

HTTP Request and Response Types



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Overview



Refactor InventoryFindFunction

Create and use HTTP Request object

Create and use HTTP Response object

Set up API Gateway Proxy



Demo



Refactor InventoryFindFunction

Test InventoryFindFunction



Demo



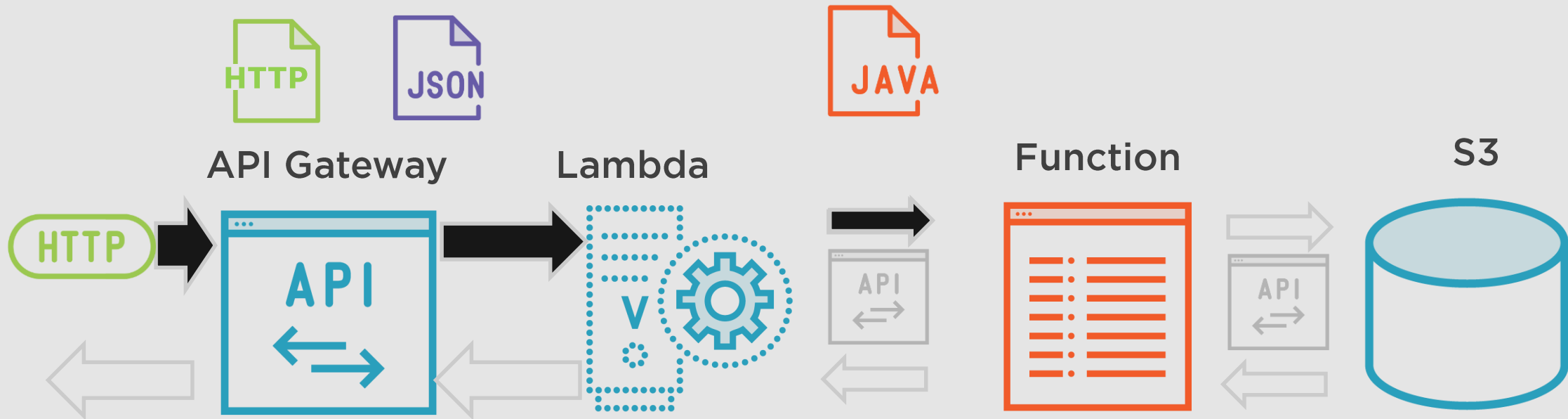
Learn how an HTTP Request maps to JSON

How JSON is mapped to a Java request object

Implement the HTTP Request class



Invoking the InventoryFindFunction



JSON

```
{
  "input": {
    {
      "resource": "/",
      "path": "/test/",
      "httpMethod": "GET",
      "headers": {
        "Accept": "*/*",
        "Accept-Encoding": "gzip, deflate",
        "cache-control": "no-cache",
        "Host": "v64gkv2rdc.execute-api.
                us-east-2.amazonaws.com",
      }
    }
    "queryStringParameters": {
      "name": "ID",
      "multivalueName": "101"
    }
  }
}
```

HTTP Request

GET /test?id=101 HTTP/1.1

Host: lxj7dolm35.execute-api.us-east-2.amazonaws.com

User-Agent: PostmanRuntime/7.13.0

Accept: */*

accept-encoding: gzip, deflate

Cache-Control: no-cache

Host: lxj7dolm35.execute-api.us-east-2.amazonaws.com

Postman-Token: 9f583ef0-e3f7a57f

Connection: keep-alive

cache-control: no-cache



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```

POJO

```
package com.handy.aws.functions;

public class HttpQuerystringRequest {

}
```



JSON

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  "input": {
    {
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      "httpMethod": "GET",
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    }
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}
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  }  
}
```

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package com.handy.aws.functions;
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```
public class HttpQueryStringRequest {  
  
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JSON

```
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  "input": {  
    {  
      "resource": "/",  
      "path": "/test/",  
      "httpMethod": "GET",  
      "headers": {...}  
    }  
    "queryStringParameters": {  
      { "name": "ID",  
        "multivalueName": "101" },  
      { "name": "region",  
        "multivalueName": "West-Coast" },  
      { "name": "country",  
        "multivalueName": "US" }  
    }  
  }  
}
```

POJO

```
package com.handy.aws.functions;
```

```
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JSON

```
{
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```
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    { "name": "ID",
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  }
}
```

POJO

```
package com.handy.aws.functions;
```

```
import java.util.Map;
```

```
public class HttpQuerystringRequest {
```

```
    Map<String, String> queryStringParameters;
```

```
}
```



JSON

```
{
  "input": {
    {
      "resource": "/",
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      "headers": {...}
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    "queryStringParameters": {
      { "name": "ID",
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      { "name": "region",
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    }
  }
}
```

POJO

```
package com.handy.aws.functions;


import java.util.Map;

public class HttpQueryStringRequest {

    Map<String, String> queryStringParameters;

    public void setQueryStringParameters(
        Map<String, String> queryStringMap) {

        queryStringParameters =
            queryStringMap;
    }
}
```



JSON

```
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  "input": {
    {
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}
```

POJO

```
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import java.util.Map;

public class HttpQueryStringRequest {


    Map<String, String> queryStringParameters;

    public Map<String, String>
        getQueryStringParameters() {

        return queryStringParameters;
    }

    public void setQueryStringParameters(
        Map<String, String> queryStringsMap) {

        queryStringParameters =
            queryStringsMap;
    }
}
```



Demo



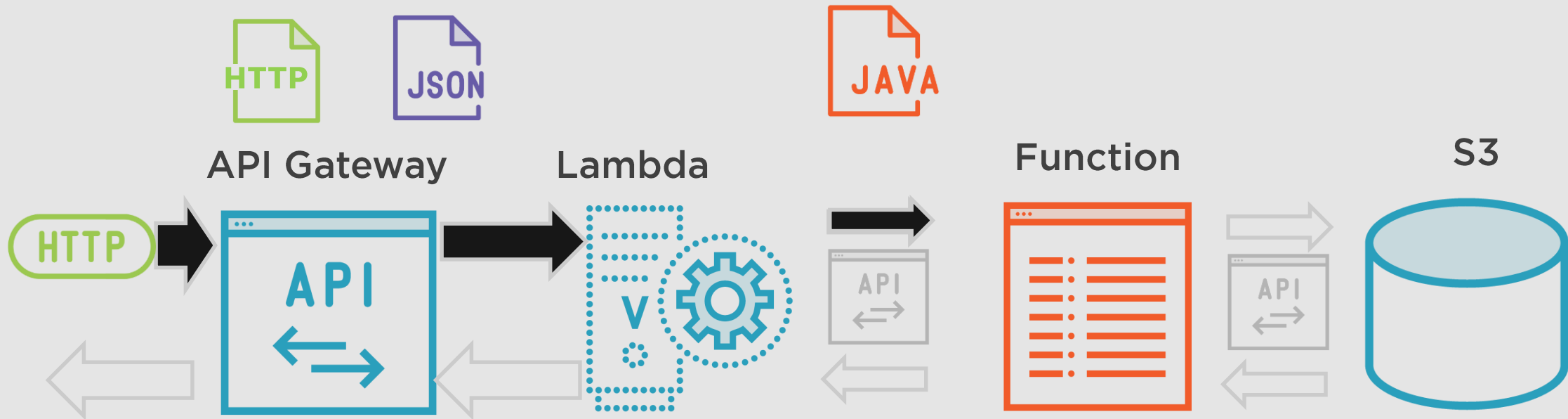
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        "Accept-Encoding": "gzip, deflate",
        "cache-control": "no-cache",
        "Host": "v64gkv2rdc.execute-api.
                us-east-2.amazonaws.com",
      }
    }
    "queryStringParameters": {
      "name": "ID",
      "multivalueName": "101"
    }
  }
}
```

HTTP Request

GET /test?id=101 HTTP/1.1

Host: lxj7dolm35.execute-api.us-east-2.amazonaws.com

User-Agent: PostmanRuntime/7.13.0

Accept: */*

accept-encoding: gzip, deflate

Cache-Control: no-cache

Host: lxj7dolm35.execute-api.us-east-2.amazonaws.com

Postman-Token: 9f583ef0-e3f7a57f

Connection: keep-alive

cache-control: no-cache



JSON

```
{
  "input": {
    {
      "resource": "/",
      "path": "/test/",
      "httpMethod": "GET",
      "headers": {
        "Accept": "*/*",
        "Accept-Encoding": "gzip, deflate",
        "cache-control": "no-cache",
        "Host": "v64gkv2rdc.execute-api.
                us-east-2.amazonaws.com",
      }
    }
  }
  "queryStringParameters": {
    "name": "ID",
    "multivalueName": "101"
  }
}
```

HTTP Request

GET /test?id=101 HTTP/1.1

Host: 1xj7dolm35.execute-api.us-east-2.amazonaws.com

User-Agent: PostmanRuntime/7.13.0

Accept: */*

accept-encoding: gzip, deflate

Cache-Control: no-cache

Host: 1xj7dolm35.execute-api.us-east-2.amazonaws.com

Postman-Token: 9f583ef0-e3f7a57f

Connection: keep-alive

cache-control: no-cache



JSON

```
{
  "input": {
    {
      "resource": "/",
      "path": "/test/",
      "httpMethod": "GET",
      "headers": {
        "Accept": "*/*",
        "Accept-Encoding": "gzip, deflate",
        "cache-control": "no-cache",
        "Host": "v64gkv2rdc.execute-api.
                us-east-2.amazonaws.com",
      }
    }
  }
  "queryStringParameters": {
    "name": "ID",
    "multivalueName": "101"
  }
}
```

HTTP Request

GET /test?id=101 HTTP/1.1

Host: 1xj7dolm35.execute-api.us-east-2.amazonaws.com

User-Agent: PostmanRuntime/7.13.0

Accept: */*

accept-encoding: gzip, deflate

Cache-Control: no-cache

Host: 1xj7dolm35.execute-api.us-east-2.amazonaws.com

Postman-Token: 9f583ef0-e3f7a57f

Connection: keep-alive

cache-control: no-cache



JSON

```
{
  "input": {
    {
      "resource": "/",
      "path": "/test/",
      "httpMethod": "GET",
      "headers": {
        "Accept": "*/*",
        "Accept-Encoding": "gzip, deflate",
        "cache-control": "no-cache",
        "Host": "v64gkv2rdc.execute-api.
                  us-east-2.amazonaws.com",
      }
    }
    "queryStringParameters": {
      "name": "ID",
      "multivalueName": "101"
    }
  }
}
```

POJO

```
package com.handy.aws.functions;

public class HttpQuerystringRequest {

}
```



JSON

```
{
  "input": {
    {
      "resource": "/",
      "path": "/test/",
      "httpMethod": "GET",
      "headers": {...}
      "queryStringParameters": {
        "name": "ID",
        "multivalueName": "101"
      }
    }
  }
}
```

POJO

```
package com.handy.aws.functions;
```

```
public class HttpQueryStringRequest {
}
}
```



JSON

```
{  
  "input": {  
    {  
      "resource": "/",  
      "path": "/test/",  
      "httpMethod": "GET",  
      "headers": {...}  
    }  
    "queryStringParameters": {  
      "name": "ID",  
      "multivalueName": "101"  
    }  
  }  
}
```

POJO

```
package com.handy.aws.functions;
```

```
public class HttpQueryStringRequest {  
  
}
```



JSON

```
{
  "input": {
    {
      "resource": "/",
      "path": "/test/",
      "httpMethod": "GET",
      "headers": {...}
    }
  }
}
```

POJO

```
package com.handy.aws.functions;
```

```
public class HttpQueryStringRequest {
}

```



JSON

```
{
  "input": {
    {
      "resource": "/",
      "path": "/test/",
      "httpMethod": "GET",
      "headers": {...}
    }
  }
}
```

POJO

```
package com.handy.aws.functions;

import java.util.Map;

public class HttpQuerystringRequest {

    Map<String, String> queryStringParameters;
}
```



JSON

```
{
  "input": {
    {
      "resource": "/",
      "path": "/test/",
      "httpMethod": "GET",
      "headers": {...}
    }
    "queryStringParameters": {
      { "name": "ID",
        "multivalueName": "101" },
      { "name": "region",
        "multivalueName": "West-Coast" },
      { "name": "country",
        "multivalueName": "US" }
    }
  }
}
```

POJO

```
package com.handy.aws.functions;


import java.util.Map;

public class HttpQueryStringRequest {

    Map<String, String> queryStringParameters;

    public void setQueryStringParameters(
        Map<String, String> queryStringMap) {

        queryStringParameters =
            queryStringMap;
    }
}
```



JSON

```
{
  "input": {
    {
      "resource": "/",
      "path": "/test/",
      "httpMethod": "GET",
      "headers": {...}
    }
    "queryStringParameters": {
      { "name": "ID",
        "multivalueName": "101" },
      { "name": "region",
        "multivalueName": "West-Coast" },
      { "name": "country",
        "multivalueName": "US" }
    }
  }
}
```

POJO

```
package com.handy.aws.functions;

import java.util.Map;

public class HttpQueryStringRequest {


    Map<String, String> queryStringParameters;

    public Map<String, String>
        getQueryStringParameters() {

        return queryStringParameters;
    }

    public void setQueryStringParameters(
        Map<String, String> queryStringsMap) {

        queryStringParameters =
            queryStringsMap;
    }
}
```



Demo



Use the `HttpQueryStringRequest` in our `InventoryFindFunction` handler

Test the function using a HTTP Request in JSON



Demo



Test InventoryFindFunction using Postman

Create a Web API with API Gateway proxy

Test InventoryFindFunction using API Gateway

Deploy new Web API

Test new Web API using:

- Postman
- Web browser



Summary



JSON is the most commonly used data format in RESTful web services

Mapping JSON to HTTP Requests and Responses

API Gateway proxy is required to use JSON

Tested calls with JSON-POJO input

- Postman
- Web Browser

