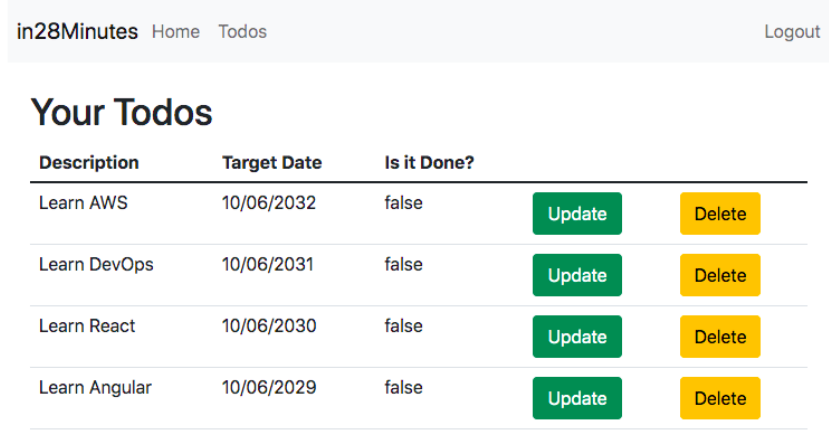
In28 Minutes

Spring Boot
REST API

Introduction to REST

- **REST**: Representational State Transfer
  - Architectural style for the web (makes use of HTTP)
- **Key abstraction** - Resource
  - Todo Management Application
    - Examples: Users, Todos
  - Resource has **URI (Uniform Resource Identifier)**
    - /users/Ranga - *(/users/{id})*
    - /users/Ranga/todos - *(/users/{id}/todos)*
    - /users/Ranga/todos/1 - *(/users/{id}/todos/{id})*
  - You can perform **ACTIONS** on resources:
    - Retrieve/Add/Update/Delete Todo
    - Retrieve/Add/Update/Delete User
  - Resource can have different **REPRESENTATIONS**
    - JSON, XML (JSON - most popular)



Request Methods for REST API

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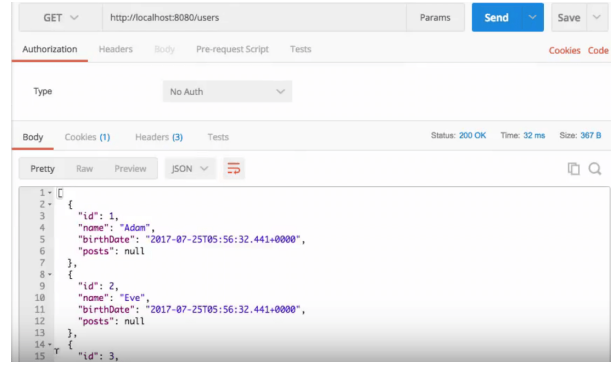
- **GET** - Retrieve details of a resource
- **POST** - Create a new resource
- **PUT** - Update an existing resource
- **PATCH** - Update part of a resource
- **DELETE** - Delete a resource



Response Status for REST API

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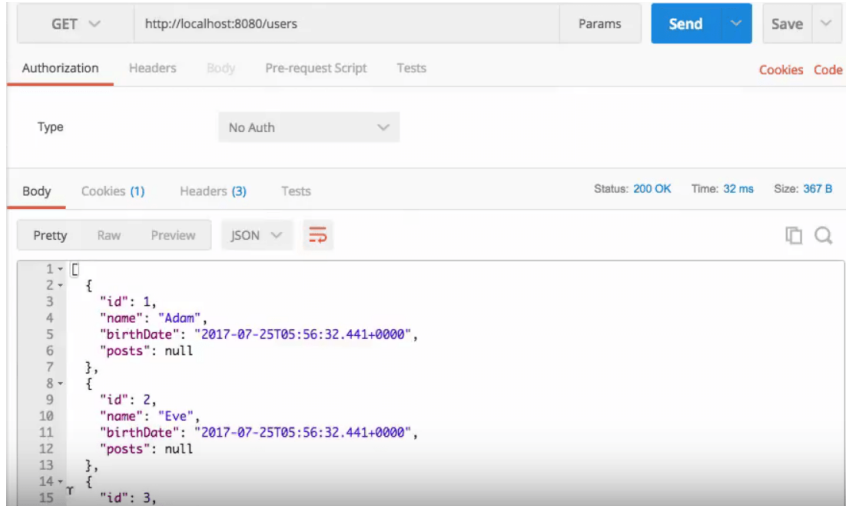
- Return the **correct response status**
  - Resource is not found => 404
  - Server exception => 500
  - Validation error => 400
- **Important Response Statuses**
  - **200** — Success
  - **201** — Created
  - **204** — No Content
  - **401** — Unauthorized (when authorization fails)
  - **400** — Bad Request (such as validation error)
  - **404** — Resource Not Found
  - **500** — Server Error



Survey Questionnaire REST API

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- Build a REST API for Survey Questionnaire
- **Key Resources:**
  - Surveys
  - Survey Questions
- **Key Details:**
  - Survey: id, title, description, question
  - Survey Questions: id, description, options, correctAnswer

Survey Questionnaire REST API - Resources and Methods

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- **Survey REST API:**
  - Retrieve All Surveys
    - **GET /surveys**
  - Retrieve Specific Survey
    - **GET /surveys/{surveyId}**
- **Survey Questions REST API:**
  - Retrieve Survey Questions
    - **GET /surveys/{surveyId}/questions**
  - Retrieve Specific Survey Question
    - **GET /surveys/{surveyId}/questions/{questionId}**
  - Add Survey Question
    - **POST /surveys/{surveyId}/questions**
  - Delete Survey Question
    - **DELETE /surveys/{surveyId}/questions/{questionId}**
  - Update Survey Question
    - **PUT /surveys/{surveyId}/questions/{questionId}**

Slides For Future

Constraints defined by REST

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- **Client - Server** : Server (service provider) separated from client (service consumer)
  - **Benefits**: Loose coupling, Independent evolution of server and client (as new technologies emerge)
- Each service should be **stateless**
- Each Resource has a **resource identifier**
  - /users/Ranga - *(/users/{id})*
  - /users/Ranga/todos - *(/users/{id}/todos)*
  - /users/Ranga/todos/1 - *(/users/{id}/todos/{id})*
- **Caching response** should be possible
- Resource can have **multiple representations**
  - Resource can modified through a message in any of the these representations