CONFLUENCE UPDATEABLE SQL PLUGIN

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Description

Confluence
Atlassian's Confluence is a commercial-grade enterprise wiki built on Java technologies. Confluence allows developers to build macro plugins that can be used as part of a page. Plugins are typically hosted on the Atlassian Confluence Extensions site where people can download and install any plugin.

SQL Plugin
Xerox makes use of Bob Swift's SQL Plugin to view internal Oracle database tables. The existing plugin allows for various display options but no user interface for editing data. Instead, Xerox makes use of a separate external tool to make changes to the database tables.

Updateable Plugin
Xerox requested an extension to Bob Swift's SQL plugin that would allow them to manipulate the results of their queries. They desired the functionality to insert, update, and delete database rows using one tool, allowing them to simplify the process of editing and viewing table data.

Requirements

Users with view-only permission on a page:
 • Able to see the results of a query
Users with write permission on a page:
 • Edit fields of various types - specialized editors
 • Submit changes for one or more rows at a time
 • Insert rows with fields of various types
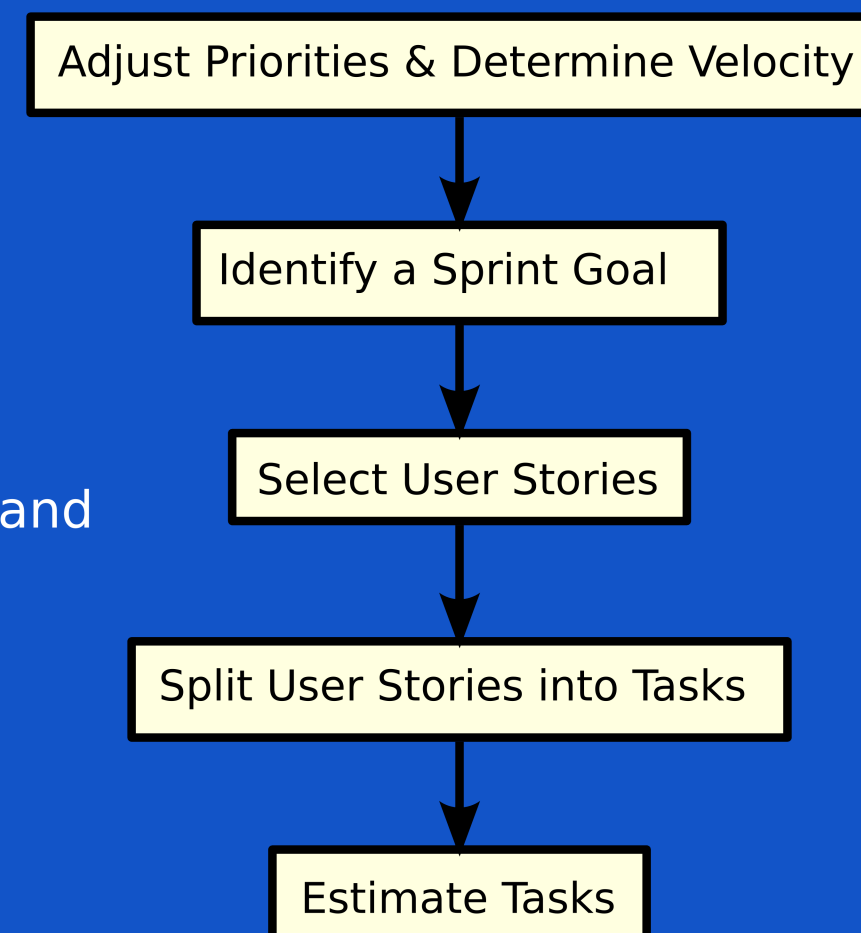 • Delete rows
 • Add macro with SQL SELECT query to a page

Process

Scrum Management:
• Seven two-week long sprints
• Start sprints with planning meetings to demo progress and address any changes
• Planning meetings drive content of sprint and product backlogs
• Team adjusts priorities, identifies a goal, and builds a sprint backlog of tasks from selected user stories
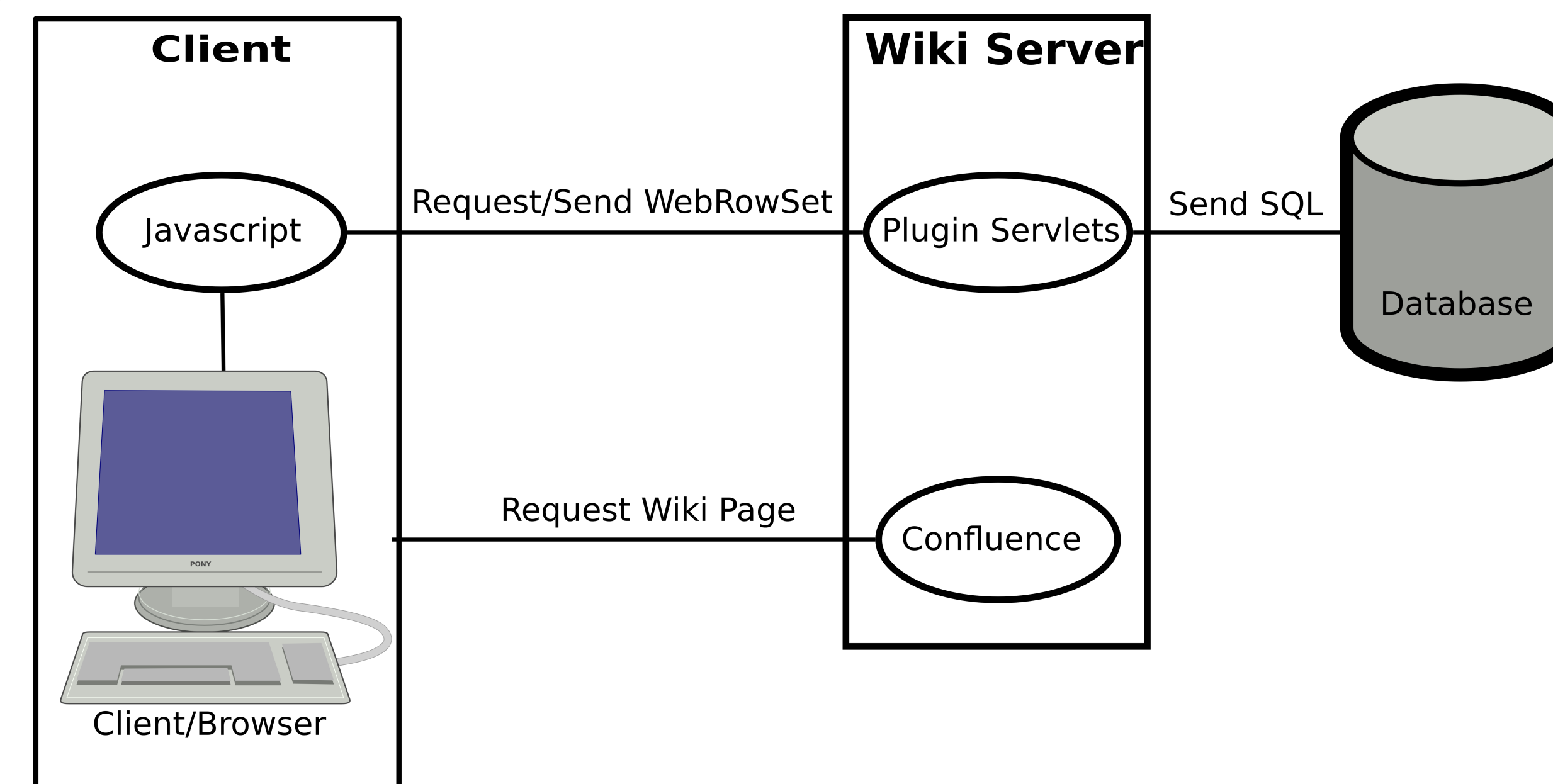
XP Rules and Techniques:
• Pair programming
• Standup/scrum meetings
• Rotating pairs
• Moving people/pairs around tasks
• Velocity measurement
• Simplicity
• Spike solutions
• And more...

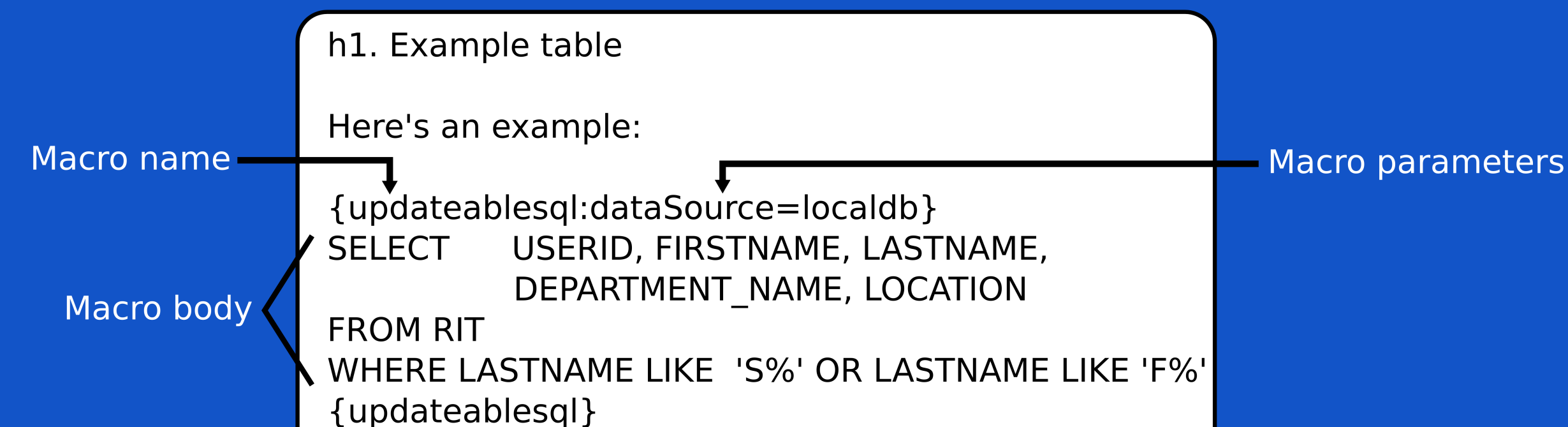Adjust Priorities & Determine Velocity
↓
Identify a Sprint Goal
↓
Select User Stories
↓
Split User Stories into Tasks
↓
Estimate Tasks

24 hours
13 days

High-level System Interactions

Client
Javascript

Client/Browser

Request/Send WebRowSet

Wiki Server
Plugin Servlets

Send SQL

Database

Request Wiki Page

Confluence

• Confluence macros cannot maintain state information, forcing plugins to use Servlets for performing user actions
• Macro outputs HTML, including JavaScript, to request data, build tables, and enable editing
• Servlets built around JDBC WebRowSet which encapsulates database data, metadata, and operations in XML
• JavaScript requests an initial WebRowSet containing the query results
• WebRowSet is modified as user performs edits, inserts, and deletes
• WebRowSet is sent back to Servlets with changes from user actions where underlying JDBC components convert the XML into SQL statements

Macro Example

Macro name
Macro body
Macro parameters

```
h1. Example table

Here's an example:

{updateablesql:dataSource=localdb}
SELECT    USERID, FIRSTNAME, LASTNAME,
          DEPARTMENT_NAME, LOCATION
FROM RIT
WHERE LASTNAME LIKE  'S%' OR LASTNAME LIKE 'F%'
{updateablesql}
```

Confluence Output:

Example table
Here's an example:

Error: Invalid number input expecting: NUMBER(0,0) ✕

Refresh Table Data

Technology

Java, Servlets	Confluence is developed on Java technology and allows plugins to register Servlets to perform desired functionality
JDBC, WebRowSet	WebRowSet encapsulates JDBC operations and data across many database platforms in XML
XML, XPath	XML is used by WebRowSet and easily searched with XPath and manipulated within a DOM
Javascript JQuery, JQuery UI	Allows the plugin to handle WebRowSet requests from the client and facilitates rich user interface interactivity
Velocity	Velocity is a simple Java templating language used to generate Macro output in many Confluence plugins
JUnit, HttpUnit, QUnit	JUnit and QUnit are used for testing Java and Javascript code. HttpUnit allows for the simulation of Servlet requests within JUnit tests
Maven	Maven is the build platform used to manage dependencies and automate many Confluence development tasks
Oracle, MySQL	Support for both Oracle and MySQL, Oracle support was required by Xerox
Atlassian Plugin API	API for adding Servlets and macros to a Confluence instance, including Maven project archetypes and tasks

Metrics

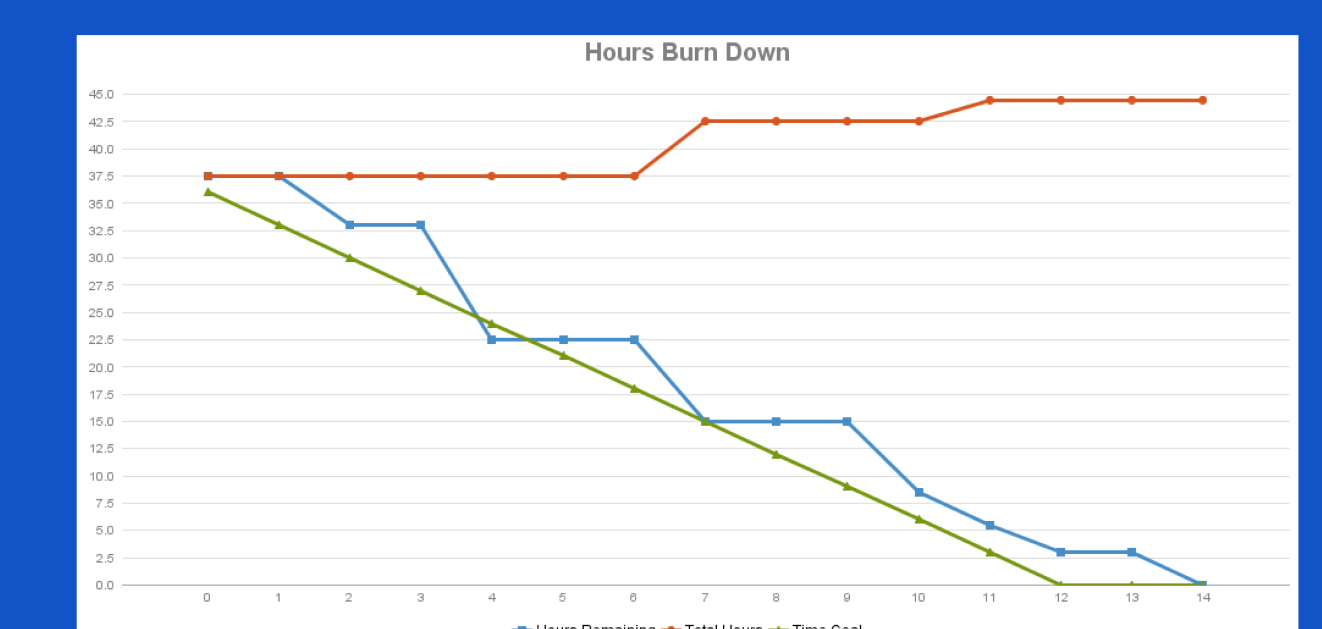|	
Velocity	Velocity is how much work has been completed previously, and is used to estimate future user story capacity
User Story Status	Breakdown for each story with status of In Progress, Impeded, or Completed help monitor progress and issues
Test Pass Fail	Having passing tests for each user story helps to confirm their completion and detect regressions
Time / Activity Tracking	Time / Activity tracking helps to better balance time to complete sprint goals while satisfying department requirements
Burn Down	A burn down chart is used within each sprint to compare hours worked to the sprint target hours
Sprint 5 burn down chart	

Hours Burn Down

Challenges