



kitewheel

orchestrate great experiences

Kitewheel Databases



The slide features a dark blue background with a diagonal light blue stripe. Several dandelion seeds are scattered across the frame, some in sharp focus and others blurred, creating a sense of movement. The text 'Training Overview' is centered in a white, sans-serif font.

Training Overview

Databases – Learning Outcomes

- ◀ Kitewheel Supported Databases
- ◀ Creating a Database Connection
- ◀ Creating a Read Adaptor
- ◀ Creating a Write Adaptor
- ◀ Creating and control a Listen Adaptor
- ◀ Creating a Delete Adaptor
- ◀ Debugging Common Database errors
- ◀ Certification

Kitewheel Personas & Target Audience

Client

CHLOE



- Defines Business Requirements
- Defines KPIs, Goals and Metrics to track
- Tracks progress against goals on Journey Insights

Secondary

Strategy

SOPHIE



- Translates business requirements into Journeys Map
- Captures journey details, metrics and goals

Primary

Solution Design
&
Configuration

CHARLES



- Solution Design
- Identifies data sources
- Configures rules
- Creates outcomes
- Develop and test
- Deploy

Primary

Technical
&
Support

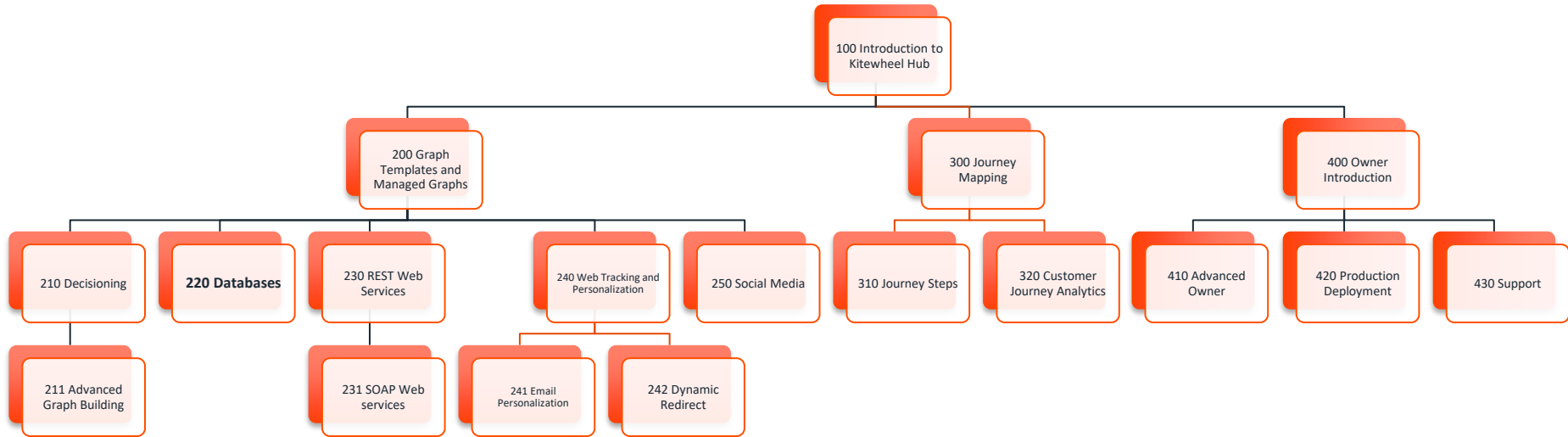
THOMAS



- Enable tech environment - servers, database
- Handle security and internet facing services
- Support accounts and projects

Secondary

Training Course Overview



Prerequisites

◀ A Database Instance:

- ◀ Postgres SQL version 9.x
- ◀ MySQL Version 5.6 (includes Amazon Web Services Aurora)
- ◀ Microsoft SQL Server 2008 and above
- ◀ Oracle 10i

◀ Database client tool

- ◀ MySQL Workbench
- ◀ Toad
- ◀ SQL Server Studio

Databases – Learning Outcomes

- ◀ Database Model
- ◀ Kitewheel Supported Databases
- ◀ Creating a Database Connection
- ◀ Creating a Read Adaptor
- ◀ Creating a Write Adaptor
- ◀ Creating and control a Listen Adaptor
- ◀ Creating a Delete Adaptor
- ◀ Debugging Common Database errors
- ◀ Certification

The background is a dark blue gradient with a diagonal light blue stripe running from the top right to the bottom left. Several glowing dandelion seeds are scattered across the scene, appearing to float or drift. The seeds are bright white and yellow, with some showing a reddish-brown seed head. The overall effect is ethereal and dynamic.

Database Integration

Kitewheel Supported Databases



- ◀ Connections are made via SQLAlchemy Python Library using parameterized SQL
- ◀ Parameters are all of the form %%paramName%%

Creating and Testing a Database Connection

- Admin Console
- Add a Connection
 - Choose DB Type
 - User Name
 - Password
 - Host Name
 - Port
 - Postgres - 5432
 - MySQL - 3306
 - MSSQL - 1433
 - Oracle - 1521
 - Database Name
- Save
- Test
- Note on service accounts



your_db_name > Development

Type
MySQL

User Name
User Name

Password
Password

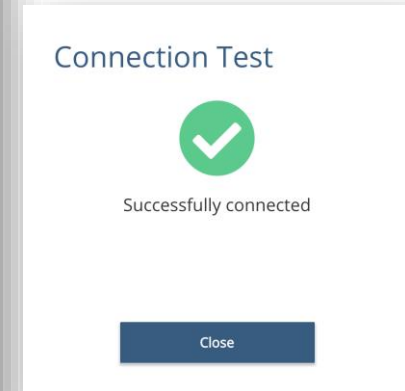
Host Name
Host Name

Port
Port



Database Name
Database Name

Save Edits


Save Edits to Enable Test



Kitewheel Supported Operations: Read


Connection:   Validate

Adaptor Action:

Database Read Options 


Read Query

```
1 SELECT column1, column2, ... FROM table_name WHERE expression;
```


Parameters		Output	
Name	Source	Content	Destination
		Records Selected	<input type="text" value="(Please Define a Source)"/> 

[W3schools.com](https://www.w3schools.com)

Kitewheel Supported Operations: Write (Insert/Update)

Connection:  ⚠ Validate


Adaptor Action:

Database Write Options 

Write Query


```
1 INSERT INTO table_name (column1, column2, column3, ...)
2 VALUES (value1, value2, value3, ...);
```

Parameters Output


Name	Source	Content	Destination
		Records Changed	<input type="text" value="(Please Define a Source)"/> 

[W3schools.com](https://www.w3schools.com)

Kitewheel Supported Operations: Write (Insert/Update)

Connection:  ⚠ Validate


Adaptor Action:

Database Write Options 

Write Query


```
1 UPDATE table_name
2 SET column1 = value1, column2 = value2, ...
3 WHERE condition;
```

Parameters Output


Name	Source	Content	Destination
		Records Changed	<input type="text" value="(Please Define a Source)"/> 

[W3schools.com](https://www.w3schools.com)

Kitewheel Supported Operations: Delete

Connection:  Validate

Adaptor Action:

Database Delete Options 

Delete Query

```
1 DELETE FROM table_name WHERE condition;
```

Parameters

Name	Source
Records Changed	<input type="text" value="(Please Define a Source)"/>




Output

Content	Destination
Records Changed	<input type="text" value="(Please Define a Source)"/>

[W3schools.com](https://www.w3schools.com)

Kitewheel Supported Operations: Listen

Listener Editor

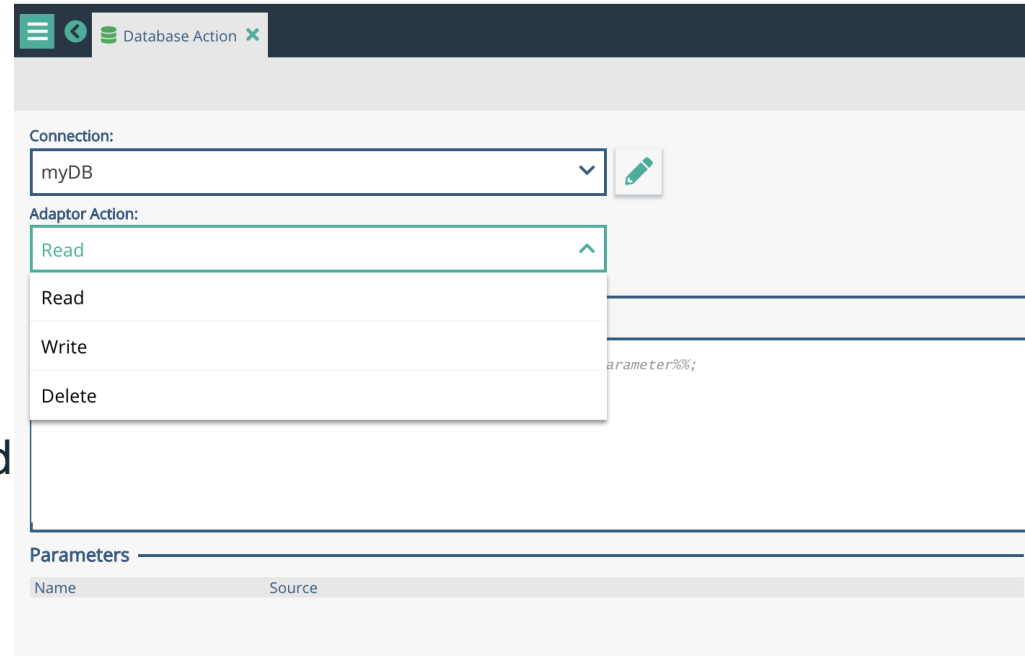
Listener Type	Connection
 Database >	CDM > 
Database Listener Options ⓘ	
Listen Interval: <input type="text" value="1"/>	Max Record Count: <input type="text" value="1"/>
Listen Query	
<pre>1 SELECT column1, column2, ... FROM table_name where condition;</pre>	
Set Statement (applied to returned results of listen query)	
<pre>1 set column1 = val1, column2 = val2, ...</pre>	
Output	
Content	Destination
Records Selected	<input type="text" value="(schema)"/> 

Database Exercise Customer Entity

- ◀ Design a Customer Entity
 - ◀ firstName, lastName, date of birth, etc
- ◀ Create Database Table
- ◀ Create CRUD Adaptors
 - ◀ Create – INSERT – database WRITE method
 - ◀ Read – SELECT – database READ method
 - ◀ Update – UPDATE – database WRITE method
 - ◀ Delete – DELETE – database DELETE method
- ◀ Create CRUD Test Graph
 - ◀ Call Create, Read, Update, Read, Delete, and Read to test all of the adaptors

Create a Database Adaptor

- ◀ Choose a database connection
- ◀ Choose an action (read, write, delete)
- ◀ Write the SQL
 - ◀ Use `%%param%%` to define parameters from schema locations
- ◀ Output will be the rows selected (select) or the number of rows affected (write, delete, or update)



The screenshot shows a web interface for configuring a database action. At the top, there is a navigation bar with a menu icon, a back arrow, and a tab labeled "Database Action" with a close button. Below the navigation bar, the "Connection:" field is a dropdown menu currently showing "myDB" with a pencil icon to its right. The "Adaptor Action:" field is a dropdown menu currently showing "Read" with an upward arrow icon. Below this dropdown, the options "Read", "Write", and "Delete" are listed. To the right of the "Adaptor Action:" dropdown, the text "parameter%"; is partially visible. At the bottom of the form, there is a section titled "Parameters" with a table header containing "Name" and "Source".

Read from a Database

- Choose the database connection
- Choose 'Read' as the action
- Write a 'SELECT' statement in proper format
- Extra clauses such as 'where' are optional
- Output will be the rows that are selected, they will be stored in the schema location chosen.
- The output data will overwrite any other nested information in that schema location.

Database Action

Connection: myDB Validate

Adaptor Action: Read

Database Read Options

Read Query

```
1 select firstName, lastName, emailAddress from customer where id = 551600
```

Parameters

Name	Source	Output	Content	Destination
id	(schema)/profile/id	Records Selected		(schema)/customer

Write to a Database

- ◀ Choose the database connection
- ◀ Choose 'write' as the action
- ◀ Write an 'INSERT' or 'UPDATE' statement in the proper format
- ◀ Output will be the number of rows changed or inserted in the database

Database Action

Connection: myDB Validate

Adaptor Action: Write

Database Write Options

Write Query

```
1 insert into customer (firstName, lastName) values (%%firstName%%, %%lastName%%)
```

Parameters

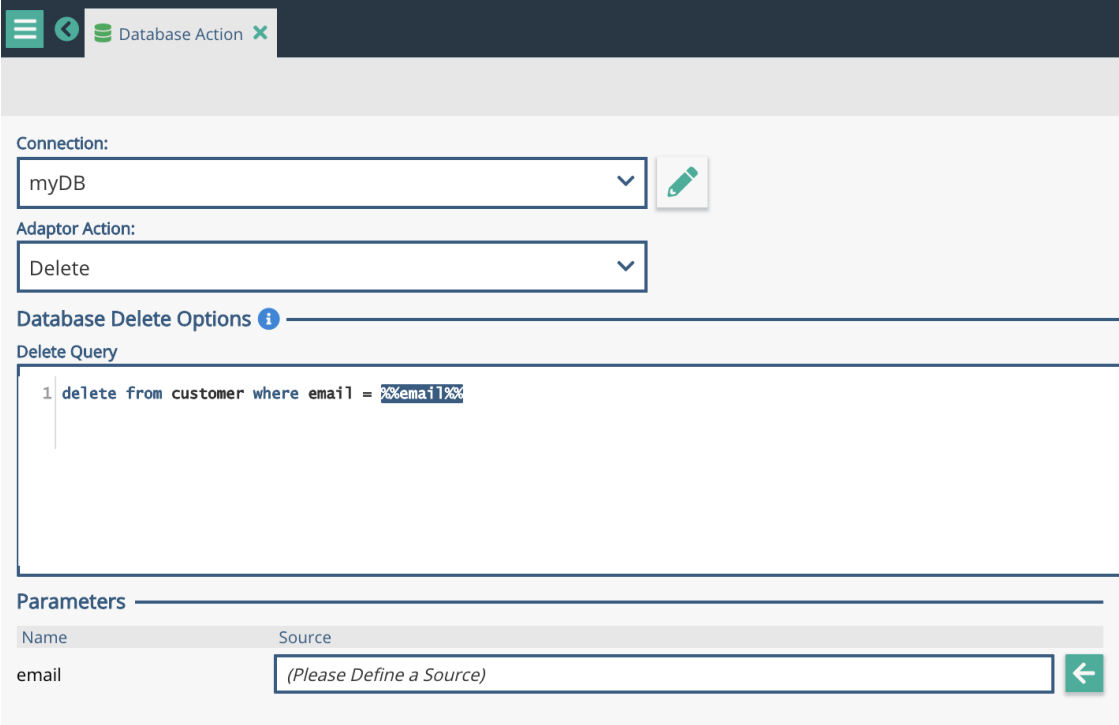
Name	Source
firstName	(Please Define a Source)
lastName	(Please Define a Source)

Output

Content	Destination
Records Changed	(schema)/customer

Delete from a Database

- Choose the database connection
- Choose 'delete' as the action
- Write a 'DELETE' statement in proper format
- Output will be the number of rows deleted in the database



The screenshot shows a web-based configuration interface for a database action. The title bar indicates the window is titled "Database Action".

Connection: A dropdown menu is set to "myDB".

Adaptor Action: A dropdown menu is set to "Delete".

Database Delete Options (with an information icon):

Delete Query: A text area contains the SQL statement: `1 delete from customer where email = %%email%%`

Parameters: A table with two columns: "Name" and "Source".

Name	Source
email	(Please Define a Source)

Listen to a Database

- ◀ Add a listener to a graph
- ◀ Choose the database connection
- ◀ Write the read statement
 - ◀ Use a flag value to select rows
- ◀ SET to update the flag value
- ◀ Define a location in the schema
- ◀ Polls the database every 'Listen Interval' seconds and will select a max rows of 'Max Record Count' every time
- ◀ Many rows can be selected at once
 - ◀ The graph runs each row through the graph one at a time

Listener Editor

Listener Type	Database	Connection (Environment)	myDB
Database Listener Options ⓘ			
Listen Interval:	1	Max Record Count:	1
Listen Query			
<pre>1 select firstName, lastName, email from customer where processed='N'</pre>			
Set Statement (applied to returned results of listen query)			
<pre>1 set processed='Y'</pre>			
Output			
Content	Destination		
Records Selected	(schema)/customer		

Database Troubleshooting

- ⚡ Connection error – test the connection from the admin page to make sure the connection is working, check credentials and the database to make sure it's awake and running properly
- ⚡ Connections come from the Kitewheel engine - is access allowed?
- ⚡ Syntax error – make sure the SQL is using table and field names that actually exist
- ⚡ Syntax error – make sure the '%%param%%' fields are properly filled in the schema when the database adaptor runs
- ⚡ Malformed statement – make sure the SQL statement is properly formatted with all the conditionals it needs
- ⚡ Use 'standard' SQL - don't write database specific statements

The background is a deep blue gradient with a diagonal stripe of a lighter blue shade running from the top right to the bottom left. Several dandelion seeds with their white, feathery parachutes are scattered across the frame, appearing to be in motion. The word "Certification" is centered in a white, sans-serif font.

Certification

Questions

- ⏪ What databases does Kitewheel Support?
- ⏪ Where can those databases be?
- ⏪ What kind of queries does Kitewheel support?
- ⏪ Is * supported in a SELECT?
- ⏪ Is Delete supported?
- ⏪ Are stored procedures supported?
- ⏪ Are upserts supported?
- ⏪ Does Kitewheel provide me with a development database?
- ⏪ Can I connect to more than one database in a single graph?
- ⏪ How do you know how many records have been retrieved?
- ⏪ How do you know how many records have been updated?
- ⏪ Can I perform roll-back transactions?



Thank You