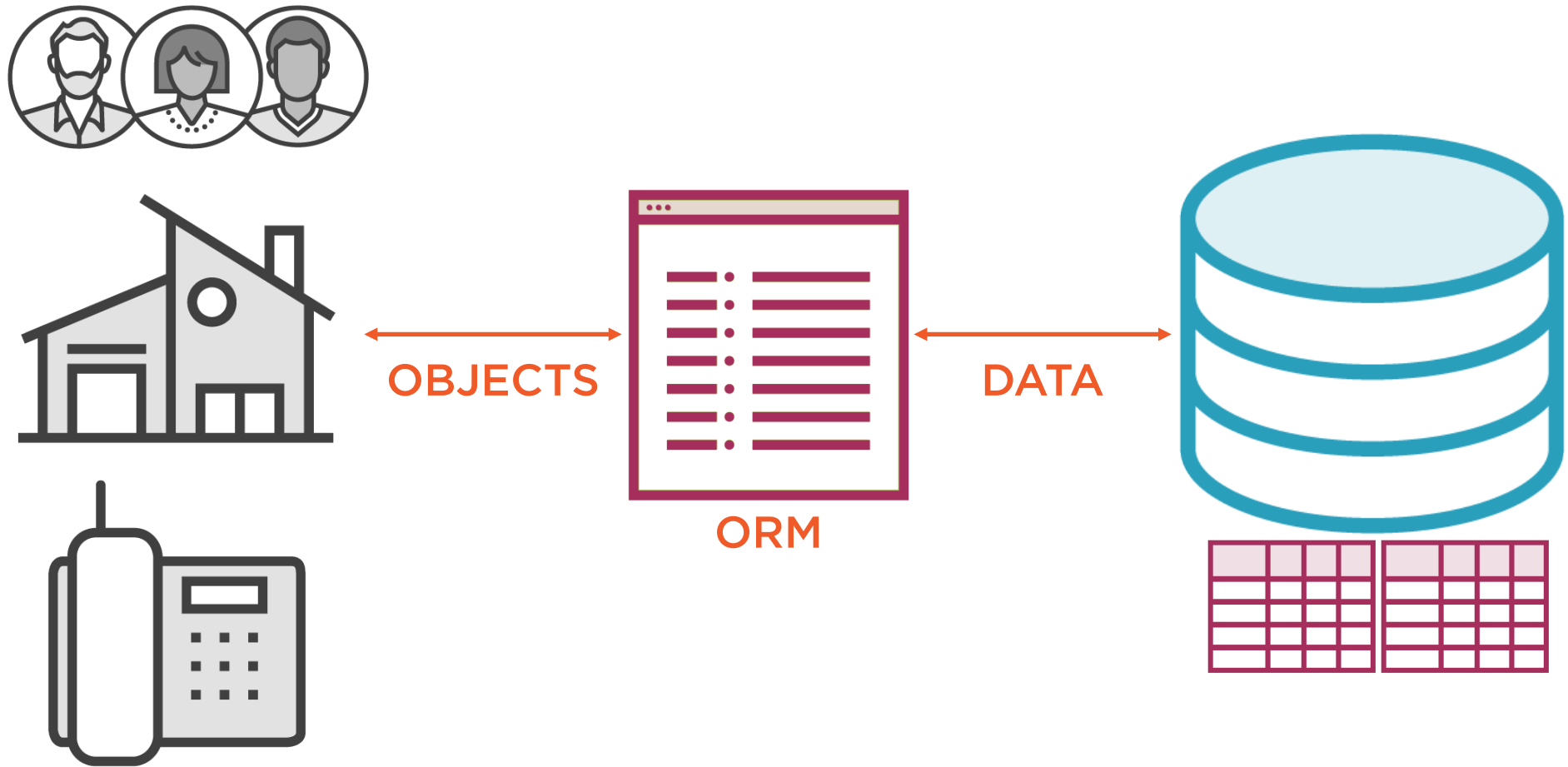


Embedded SQL Limitations

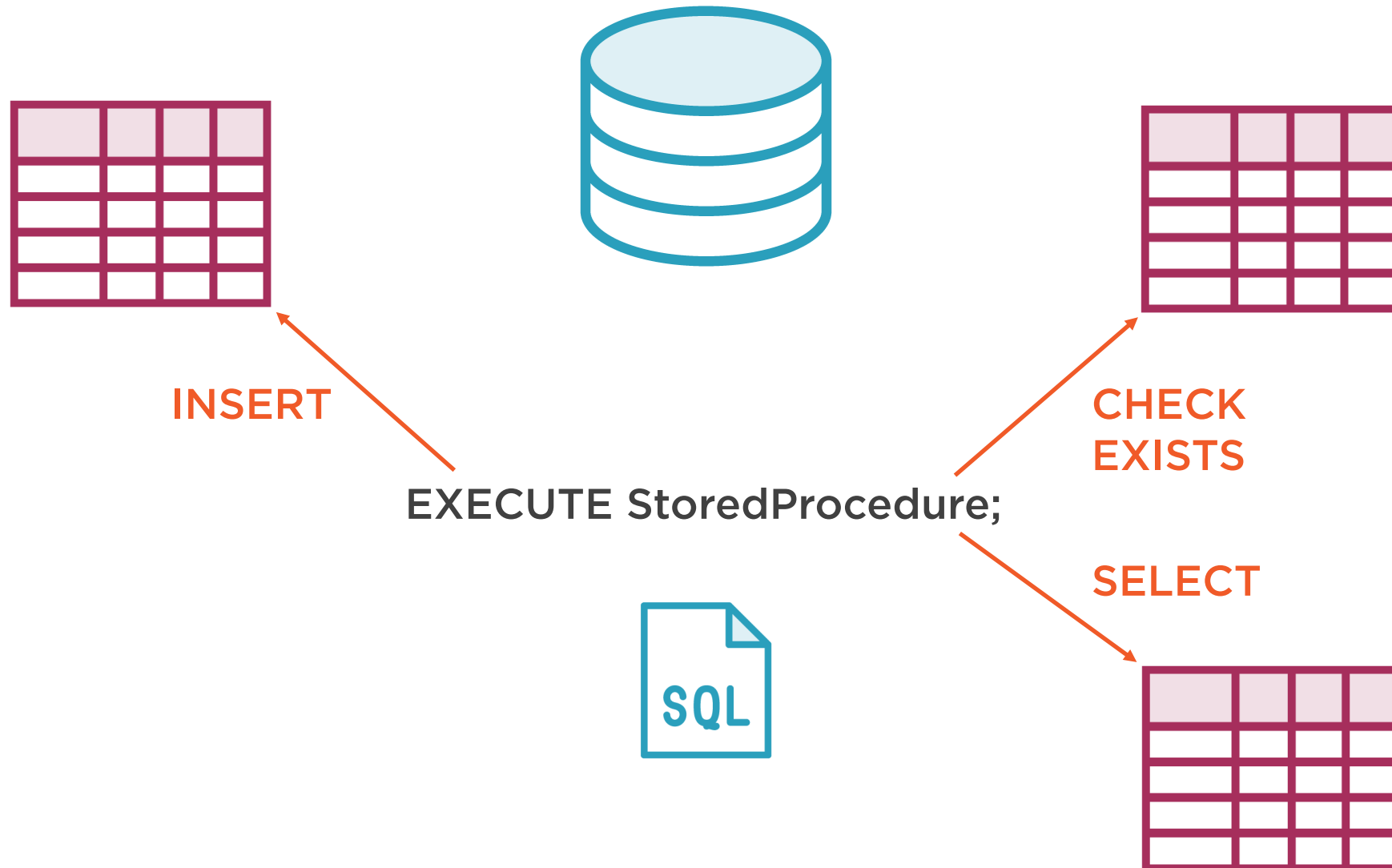


```
public int InsertContact  
(string name)  
DateTime dateOfBirth,  
bool allowContact)
```

Object-relational Mapping



The Stored Procedure



Parameters



Strings



Numbers



Dates, XML



Custom types



Insert Contact Parameters



First Name
Last Name



Date of Birth



Allow Phone
Contact

@ParameterName



```
CREATE PROCEDURE <name of procedure>  
(Parameters (optional))  
AS  
BEGIN;  
  
Statements here...  
  
END;
```

T-SQL Create Procedure Statement

Used to create new stored procedures



Optional Parameters

**@ParameterName =
default**



Insert Contact Procedure Requirements



Insert contact



Return details



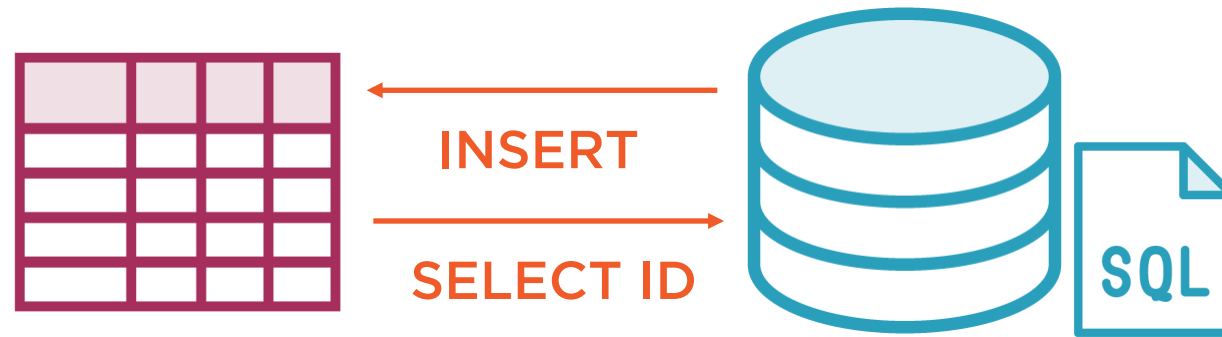
Return ID



No duplicates



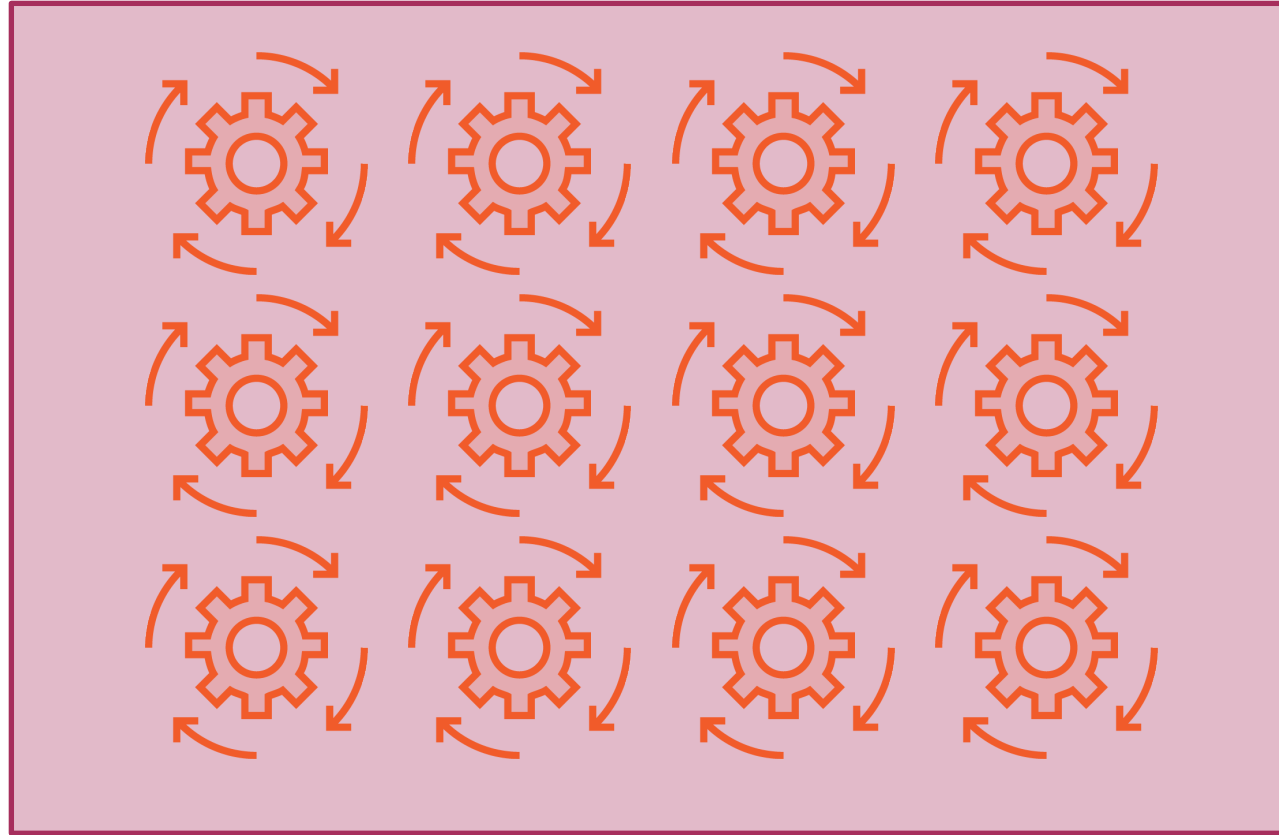
Returning Record ID



Stored Procedure Size



Stored Procedure Operations



Obtaining Contact ID



Grace



Identity column



Identity Columns

| | | | | 1 |
|--|--|--|--|---|
| | | | | 2 |
| | | | | 3 |
| | | | | 4 |

ContactId INT IDENTITY(1,1)



SQL Server System Functions

<https://docs.microsoft.com/en-us/sql/t-sql/functions/system-functions-transact-sql>

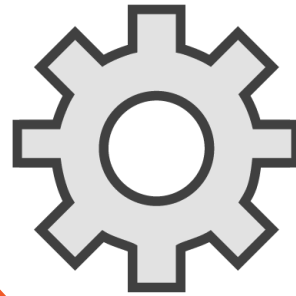


Identity Processing

| | | | |
|--|--|--|--|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Contacts

51



| | | | |
|--|--|--|--|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Contact
Addresses

21

`SELECT @ContactId = @@IDENTITY;`



@@IDENTITY

<https://docs.microsoft.com/en-us/sql/t-sql/functions/identity-transact-sql>



```
DECLARE @ContactIdOut INT;  
  
EXEC dbo.SelectContactId  
@ContactId = @ContactIdOut OUTPUT;  
  
SELECT @ContactIdOut;
```

Output Parameters

Assign output to holding variable



SET Options

<https://docs.microsoft.com/en-us/sql/t-sql/statements/set-statements-transact-sql>



Less Network Traffic

EXECUTE 

RESULT

METADATA



Select Contact



Taking Stock



Grace



Insert contact



Select Contact



Linked Together



Control Flow



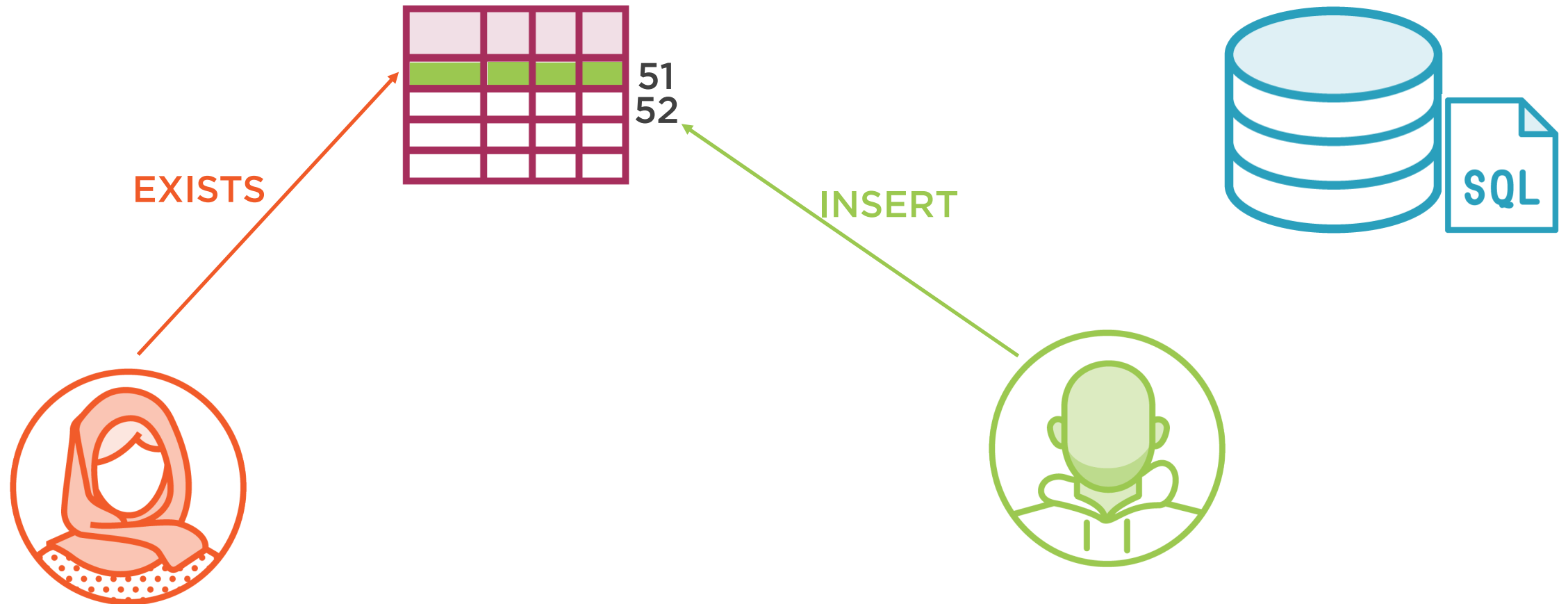
IF statement



WHILE loop



Contact Exists Business Logic



Summary



Implementation options

Parameter-less stored procedures

Mandatory and optional parameters

Retrieving identity values

Nesting stored procedures

