Leveraging Service Workers
in UI5 Apps

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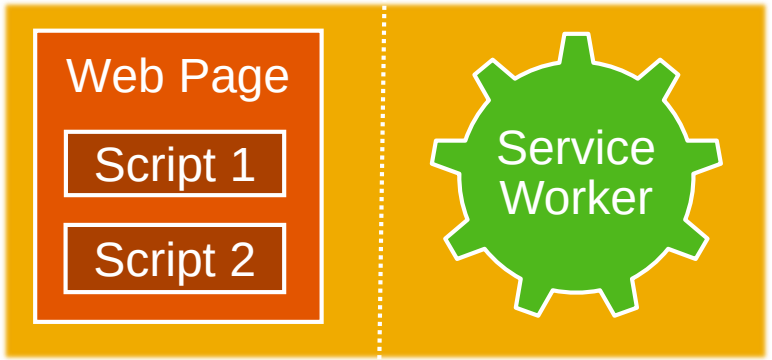
Service Worker?

What is that?

Service Worker

A script running in the background



Separate lifecycle

Programmable network proxy giving control over requests

Limitations

Service Worker

- No DOM access
- One Service Worker per page
- Proxying only async requests
- Terminated when not in use
- Supported in Chrome and Firefox (Edge under development, Safari under consideration)




Available API

Service Worker

IndexedDB for persistence

Window.postMessage for communicating with web page

Navigator for checking state of the user agent

Events:

- '**fetch**' for intercepting requests
- '**push**' for notifications
- '**sync**' for background synchronization

...

```
<script>
    if ('serviceWorker' in navigator) {
        window.addEventListener('load', function() {
            navigator.serviceWorker.register('/service-worker.js');
        });
    }
</script>
```

Use Case 1

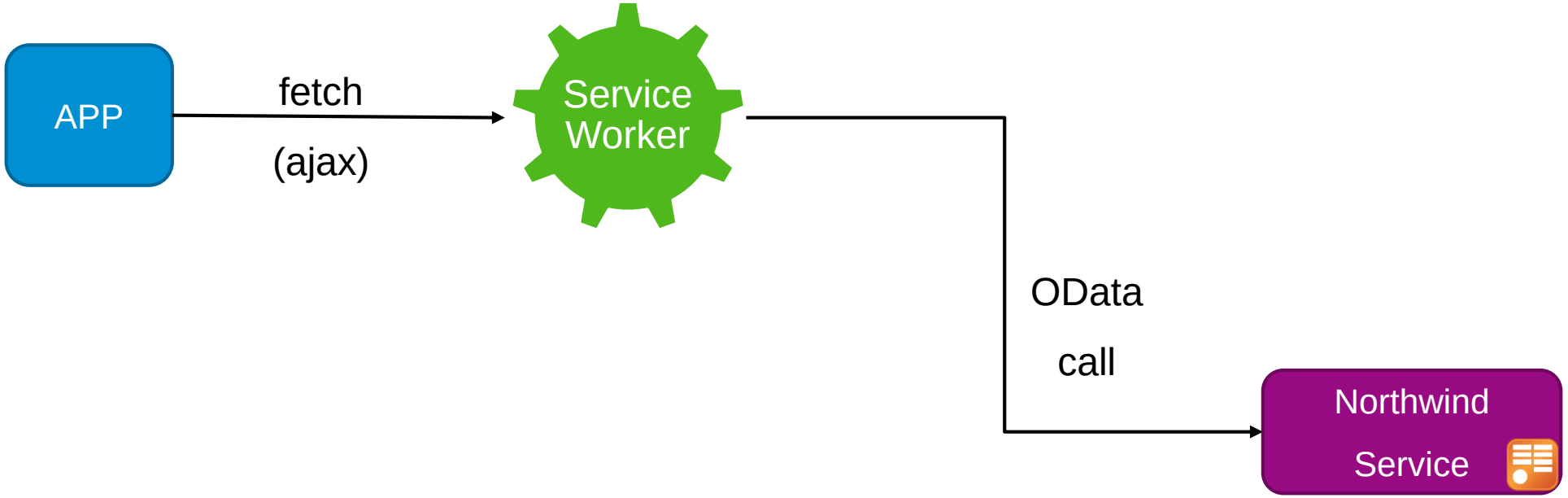
Shopping Cart App - Rerouted

Description

- **About**
  - Shopping app using Northwind OData Service
- **Motivation**
  - Service is not available
  - Change service data without touching app coding
- **Solution**
  - Dynamic rerouting of service requests to fallback REST service
  - Simple translation from OData to REST calls
- **Demo**
  - OData service
  - Swagger REST service
  - Rerouted shopping cart app – Demo

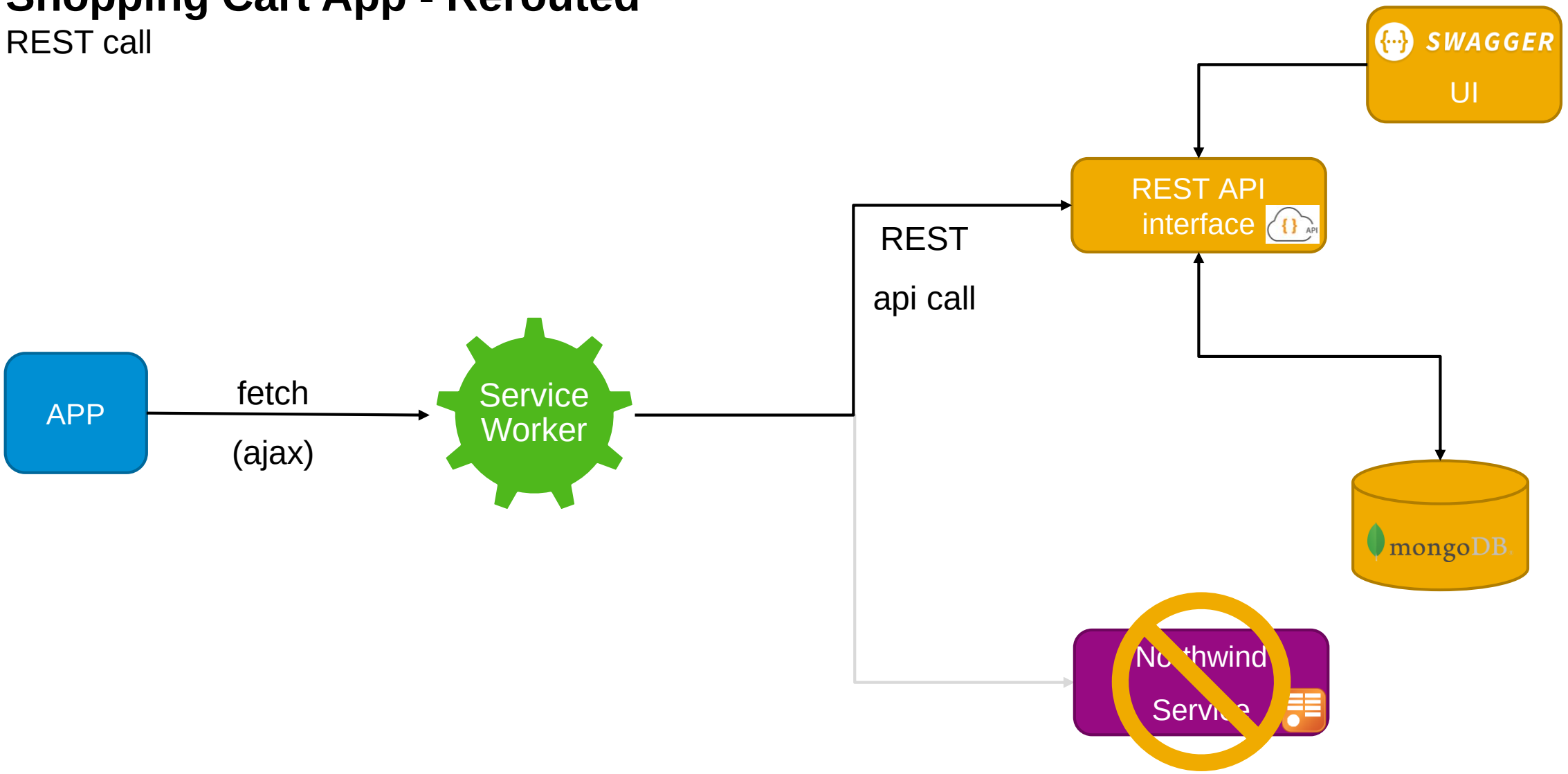
Shopping Cart App - Rerouted

OData call



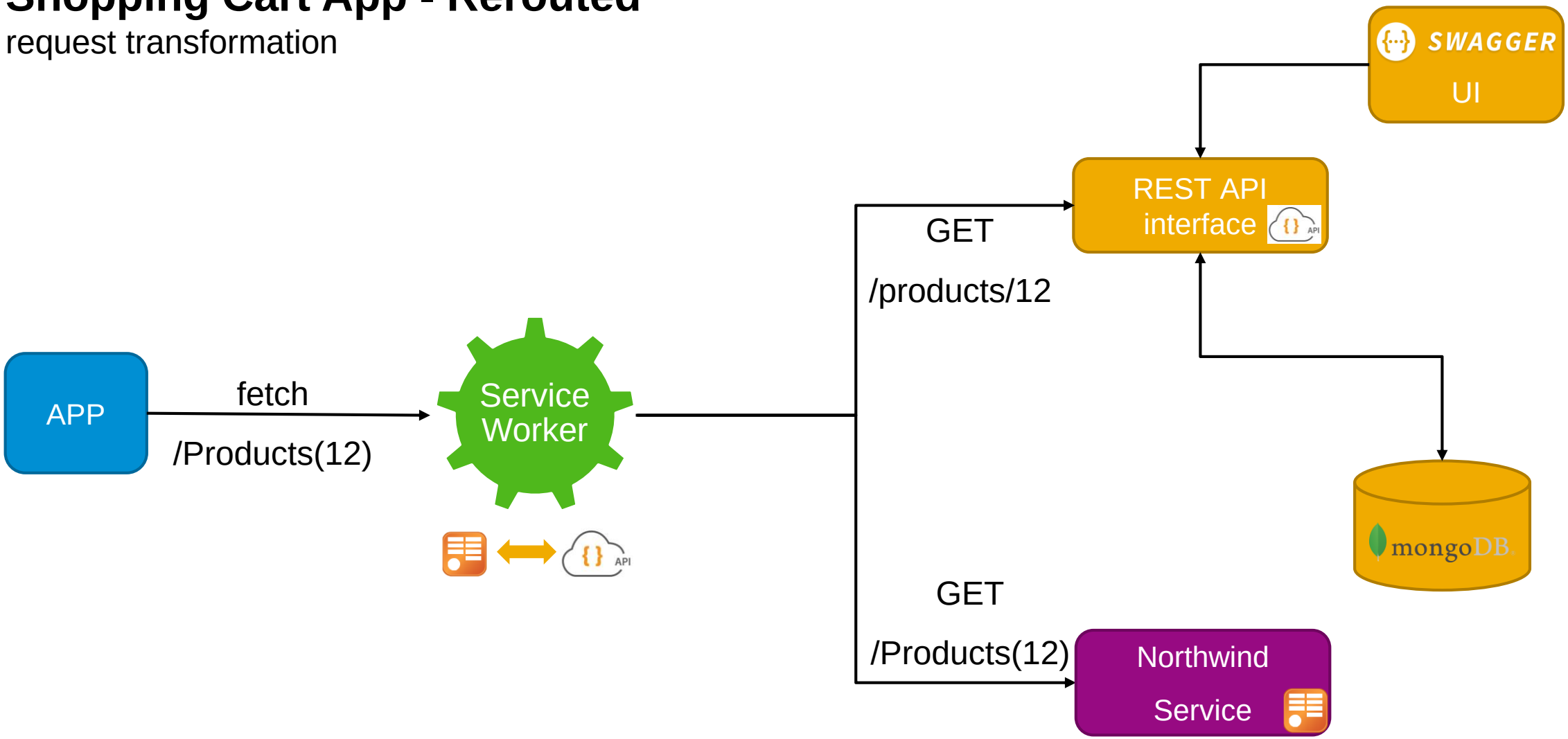
Shopping Cart App - Rerouted

REST call



Shopping Cart App - Rerouted

request transformation

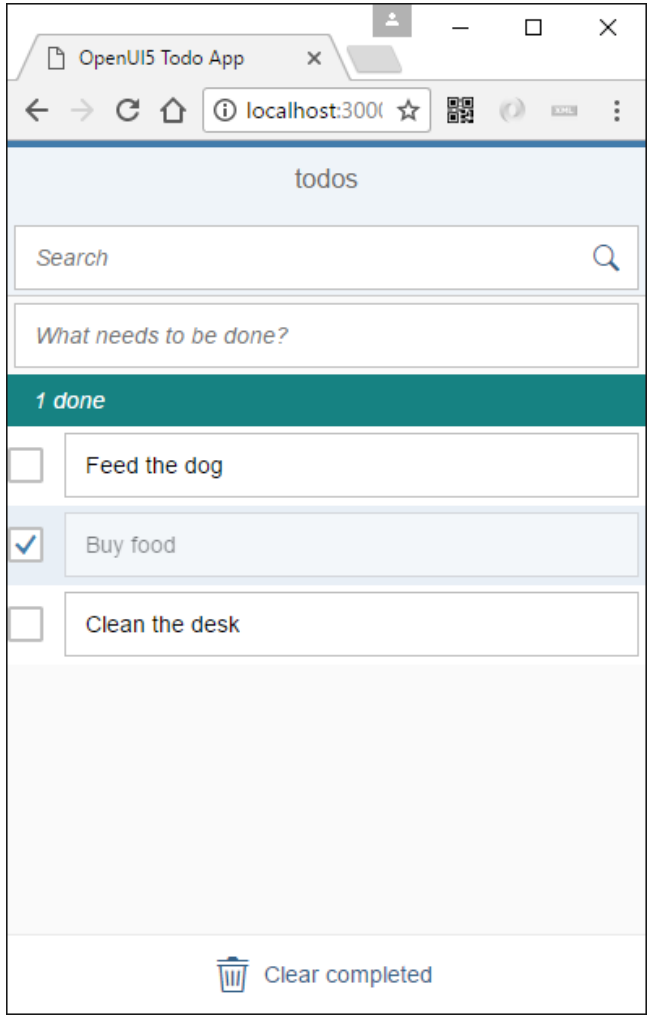


Use Case 2

Offline Todo List

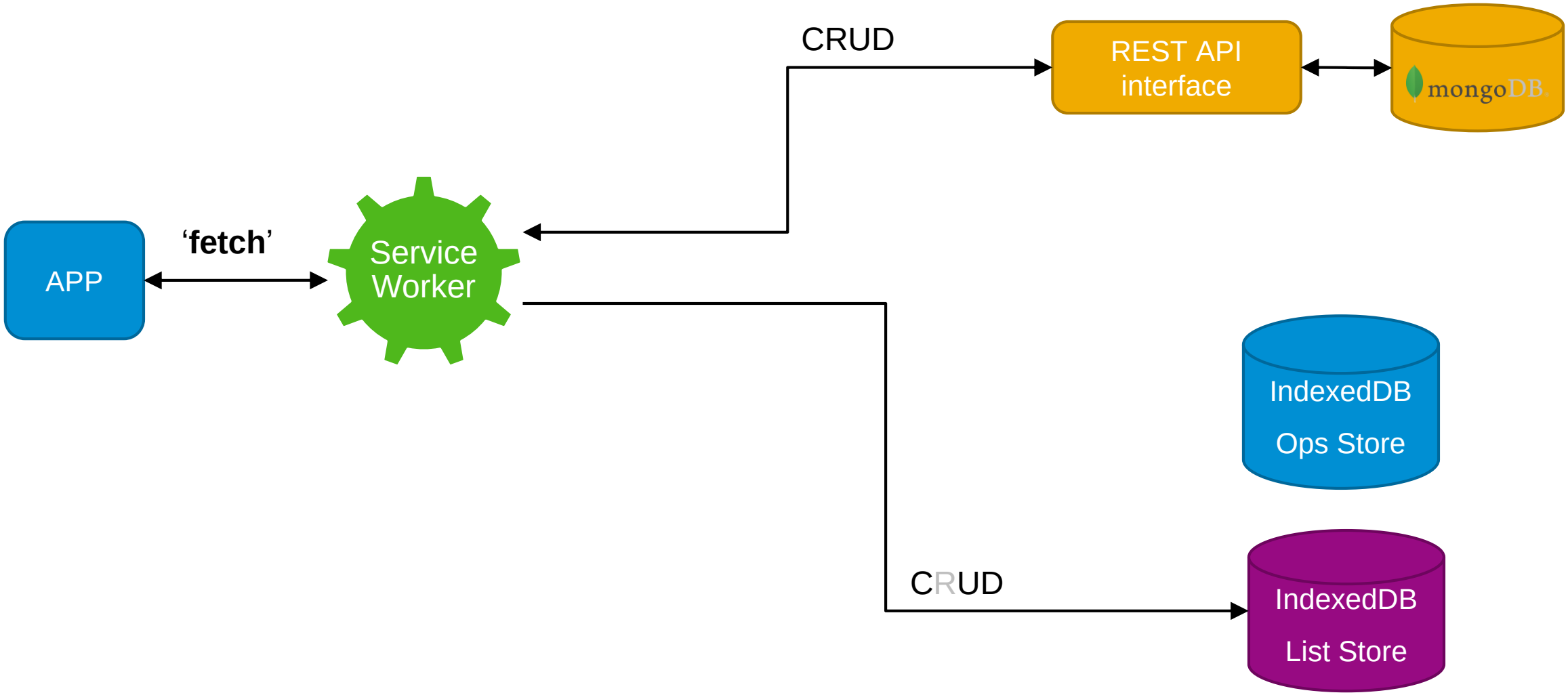
Description

- Todo List for storing todos
- Offline availability of resources
- Automatic synchronization of offline operations
- Seamless User Experience
- MongoDB and IndexedDB for persistence
- Offline Todo List App - Demo



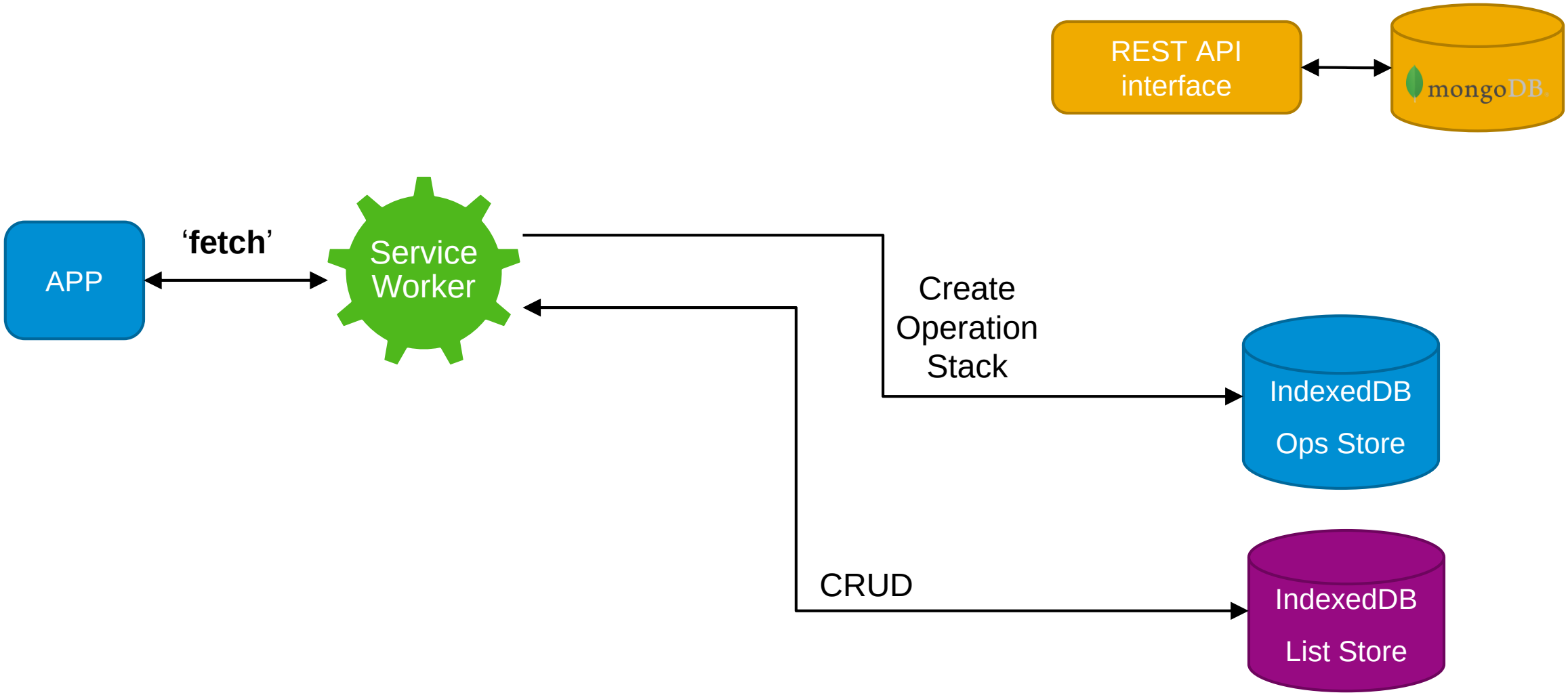
Offline Todo List

Online – Requests to the Service



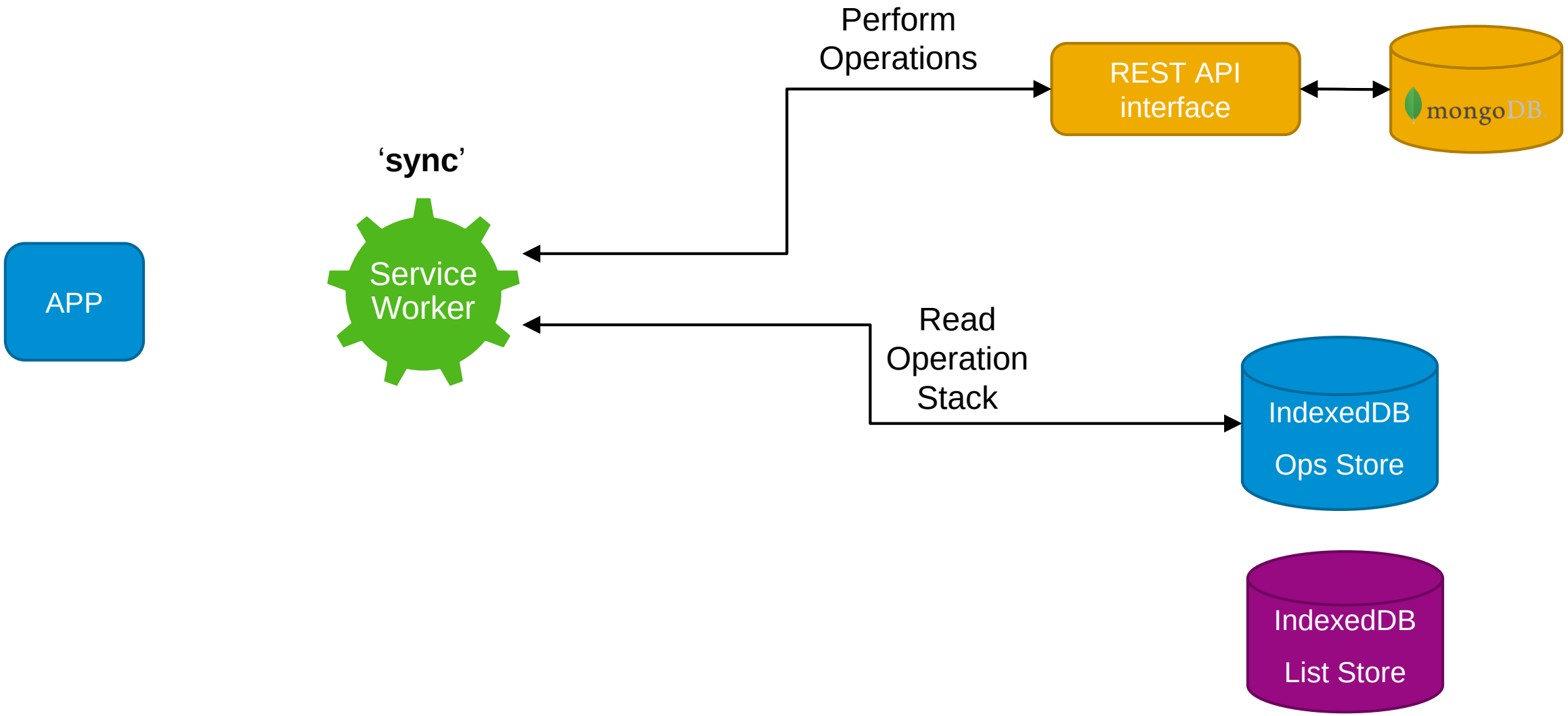
Offline Todo List

Offline – Reroute requests to the IndexedDB



Offline Todo List

Sync – Transition from Offline to Online



The Future?

The Future

Outlook and Opportunities

- Client Side Load Balancing
- Offline Enablement
- Background Synchronization
- Heavy Data Processing
- Precaching of Resources

Goal: Progressive Enhancement of Applications

Thank you.

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