



Unit 1

MarkLogic in a Three Tiered Architecture

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Learning Objectives

- Install MarkLogic and describe lab environment dependencies.
- Describe the goals, uses, and functionality of Samplestack.
- Describe the reference architecture for Samplestack.
- Run Samplestack on the middle tier and browser tier.
- Explore Samplestack as an end user.
- Explore helpful resources for the Node.js Developer.

Samplestack

- An end-to-end three-tiered application with implementations in Java and Node.js
- Encapsulates best practices and introduces key MarkLogic concepts
- Use sample code as a model for building applications more efficiently
- Modern technology stack demonstrates how MarkLogic can fit in your existing Enterprise environment

Samplestack unlocks MarkLogic's power

- This unit will explore access methods to MarkLogic data via the fluent Node.js API.
- This unit will emphasize the advantages of tiered services, particularly the role of the middle tier for authentication and business services, and will highlight the interactions of the middle tier with the front-end and the database.
- This unit will show you how to make data modeling easier using relationships and native document formats (JSON, POJOs and RDF in addition to XML).
- This unit will demonstrate MarkLogic's built-in search and indexing capabilities at work in a realistic enterprise application.

Every feature teaches a MarkLogic concept

Application Feature	MarkLogic Concept
Full-text Search	→ Indexes, query styles
Facets	→ Search constraints, analytics
Users & Roles	→ Authentication, security, privileges
Restricted Content	→ Document permissions
Ask, Answer, Comment	→ Document updates
Voting	→ Updates impact search relevance
Accepted Answers & Reputation	→ Transactional model, data integrity
Related tags	→ Semantics
User records and Q&A documents	→ Data Model for JSON and POJOs

GitHub Development

- <https://github.com/marklogic/marklogic-samplestack>
- Open Development on GitHub
 - Transparency!
- What does this mean for external involvement?
 - Responsive!
 - We are set up to receive contributions (CLA) – internal and external
- Changes Engineering/Product relationship with outside participants

Samplestack

Log In

Ask a Question

Search the Stack!... Search

Search Tips

Full-text Search ...
Indexes and query

Users & Roles ...
Authentication,
security,
privileges

Q&A documents,
user records ...
Data Model for
JSON and POJOs

Facets...
Search
constraints,
analytics

Browsing 27,348 Questions

What does the yield keyword do in Python?

Python Javascript Node.js

node.js + nginx - And now?

Javascript Node.js Nginx

What is the purpose of Node.js module.exports and how do you use it?

Javascript Node.js

How do I get PyCharm to show method signatures and documentation in the Python/IPython console and the editor?

Javascript Node.js Python IPython PyCharm

Node.js on multi-core machines?

Javascript Node.js

How do you extract POST data in node.js?

Asked 54s ago by Vortico [68]

Asked 34s ago by habib_101 [12]

Asked 54s ago by Vortico [68]

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Samplestack

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What does the yield keyword do in Python?

What is the use of the yield keyword in Python? What does it do?

For example, I'm trying to understand this code (**):

```
def node._get_child_candidates(self, distance, min_dist, max_dist):
    if self._leftchild and distance - max_dist > self._median:
        yield self._leftchild
    if self._rightchild and distance + max_dist <= self._median:
        yield self._rightchild
```

And this is the caller:

```
result, candidates = list(), [self]
while candidates:
    node = candidates.pop()
    distance = node._get_dist(obj)
    if distance >= max_dist and distance <= min_dist:
        result.extend(node._values)
    candidates.extend(node._get_child_candidates(distance, min_dist, max_dist))
return result
```

What happens when the method `_get_child_candidates` is called? A list is returned? A single element is returned? Is it called again? When subsequent calls do stop?

python iterator generator yield

Asked 27s ago by Squat Chimo [1]

Add Comment

14 Answers

NewestVotes

View on Stackoverflow

Voting ... Updates
impact search
relevance

Ask, Answer,
Comment...
Document
updates

Accepted
Answers &
Reputation
System...
Transactional
model, data
integrity

User Interface

Data views, user workflow

Middleware

Business rules, domain model, integration

Database

Persistent state, stored procedures



Business Services

- Resources (Customer, Approval, etc.)
- JSON over HTTP

Data Services

- Documents, collections, elements
- JSON/XML over HTTP

Service Layer

Orchestration, messaging

Middleware

Business rules, domain model, integration

Database

Persistent state, stored procedures

Security, Monitoring, Config Mgmt



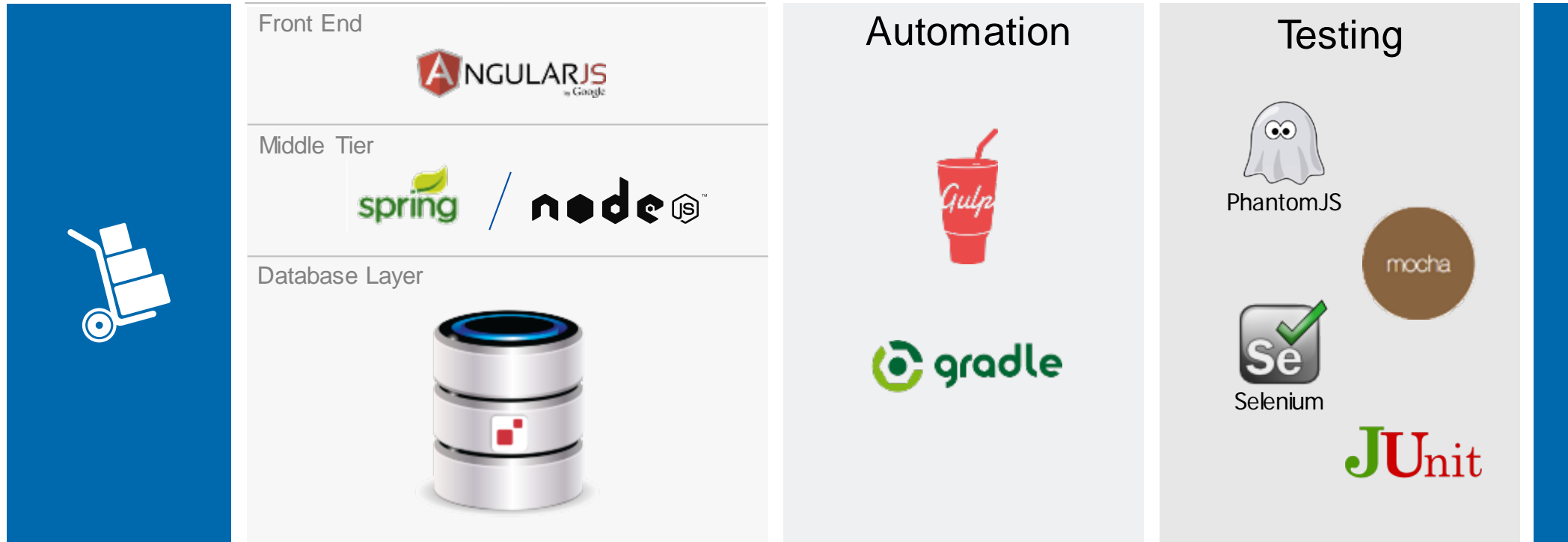
Business Services

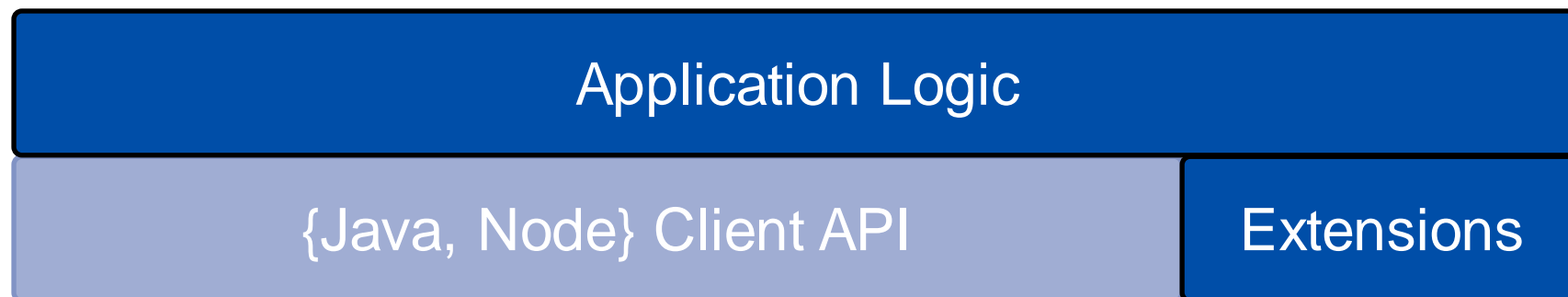
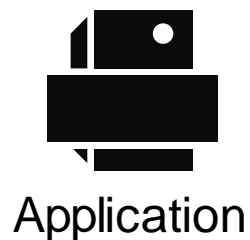
- Resources (Customer, Approval, etc.)
- JSON over HTTP

Data Services

- Documents, collections, elements
- JSON/XML over HTTP

Technology Stack

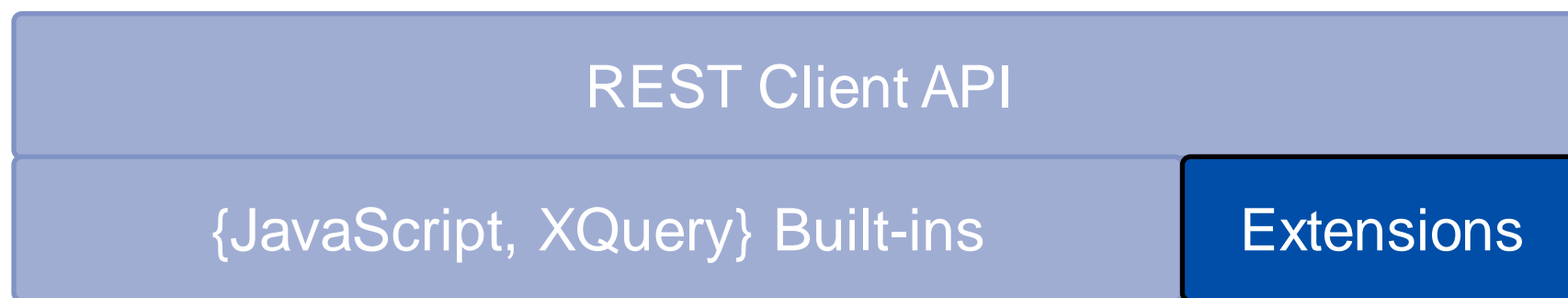




*Network, I/O,
Transactions, Builders,
Marshaling, Exceptions ...*



HTTP Data Services



 User code  Framework code

Node.js API Key Capabilities

- Bulk write and read
- Patch updates
- Extensions
 - Resource
 - Transformation
 - Eval / Invoke
- Semantics
- Search
 - Query
 - By example
 - Structured
 - String
 - Projection
 - Snippets
 - Sorts
 - Pagination
 - Highlights

Deploy in every environment

- Increase flexibility by reusing existing skills, tools
- Minimize integration costs with a pure Node.js interface
- Maximize performance by bringing code to the data
- Scale up (or down) without modifying application code
- Build, test, instrument, debug with standard tools

Node.js API Documentation

- MarkLogic product documentation:
 - docs.marklogic.com
- MarkLogic Node.js Developer Guide:
 - <http://docs.marklogic.com/guide/node-dev>
- MarkLogic JSdoc:
 - <https://www.npmjs.com/package/marklogic>
- General Node.js API Documentation
 - <https://nodejs.org/api/>

The Lab Environment: What's Been Setup For You

- MarkLogic installed, service started (developer.marklogic.com)
- Atom editor installed (free, great editor for writing code)
- Node.js installed (nodejs.org, v0.10.33)
- NPM installed (npmjs.org, v2.1.11)
- Gulp installed (npm install gulp -g)
- Samplestack project has been cloned & setup as documented here:
 - <https://github.com/marklogic/marklogic-samplestack>

Demo: Samplestack Introduction

Labs: Unit 1

Exercise 1: Launch Samplestack

Exercise 2: Explore Samplestack

Exercise 3: Explore Node.js Client API Resources

Exercise 4: Create a Simple Node.js App

Exercise 5: Create a Simple Front-End



Unit Review Question 1:

Samplestack is a reference application that shows how to use MarkLogic and the Node.js client API to perform:

1. Full text and semantic search
2. Document updates
3. Document security
4. Automated configuration and deployment
5. All of the above



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Samplestack is a reference application that shows how to use MarkLogic and the Node.js client API to perform:

1. Full text and semantic search
2. Document updates
3. Document security
4. Automated configuration and deployment
5. **All of the above**



Unit Review Question 2:

AngularJS must be used as the front-end technology to build a 3 tier application using MarkLogic and Node.js:

1. True
2. False



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AngularJS must be used as the front-end technology to build a 3 tier application using MarkLogic and Node.js:

1. True
2. **False**



Unit Review Question 3:

In order to communicate between a Node.js application and the MarkLogic database you must have:

1. A MarkLogic REST instance
2. The Atom editor installed
3. Performed an “npm install marklogic” for your project
4. Both #1 and #3
5. All of the above



Unit Review Question 3:

In order to communicate between a Node.js application and the MarkLogic database you must have:

1. A MarkLogic REST instance
2. The Atom editor installed
3. Performed an “npm install marklogic” for your project
4. **Both #1 and #3**
5. All of the above



Unit Review Question 4:

In a 3 tiered architecture with MarkLogic as the database, you can write server side code and extensions using:

1. PHP
2. Java
3. JavaScript
4. Python



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1. PHP
2. Java
3. **JavaScript**
4. Python