# **Programming Paradigms**

### **Programming Paradigms Survey**

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# **Implementation**

#### **Event-Driven**

- Event-driven programming is a programming paradigm in which the flow of the program is determined by external events.
- Program listens for events and then triggers a callback function when one of those events is detected.
- Control flow is determined mainly by events, such as mouse clicks or interrupts including timer

#### **Procedural**

- Procedural programming is a programming paradigm containing a series of computational steps to be carried out.
- Any given procedure might be called at any point during a program's execution, including by other procedures or itself.





# **Key Features**

### **Event-Driven**

- Event loop
- Event handlers
- Asynchrony

#### **Procedural**

- Scoping
- Sequential
- Functions
- Modularization







```
// RxJS code for handling button click event
import { fromEvent } from 'rxjs';
import { filter } from 'rxjs/operators';
// Get a reference to a button element
const button = document.getElementById('myButton');
// Create an Observable for click events on the button
const clickObservable = fromEvent(button, 'click');
// Subscribe to the click event and react to shift-click
clickObservable.pipe(
  filter(event => event.shiftKey)
).subscribe(() => {
  console.log('Shift-clicked on the button');
});
```

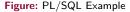
Figure: RxJS Example



## PL/SQL

```
-- Simple PL/SQL procedure to calculate and display salary
CREATE OR REPLACE PROCEDURE calculate salary (employee id NUMBER) IS
  salary NUMBER;
BEGTN
  -- Fetch employee salary from the database
  SELECT emp salary INTO salary FROM employees WHERE emp id = employee
  -- Display the calculated salary
  DBMS OUTPUT.PUT LINE('Calculated salary: ' || salary);
EXCEPTION
  WHEN NO DATA FOUND THEN
    -- Handle case where employee is not found
    DBMS OUTPUT.PUT LINE('Employee not found'):
  WHEN OTHERS THEN
    -- Handle other exceptions
    DBMS_OUTPUT.PUT_LINE('Error occurred');
END calculate salary:
```





### RxJS

### Angular Framework

- Angular is an open-source, JavaScript framework written in TypeScript. Google maintains it, and its primary purpose is to develop single-page applications.
- Angular extensively uses RxJS for handling user interactions, HTTP requests, and managing state through observable services.

### Node.js

- Node. is is an asynchronous event-driven JavaScript runtime engine designed for building scalable network applications.
- Many backend applications use RxJS for handling asynchronous operations, such as handling multiple concurrent requests.



# PL/SQL

#### Microsoft Dynamics 365

- A cloud-based ERP system helping businesses manage their finances, operations, sales, and customer relationships.
- PL/SQL is often used in ERP systems for managing large datasets and executing business rules within the Oracle database.

#### **Data Warehousing**

- Data warehouses are relational environments that are used for data analysis. Organizations use data warehouses to discover patterns and relationships in their data that develop over time.
- PL/SQL plays a crucial role in the transformation phase, where data is cleansed, enriched, and aggregated to meet the analytical requirements of the business.



# Thank You

Thank you for using this.



#### References

```
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https://www.simplilearn.com
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```

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