

MBA⁺

**Full stack developer SOA
&
Internet of things**

MBA⁺

Enterprise Service Bus (barramento de serviços corporativo)

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Lab Mule ESB

Criando Webservice Rest e SOAP

Elemento choice

Mule Design - desafio-mule/src/main/app/desafio-mule.xml - Anypoint Studio

File Edit Navigate Search Project Run Window Help

Quick Access Mule Design

Package Explorer

- desafio-mule
 - src/main/app (Flows)
 - desafio-mule.xml
 - mule-app.properties
 - mule-deploy.properties
 - lib
 - src/main/api
 - src/main/java
 - com.fiap.desafio.mule
 - fiap
 - src/main/resources
 - src/test/java
 - src/test/resources
 - mappings
 - Referenced Libraries
 - APIkit [v1.6.3]
 - JRE System Library [JavaSE-1.7]
 - Mule Server 3.7.3 EE
 - src
 - target

mule-app.properties

desafio-mule

restFlow

Message Flow Global Elements Configuration XML

Choice Properties

Notes

Metadata

Choice

There are no errors.

Display Name: Choice

Business Events

Enabling this option will activate event tracking feature for this element and its children.

☐ Enable default events tracking

When

`#[message.inboundProperties.'http.method' == 'GET']`

`#[message.inboundProperties.'http.method' == 'POST']`

Route Message to

`select`

`JSON to Object`

Otherwise

Default Route:

Mule Palette

Search

Connectors

- Ajax
- Amazon S3
- Amazon SQS
- CMIS
- Database
- FTP
- File
- Generic
- HTTP
- IMAP

Input Output

type filter text

Payload

Unknown : Unknown

Flow Variables

Session Variables

Inbound Properties

- `http.listener.path : String`
- `http.method : String`
- `http.query.params : Map<String, String>`
- `http.query.string : String`
- `http.remote.address : String`
- `http.request.path : String`
- `http.request.uri : String`
- `http.scheme : String`
- `http.status : String`
- `http.uri.params : Map<String, String>`
- `http.version : String`

Outbound Properties

Refresh Metadata

Elemento transformador

FIAP

The screenshot displays the Mule Studio IDE with a project named 'desafio-mule'. The main canvas shows a message flow starting with an HTTP connector, followed by a Choice router. One path of the Choice router leads to a 'JSON to Object' transformer, which is highlighted by a purple callout box containing the text 'Converter para objeto antes...'. This transformer is connected to a Database connector. The bottom pane shows the configuration for the 'JSON to Object' transformer, indicating it has no errors and is set to return a 'java.lang.Object'.

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 - src
 - target

mule-app.properties

restFlow

HTTP → Choice → JSON to Object → Database

JSON to Object

There are no errors.

General

Display Name: JSON to Object

General

Return Class: java.lang.Object

☐ Ignore Bad Input

Encoding: [Dropdown]

Mime Type Attributes

MIME Type: [Dropdown]

Mule Palette

Connectors

- Ajax
- Amazon S3
- Amazon SQS
- CMIS
- Database
- FTP
- File
- Generic
- HTTP
- IMAP

JSON to Object Configuration

Input: type filter text

Output: type filter text

Input

Unknown: Unknown

Flow Variables

Session Variables

Inbound Properties

- http.listener.path: String
- http.method: String
- http.query.params: Map<String, String>
- http.query.string: String
- http.remote.address: String
- http.request.path: String
- http.request.uri: String
- http.scheme: String
- http.status: String
- http.uri.params: Map<String, String>
- http.version: String

Outbound Properties

[Refresh Metadata](#)

MESSAGE.PAYLOAD.<ATRIBUTO_REST> FIAP

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 - mule-deploy.properties
 - lib
 - src/main/api
 - api.raml
 - src/main/java
 - com.fiap.desafio.mule
 - AvgSalaryTransformer.java
 - EmployeeBonusTransformer.java
 - fiap
 - src/main/resources
 - src/test/java

Message Flow

Global Elements

Configuration XML

Database

Problems

Progress

General

Advanced

Notes

Display Name: Database

Basic Settings

Connector configuration: MySQL_Configuration

Operation: Insert

☐ Bulk Mode

Query

Type: Parameterized

Parameterized

```
INSERT INTO `desafio`.`employee` (`first_name`, `last_name`, `salary`)  
VALUES ([message.payload.first_name],  
[message.payload.last_name], [message.payload.salary]);
```

Obtendo valor no JSON

Mule Palette

Search

Transformers

- JSON to Object
- JSON to XML

Input

Output

type filter text

- Payload
 - Unknown: Unknown
- Flow Variables
- Session Variables
- Inbound Properties
 - http.listener.path: String
 - http.method: String
 - http.query.params: Map<String, String>
 - http.query.string: String
 - http.remote.address: String
 - http.request.path: String
 - http.request.uri: String
 - http.scheme: String
 - http.status: String
 - http.uri.params: Map<String, String>
 - http.version: String

Refresh Metadata

Soap Flow - http

Mule Design - desafio-mule/src/main/app/desafio-mule.xml - Anypoint Studio

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Package Explorer

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 - JRE System Library [JavaSE-1.7]

Connections Explorer Outline MUnit

type filter text

- desafio-mule

mule-app.prope... desafio-mule mule-deploy.pr... api.raml AvgSalaryTrans... EmployeeBonus...

HTTP

Error handling

soapFlow

HTTP SOAP Java Choice Database Variable Java

Bonus

Default

Error handling

Message Flow Global Elements Configuration XML

HTTP Problems Progress

General

Advanced

Notes

Metadata

Display Name: HTTP

General Settings

Connector Config

Basic Settings

Path: soap

Allowed Methods:

Response Settings

Input Output

type filter text

- Payload
 - Unknown : Unknown
 - Flow Variables
 - Session Variables
 - Inbound Properties
 - Outbound Properties
 - Record Variables

Refresh Metadata

HTTP DEFINIR SOAP NO PATH

CFX - SOAP

FIAP

Mule Design - desafio-mule/src/main/app/desafio-mule.xml - Anypoint Studio

File Edit Navigate Search Project Run Window Help

Quick Access Mule Design

CFX Problems Progress

General

Interceptors

Security

Advanced

Notes

Metadata

There are no errors.

Display Name: CFX

Generic

Config Reference: CXF_Configuration

Operation: JAX-WS service

Inbound Attributes

Binding ID:

Port:

Namespace:

Service:

Service Class: fiap.EmployeePort

Generate from WSDL

Output

Filter text

Payload

Unknown : Unknown

Flow Variables

Session Variables

Inbound Properties

http.listener.path : String

http.method : String

http.query.params : Map<String, String>

http.query.string : String

http.remote.address : String

http.request.path : String

http.request.uri : String

http.scheme : String

Refresh Metadata

soapFlow

HTTP

SOAP

SOAP

HTTP

Choice

Bonus

Database

Variable

Variable

Java

Java

Error handling

Message Flow Global Elements Configuration XML

1- PRIMEIRO CRIA O WSDL EM IDE DE SUA ESCOLHA

2- GENERATE JAVA FROM WSDL NO MULE

Transformador Java – IMPL SOAP

Mule Design - desafio-mule/src/main/app/desafio-mule.xml - Anypoint Studio

File Edit Navigate Search Project Run Window Help

Quick Access Mule Design

Java Problems Progress

General

Advanced

Notes

Metadata

There are no errors.

Display Name: Java

Generic

Class Name: fiap.EmployeePortImpl

Object:

Input Output

type filter text

- ▼ Payload
 - Unknown : Unknown
- Flow Variables
- Session Variables
- ▼ Inbound Properties
 - http.listener.path : String
 - http.method : String
 - http.query.params : Map<String, String>
 - http.query.string : String
 - http.remote.address : String
 - http.request.path : String
 - http.request.uri : String
 - http.scheme : String

Refresh Metadata

soapFlow

NESSE ELEMENTO!

HTTP

SOAP

Java

Choice

Database

Variable

Java

Default

Error handling

Message Flow Global Elements Configuration XML

Tranformador Java - IMPL SOAP

CLASSE IMPLEMENTAÇÃO DO SERVIÇO SOAP

```
1  /**
2
3
4  package fiap;
5
6  import java.math.BigDecimal;
7
8
9  /**
10 * @author Daniel
11 *
12 */
13 public class EmployeePortImpl implements EmployeePort {
14
15     /** (non-Javadoc)
16      * @see avenue.EmployeePort#calculateEmployeeBonus(avenue.Employee)
17      */
18     @Override
19     public BigDecimal calculateEmployeeBonus(Employee part) {
20
21         //sends salary to the next step and transformer calculates the bonus with random value.
22         return new BigDecimal(part.salary.doubleValue());
23     }
24
25     /** (non-Javadoc)
26      * @see avenue.EmployeePort#getAvarageSalary()
27      */
28     @Override
29     public BigDecimal getAvarageSalary() {
30
31         return new BigDecimal(-1);
32     }
33
34 }
35
```

Transformador java de saída

Mule Design - desafio-mule/src/main/app/desafio-mule.xml - Anypoint Studio

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Quick Access Mule Design

Package Explorer

- api.raml
- src/main/java
 - com.fiap.desafio.mule
 - AvgSalaryTransformer.java
 - AvgSalaryTransformer
 - EmployeeBonusTransformer.java
 - EmployeeBonusTransformer
 - fiap
 - Employee.java
 - EmployeePort_EmployeePortPort_Client
 - EmployeePort_Service.java
 - EmployeePort.java
 - EmployeePortImpl.java
 - ObjectFactory.java
 - package-info.java
 - src/main/resources
 - src/test/java
 - src/test/resources

mule-app.pr

restFlow

HTTP

HTTP

Error handling

General

Notes

Metadata

There are no errors.

Display Name: Bonus

General

Return Class:

☐ Ignore Bad Input

Encoding:

Mime Type Attributes

MIME Type:

Transformer Settings

Transformer Class: com.fiap.desafio.mule.EmployeeBonusTransformer

Property

Input Output

type filter text

- Payload
 - Unknown: Unknown
- Flow Variables
- Session Variables
- Inbound Properties
 - http.listener.path: String
 - http.method: String
 - http.query.params: Map<String, String>
 - http.query.string: String
 - http.remote.address: String
 - http.request.path: String
 - http.request.uri: String
 - http.scheme: String

Refresh Metadata

soapFlow

HTTP

SOAP CXF

Java

Choice

Database

Variable

Variable

Java

Default

Error handling

Message Flow Global Elements Configuration XML

NESSE ELEMENTO!

TRANSFORMADOR JAVA doTransform

FIAP

Mule Design - desafio-mule/src/main/java/com/fiap/desafio/mule/EmployeeBonusTransformer.java - Anypoint Studio

File Edit Source Refactor Navigate Search Project Run Window Help

Quick Access Mule Design

Package Explorer

- src/main/api
- src/main/java
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 - EmployeeBonusTransformer.java
 - fiap
 - Employee.java
 - EmployeePort_EmployeePort_Client.java
 - EmployeePort_Service.java
 - EmployeePort.java
 - EmployeePortImpl.java
 - ObjectFactory.java
 - package-info.java
 - src/main/resources
 - src/test/java
 - src/test/resources
 - mappings
 - Referenced Libraries
 - APIkit [v1.6.3]

Editor

```
1 package com.fiap.desafio.mule;  
2  
3 import java.math.BigDecimal;  
4  
5  
6  
7  
8  
9  
10  
11  
12 public class EmployeeBonusTransformer extends AbstractTransformer {  
13  
14     @Override  
15     protected Object doTransform(Object src, String enc)  
16         throws TransformerException {  
17  
18         double random = Math.random();  
19         double halfSalary = new Double(src.toString())*0.5;  
20         BigDecimal bonus = new BigDecimal(halfSalary*random);  
21  
22  
23         return bonus;  
24     }  
25 }  
26  
27
```

Mule Palette

Open a Mule Configuration file or test to see the palette

Connections Explorer

Open a Mule configuration file to explore its connectors.

Outline

MUnit

Mule Properties

Problems

Progress

Select a Mule message processor to edit its properties

Writable Smart Insert 1:1

Mule ESB 3.7

<https://docs.mulesoft.com/mule-runtime/3.7/developing>

Soa patterns

<https://dl.acm.org/citation.cfm?id=1538586>

Rest ODATA

<https://www.odata.org/>

MBA⁺

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