Open Transform
Execution Guide

Open Transform allows you to quickly transform your Monolith into Microservices. Its an automation of various manual activities that developer does in order to transform Monolith Application.

Open Transform adheres to many best practices like Java Conventions, Test Driven Development, Open Software Stack like Microprofile, Thorntail etc.

It is highly adviced that you spend enough time with this document and get your self well versed with the details on how to execute Transform with the specimen projects. Post that you can execute it for your Monolith Applications.

i. Executing Open Transform with the specimen project

This project is hosted on https://github.com/miracleatwork/opentransform

Contributed by Miracle Software Solutions – Miracle Labs.
Contact: http://www.miracleatwork.com/microservices

Open Transform

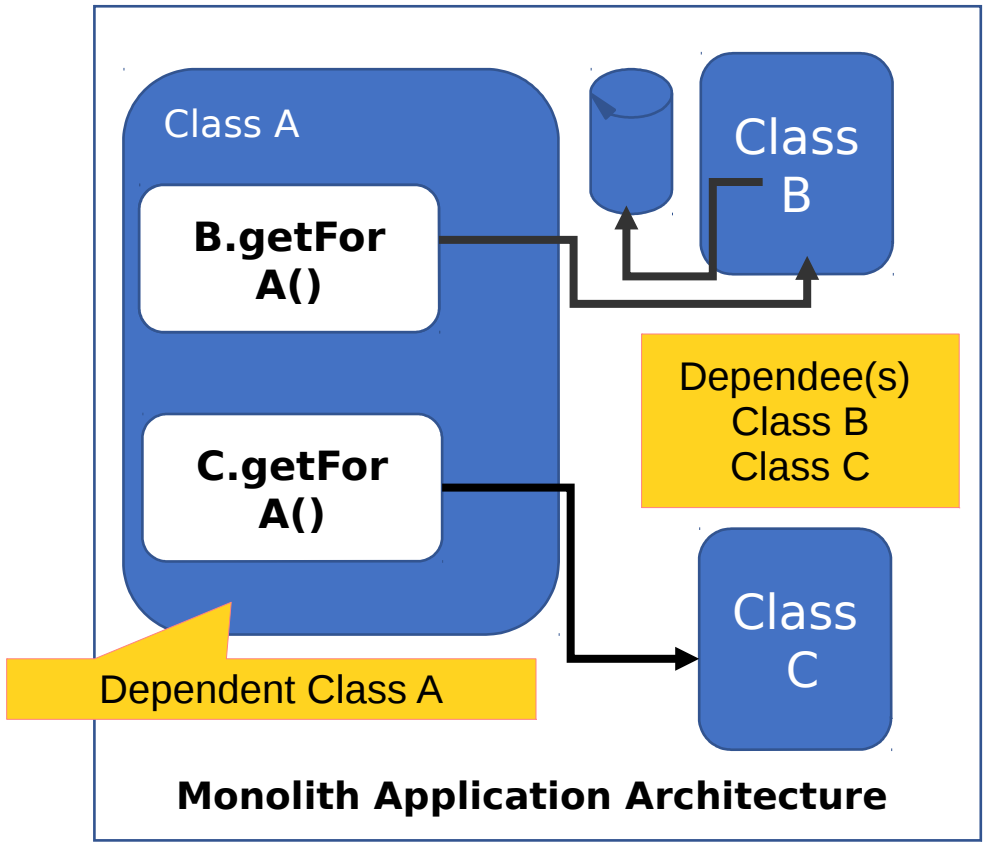
Executing Open Transform with the specimen project

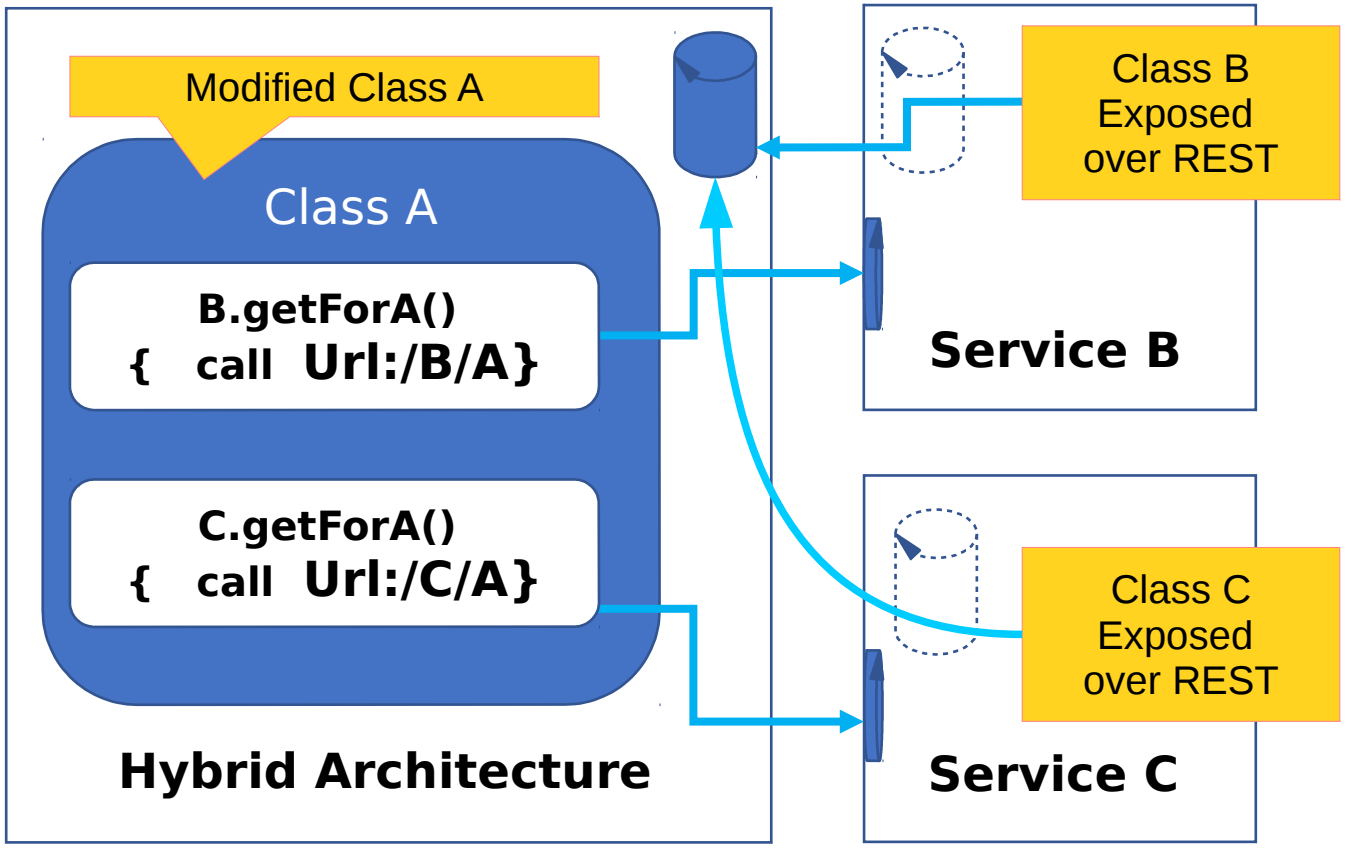
- **Understanding the Application Structure.**
  - Transform – Eclipse Java Project which performs Transformation.
  - ThorntailDemo – Thorntail Hello World Example which will host our Microservice Application.
  - Monolith – Sample Eclipse Java Project which we want to Transform.
  - NewMonolith – Transformed Monolith Java Project which is part of Hybrid Architecture.
- **Transform Project**
  - Transform is the heart of the Project. It has all the processing files along with Test Classes.
  - src – Directory contains all the source code
  - test – Directory contains test classes which we will execute to realize Transformation
  - Monolith-src – Link Folder to the src folder of Monolith Project.
  - NewMicroservice – Folder which will store generated Files for Microservice.
  - NewMonolith(Folder) – Folder which will store generated Files for Monolith Application

(https://github.com/miracleatwork/opentransform)

Open Transform

Automating Conversion of Monolith to Hybrid Architecture





Initial State of the Application

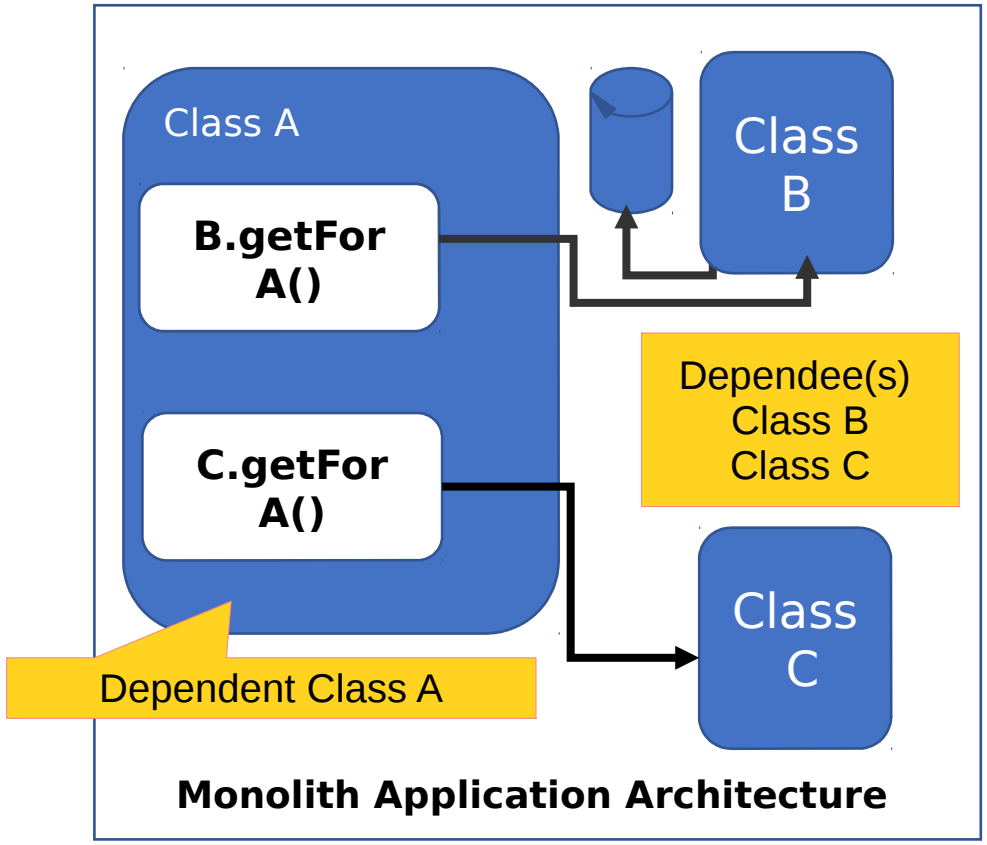
Desired State of the Application

(https://github.com/miracleatwork/opentransform)

[Conversion of Monolith App to Adopt Hybrid Architecture using Automation techniques]

Open Transform

Automating Conversion of Monolith to Hybrid Architecture



Initial State of the Application

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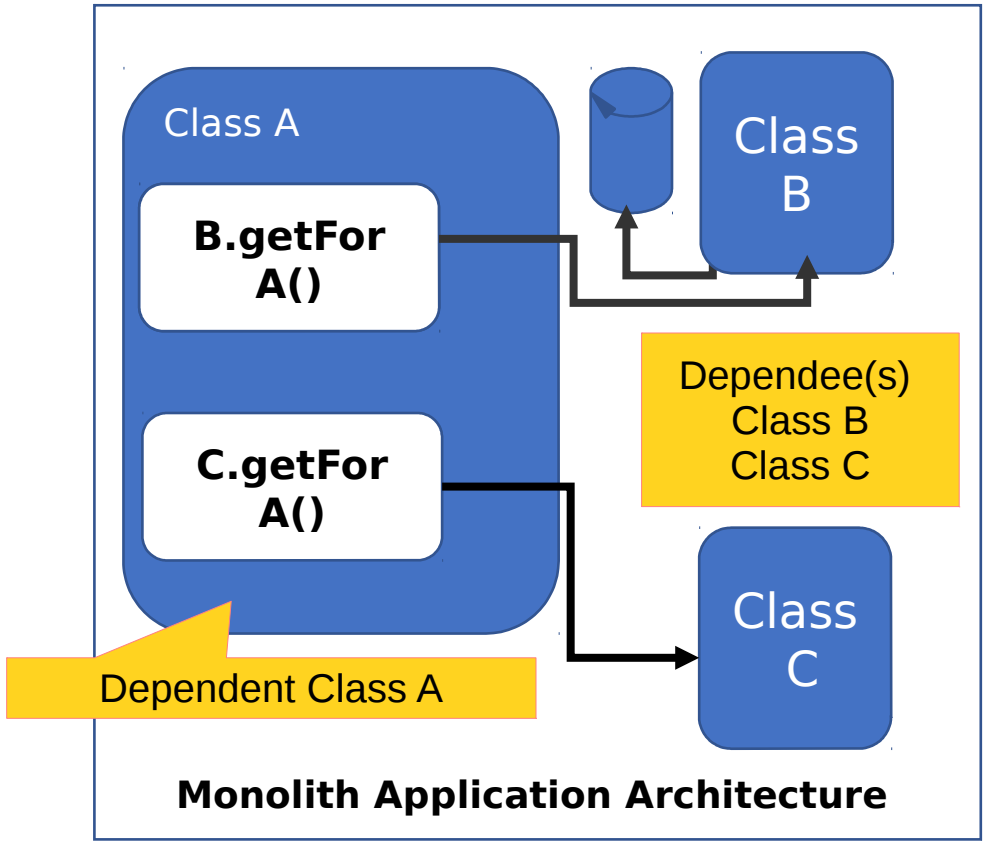
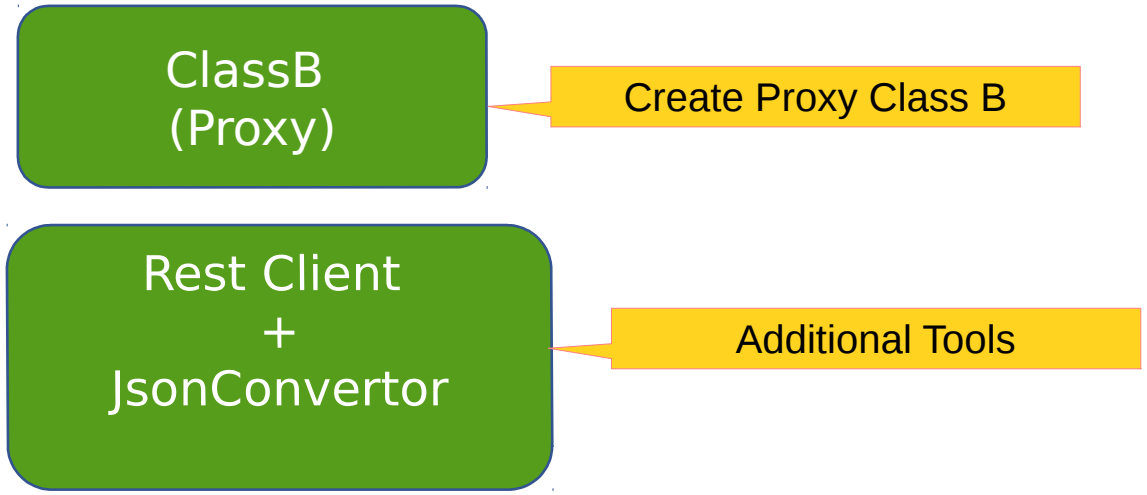
Automating Conversion of Monolith to Hybrid Architecture





Initial State of the Application

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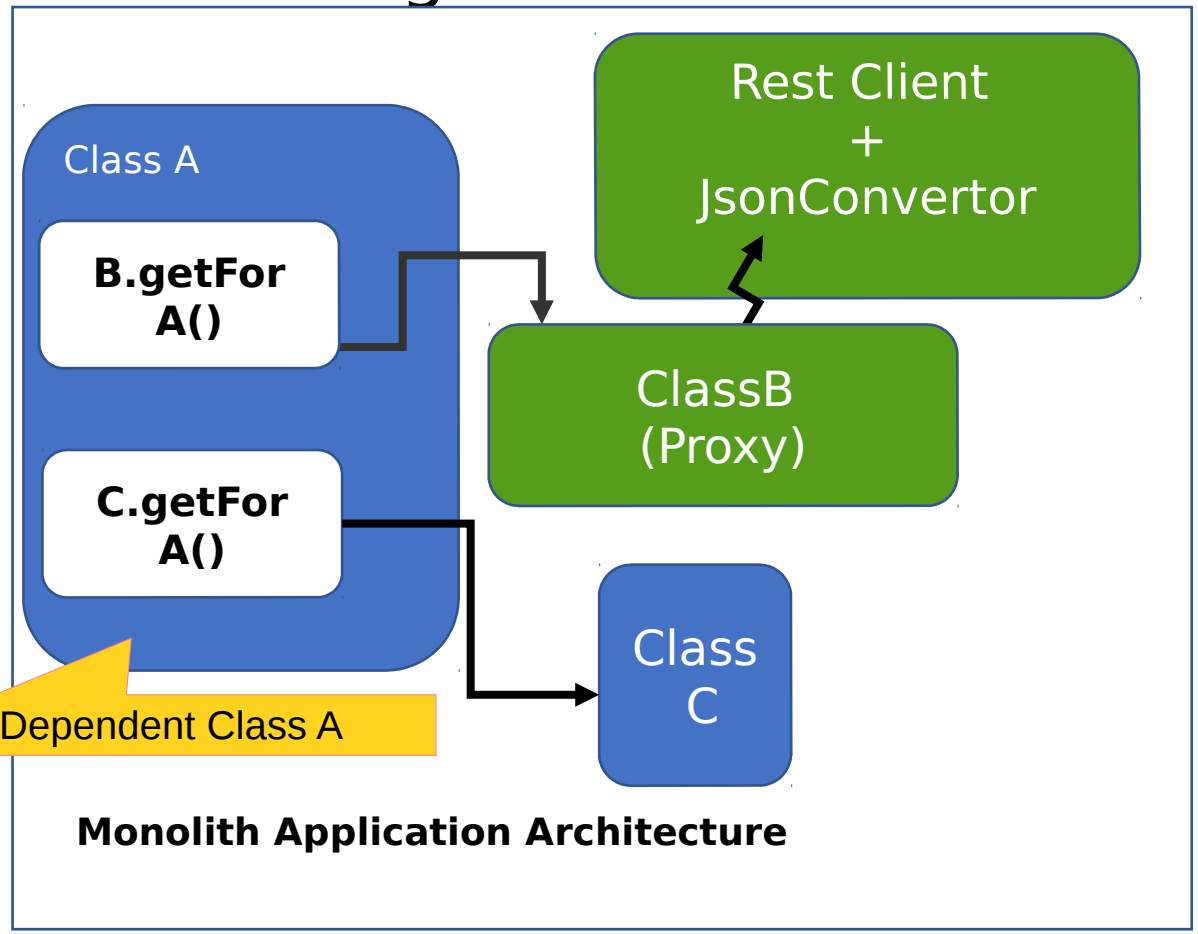

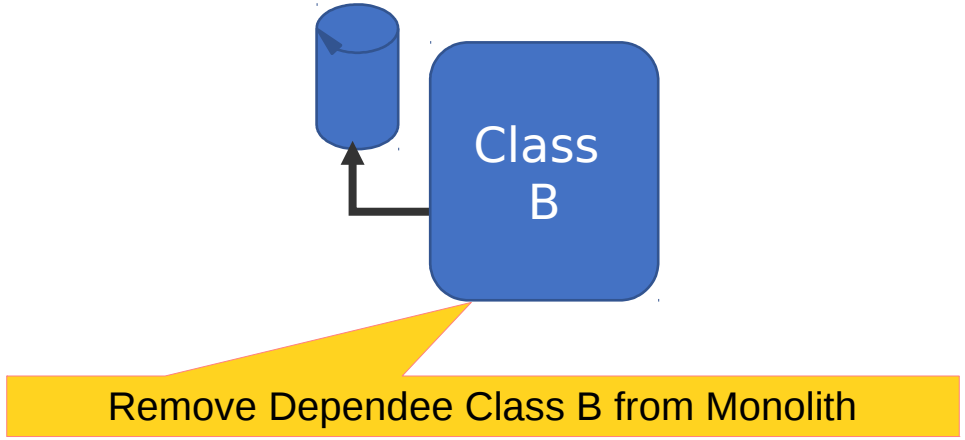

Stripped State of the Application

(https://github.com/miracleatwork/opentransform)

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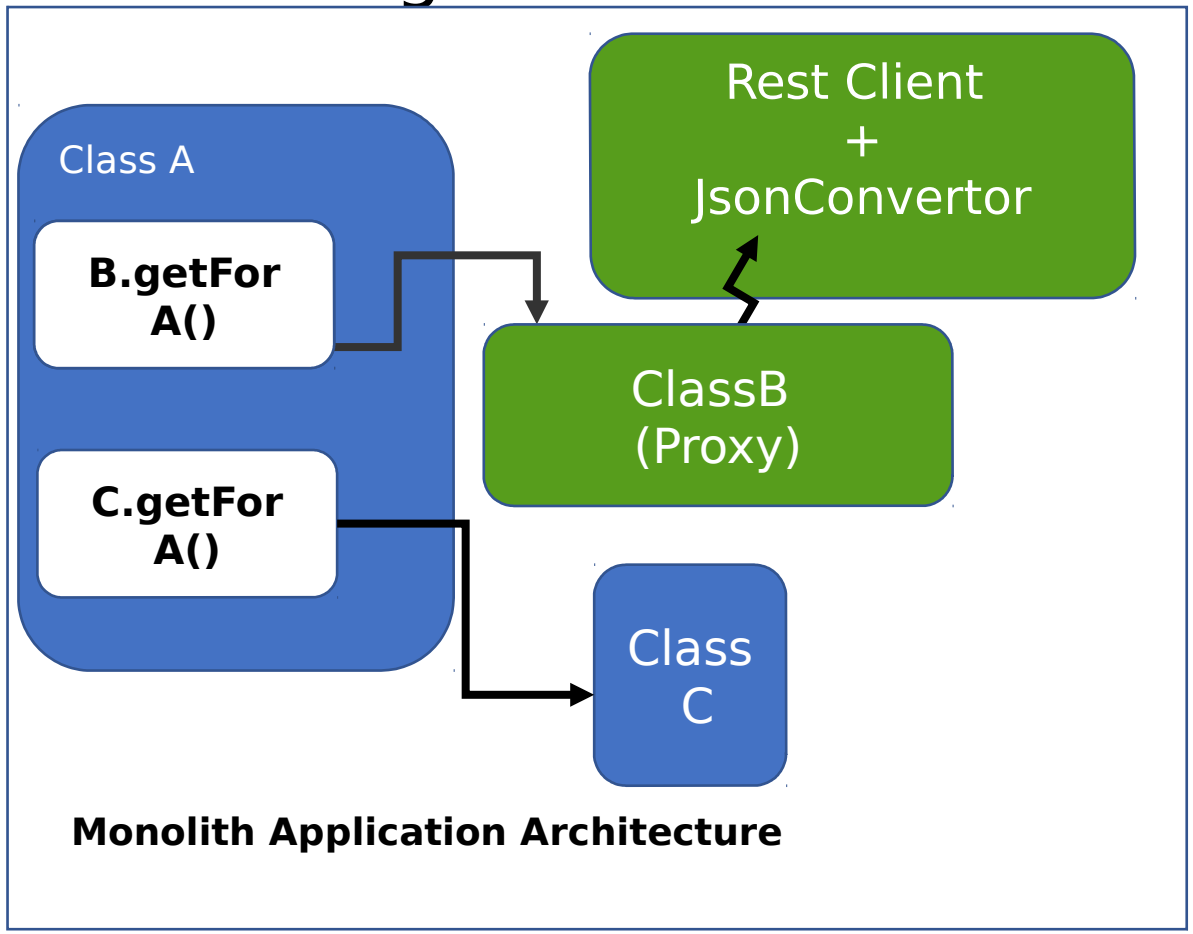

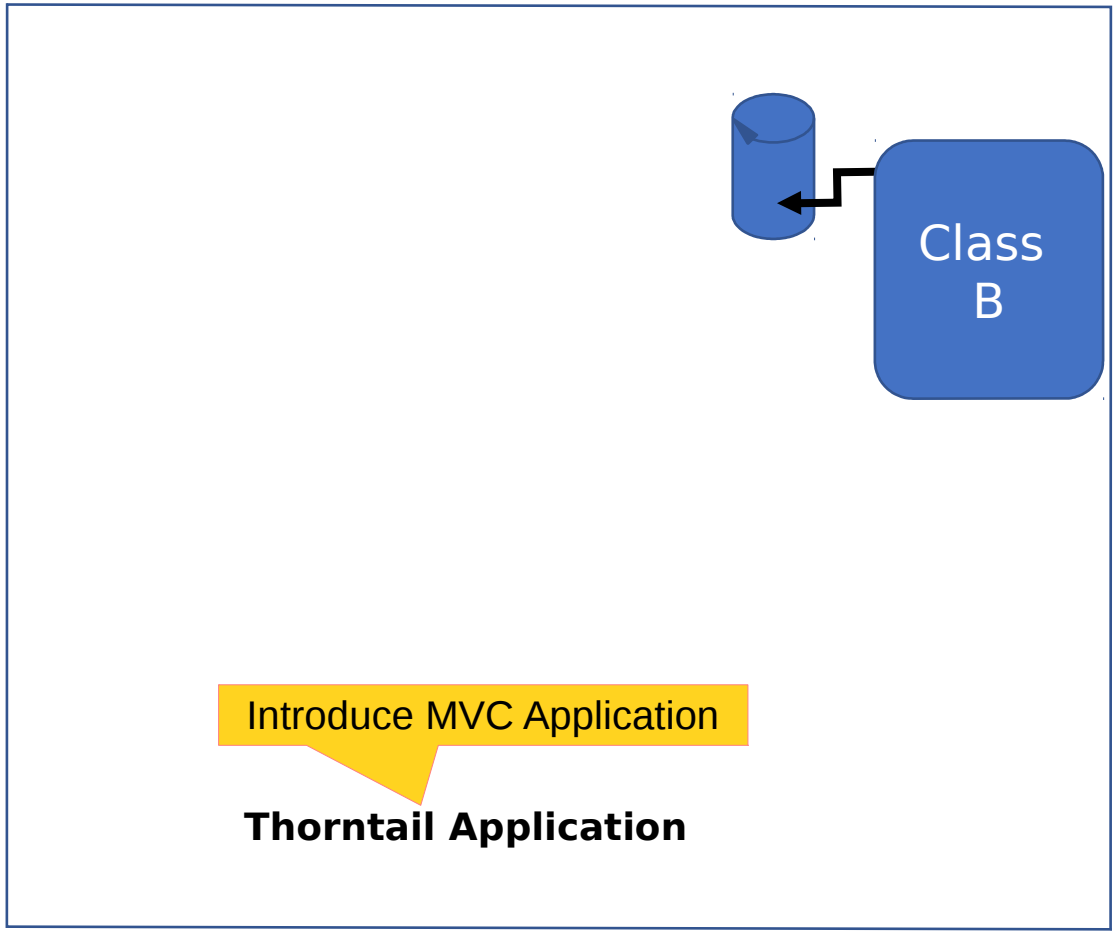

Modified Monolith Application

(https://github.com/miracleatwork/opentransform)

[Conversion of Monolith App to Adopt Hybrid Architecture using Automation techniques]

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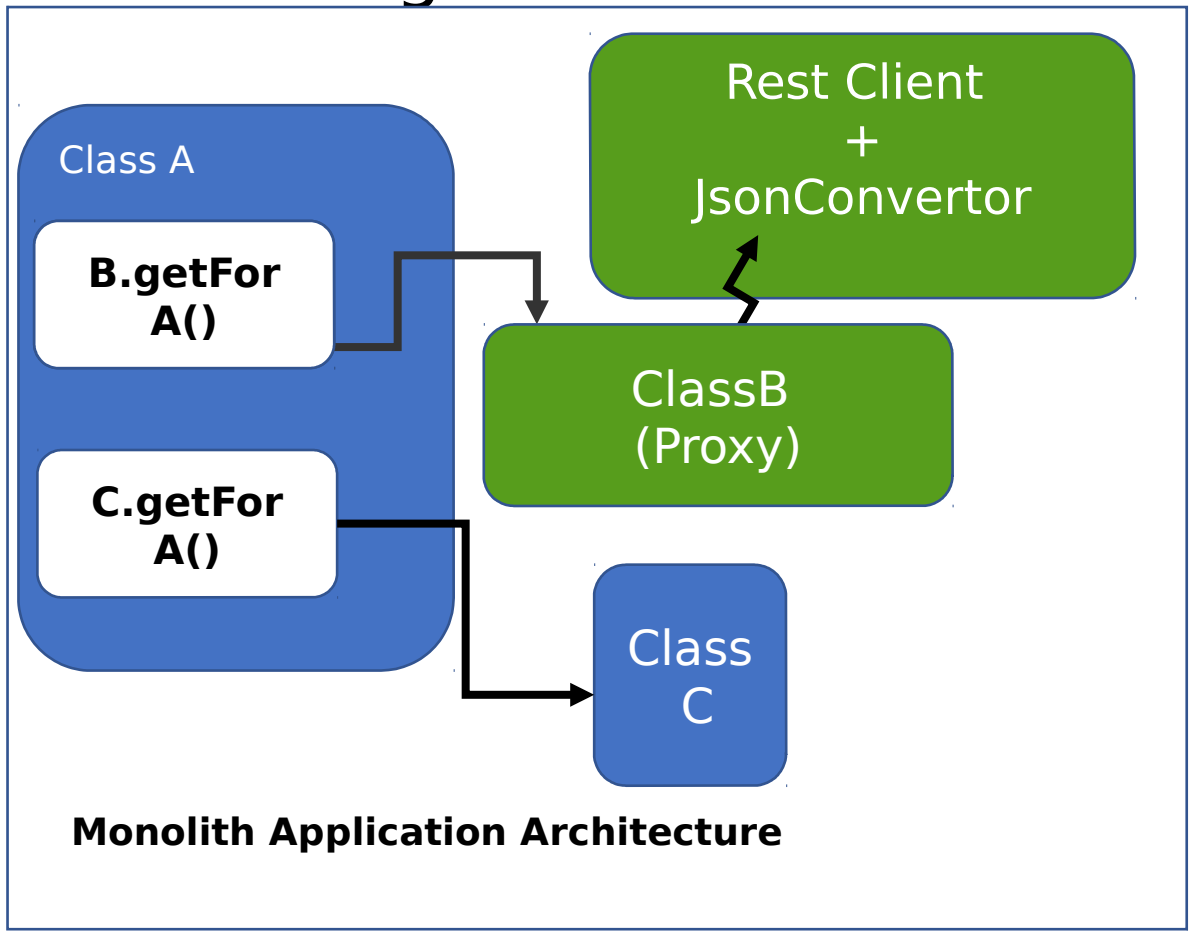
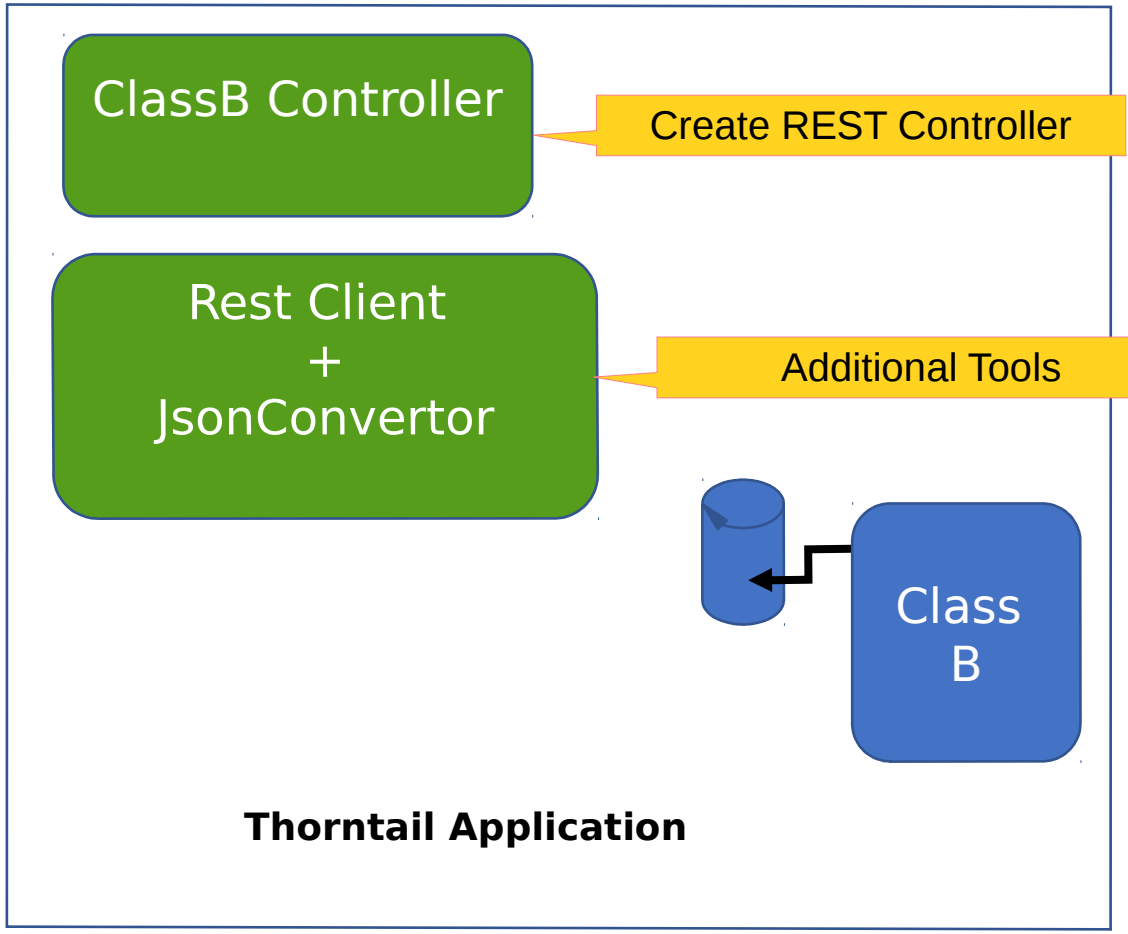
Automating Conversion of Monolith to Hybrid Architecture





New (Modified) Monolith Application

(https://github.com/miracleatwork/opentransform)

[Conversion of Monolith App to Adopt Hybrid Architecture using Automation techniques]

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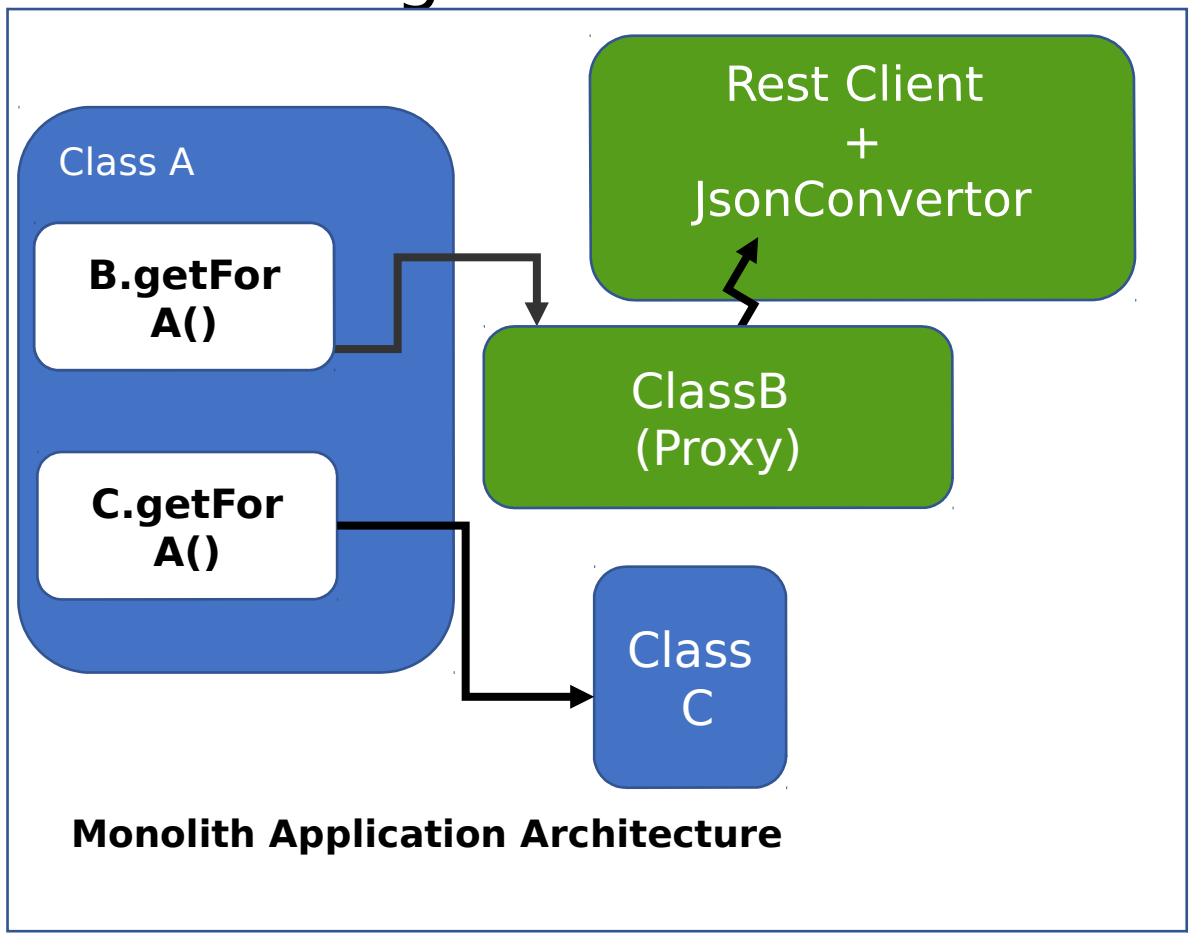
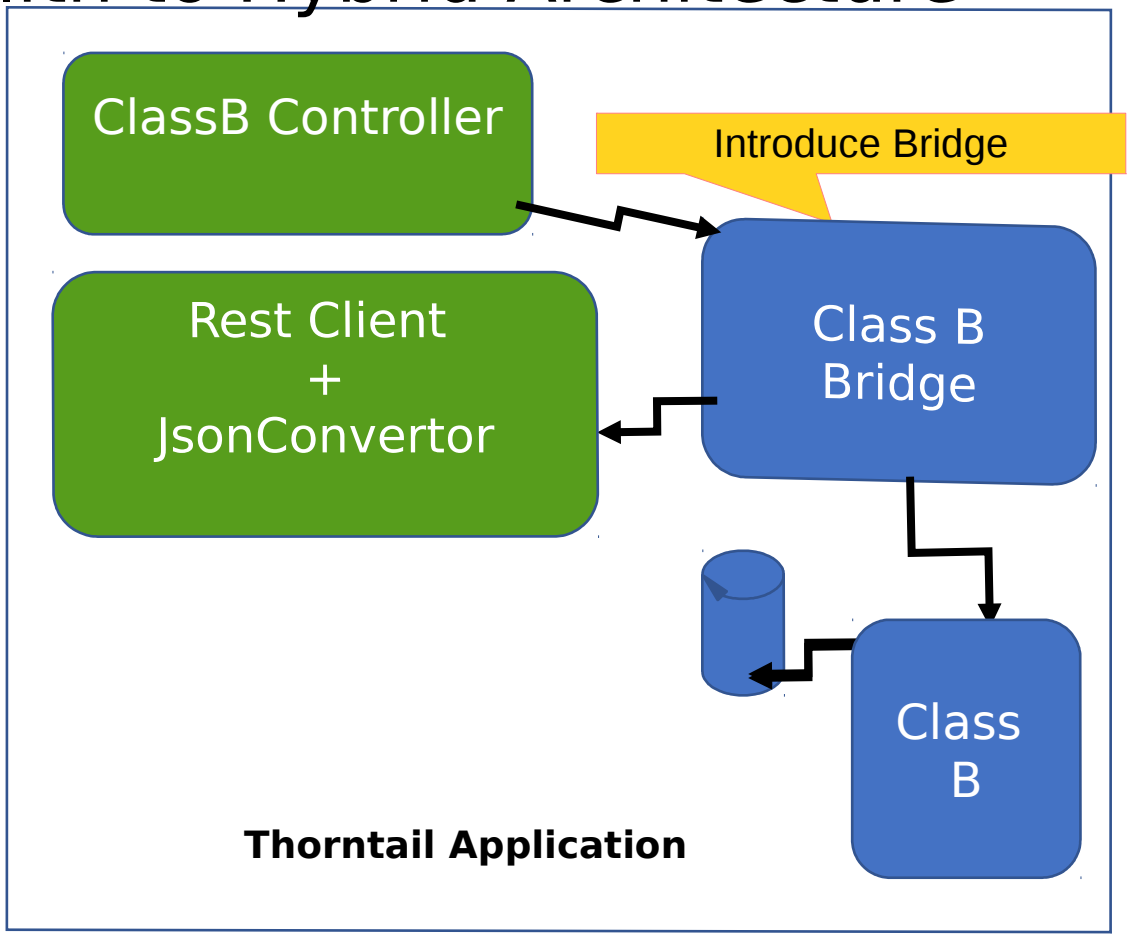
Automating Conversion of Monolith to Hybrid Architecture





Modified Monolith Application

(https://github.com/miracleatwork/opentransform)

[Conversion of Monolith App to Adopt Hybrid Architecture using Automation techniques]

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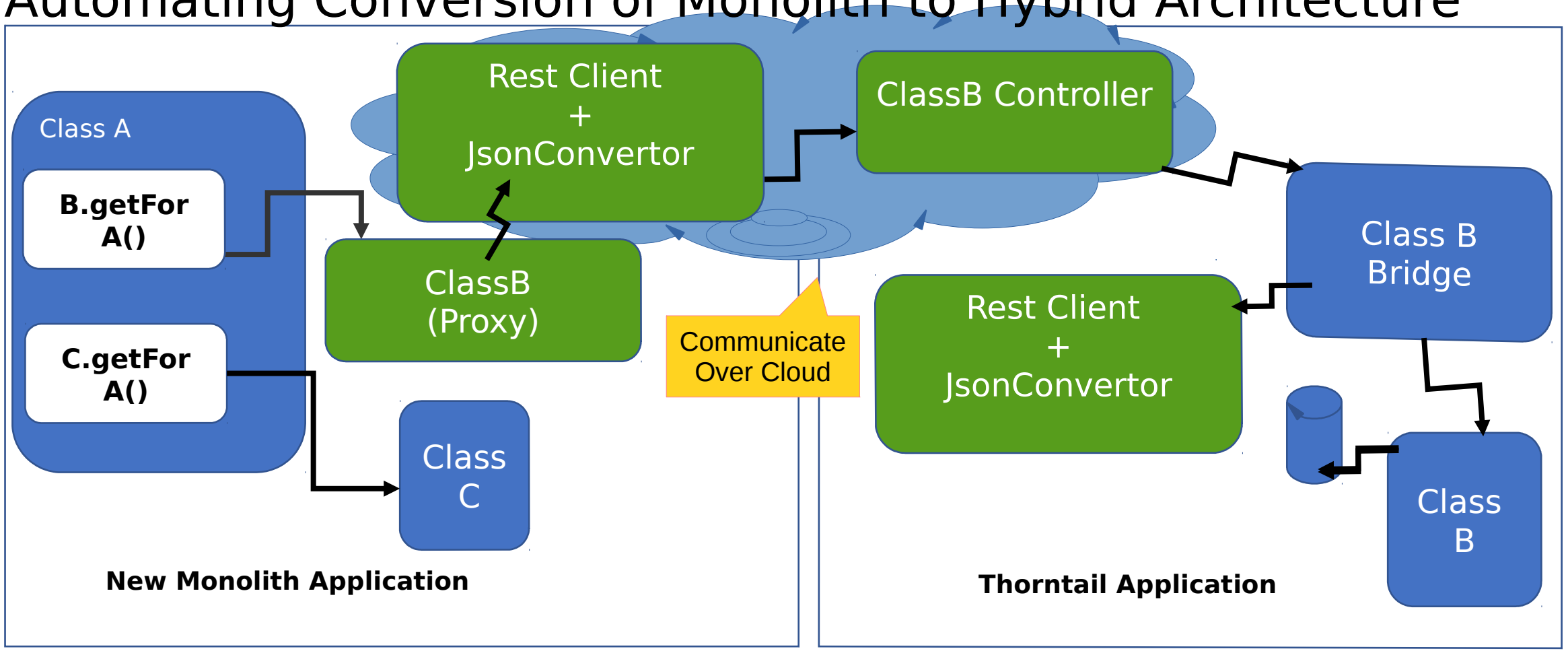


Hybrid Architecture Application

(https://github.com/miracleatwork/opentransform)

[Conversion of Monolith App to Adopt Hybrid Architecture using Automation techniques]

Open Transform

Executing Open Transform with the specimen project

- **Download**
  - Download Transform-specimen.zip file from this location.
- **Importing into Eclilpse as Existing Projects.**
  - Unzip the Transform-speciment.zip file into any directory of your computer.
  - You will find4 project directories on unzip.

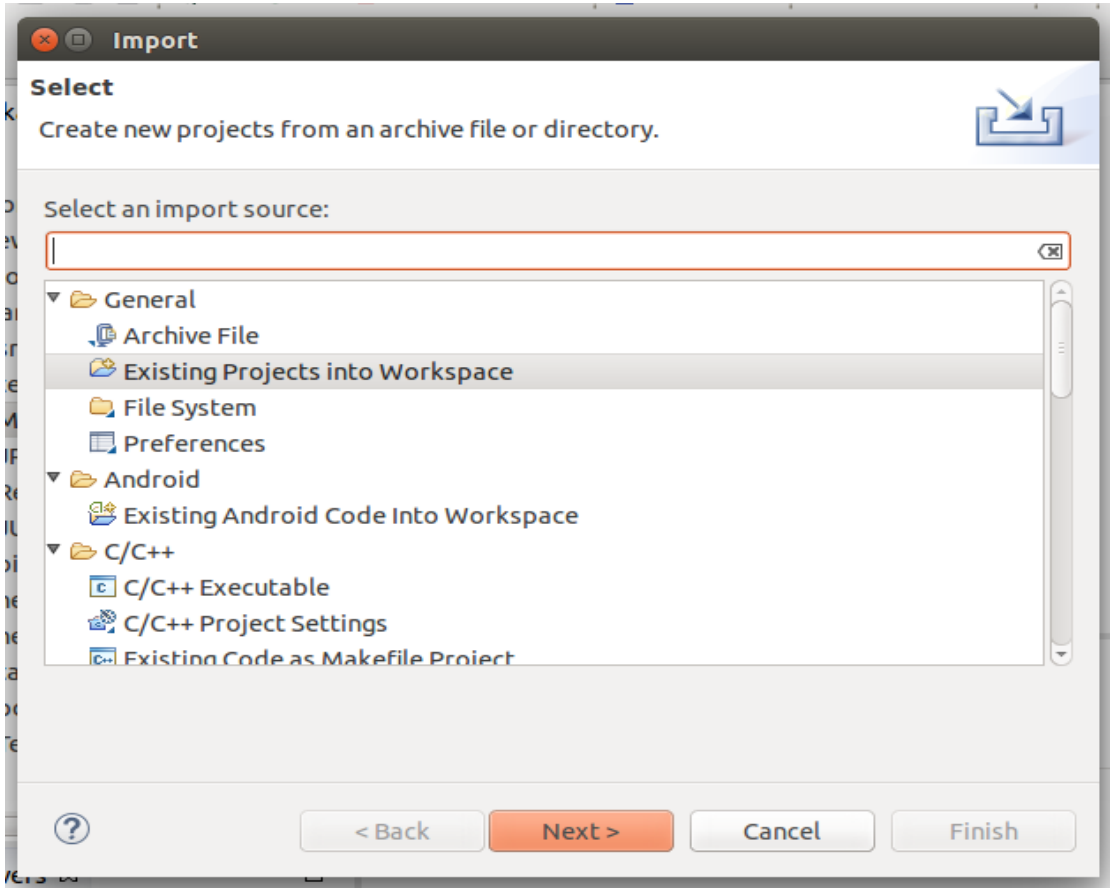
Within Eclipse select File – Import – Existing Projects into Workspace option using Menu.

- Import all the 4 projects.

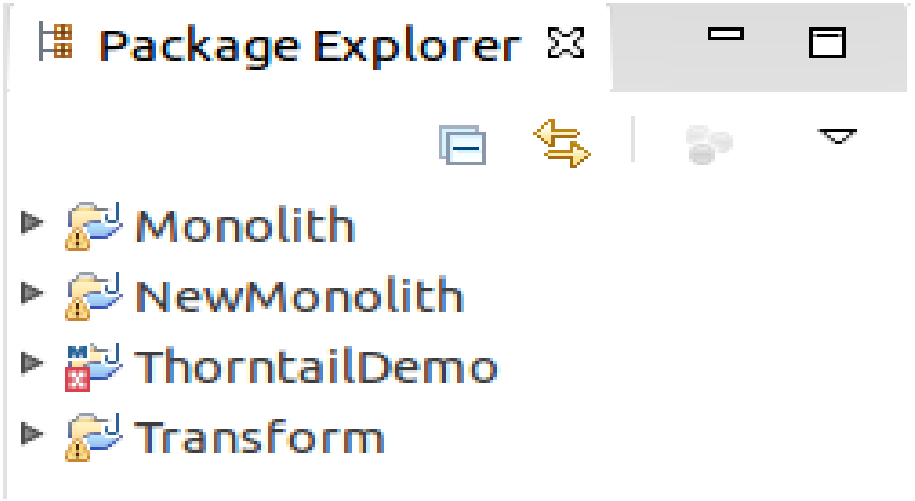
(https://github.com/miracleatwork/opentransform)

Open Transform

Executing Open Transform with the specimen project



- **Importing Projects**
  - Import as Existing Projects.
  - Photo given for illustration.
  - Import All 4 Projects.



(https://github.com/miracleatwork/opentransform)

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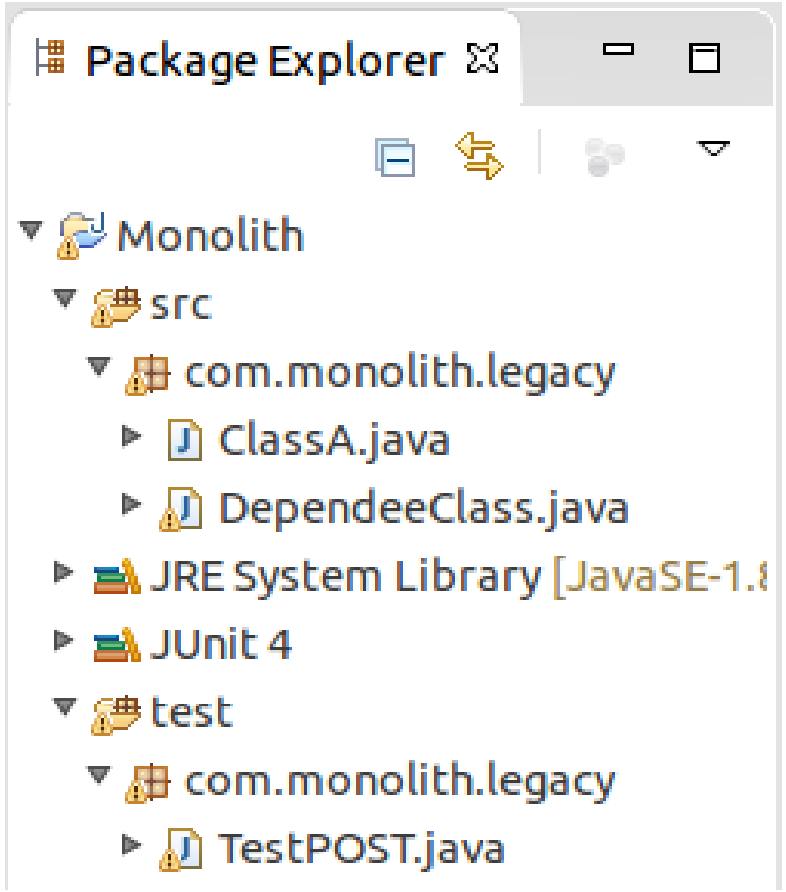
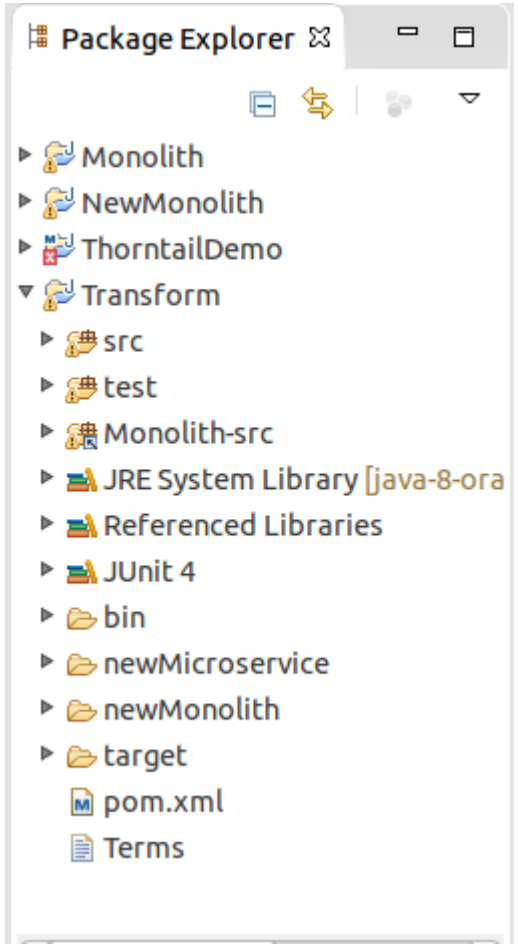


- **Navigating Monolith Project**
  - Java 1.8 Project
  - DependeeClass will be Transformed.
  - TestPost is a Junit 4 Test Class.
  - src will be used in other projects as well.

(https://github.com/miracleatwork/opentransform)

Open Transform

Executing Open Transform with the specimen project

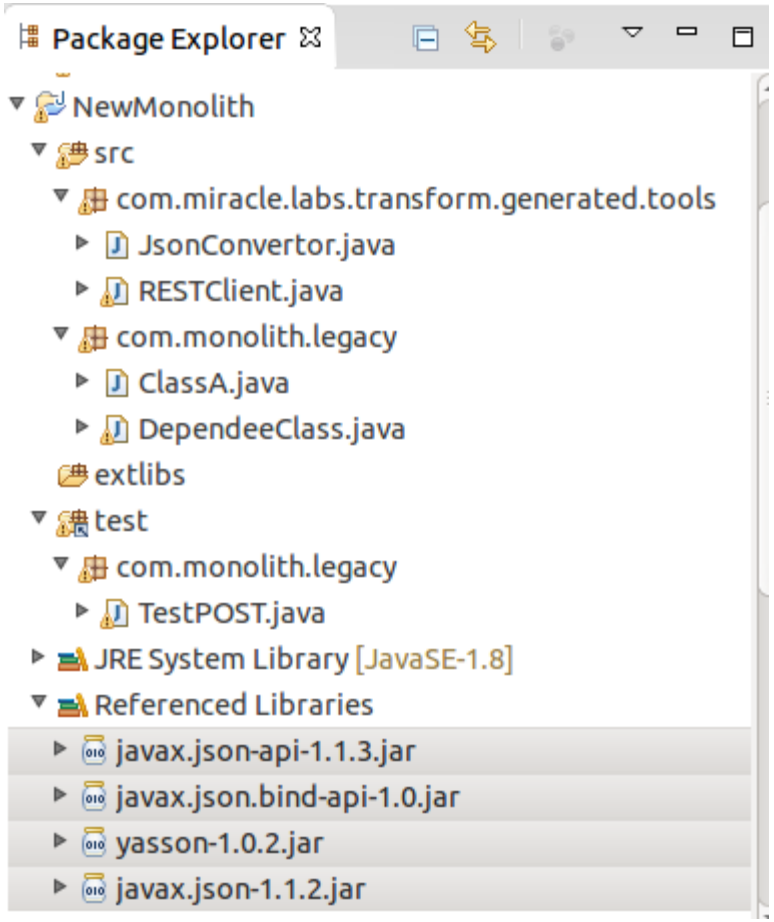


- **Navigating Transform Project**
  - Maven Project
  - Java 1.8 & Thorntail Dependencies.
  - src and test directories
  - newMicroservice repo Directory
  - newMonolith repo Directory
  - Monothi-src linked to Monolith src folder

(https://github.com/miracleatwork/opentransform)

Open Transform

Executing Open Transform with the specimen project

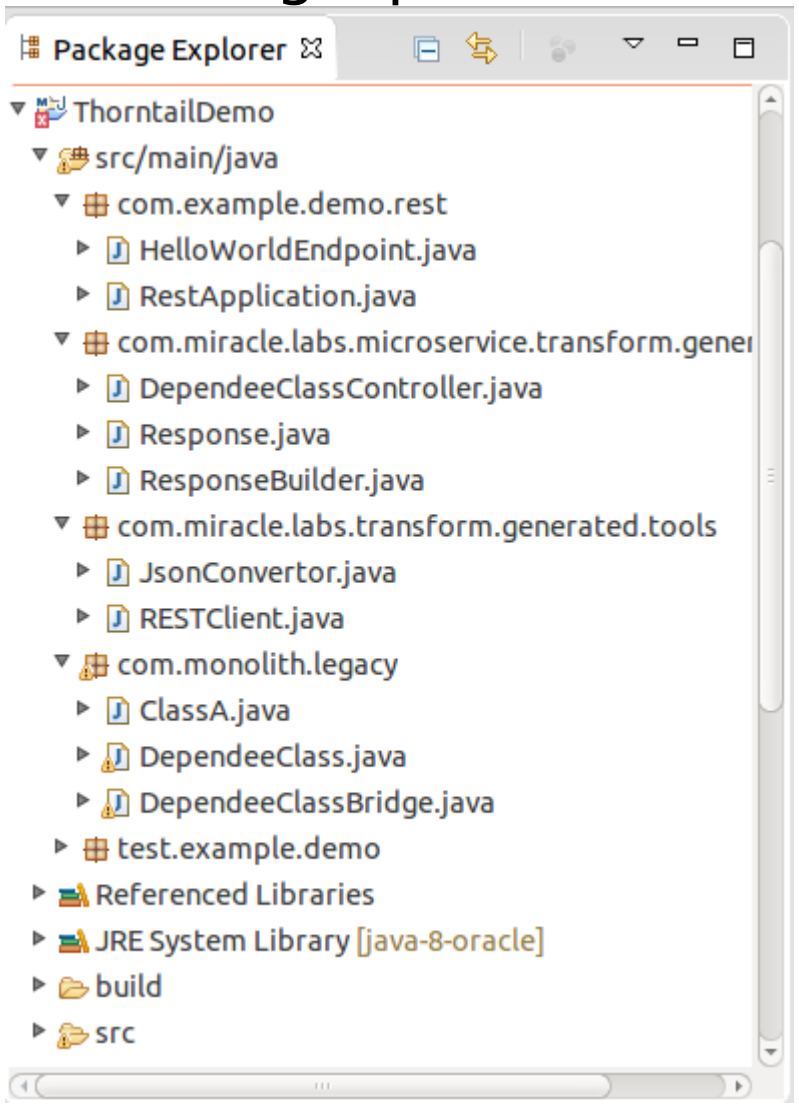


- **Navigating NewMonolith Project**
  - Copied Monolith as New Project
  - Added Json related dependencies
  - Initially original source package is intact
  - New Files are placed under com.miracle package
  - DependeeClass will be replaced going ahead.
  - Original Test class preserved

(https://github.com/miracleatwork/opentransform)

Open Transform

Executing Open Transform with the specimen project



- **Navigating ThornTail Project**
  - Hello World Thorntail Application as base.
  - Maven Application with Controller
  - Monolith source copied to src.
  - Copied com.miracle.legacy package from Monolith
  - DependeeClassBridge is updated.
  - RESTClient & JsonConvertor are tools.

(https://github.com/miracleatwork/opentransform)

Open Transform

Executing Open Transform with the specimen project

- **Tranformation in Action**

  - Navigate to Transform Project.

  1) Execute TestInitailState.java Junit Test Class
  2) Execute TestGenerateFiles.java Junit Test Class
  3) Execute TestPushFiles.java Junit Test Class.

  - To execute Junit Test Class:
    - select the class File in Project Explorer window.
    - Right Click and Select Run As → Junit Test option.

  - If all you Tests are executing without any failure you have transformed Monolith Application to Hybrid Architecture.

(https://github.com/miracleatwork/opentransform)

Open Transform

Executing Open Transform with the specimen project

- **Executing Application in Hybird Application**

1) Execute New Monolith Project instead of Monolith Project, just like you executed it earlier.
2) Execute ThorntailDemo application by issuing below command on console prompt from the root directory

```
mvn thorntail:run
```

3) Execute TestPost Junit Test Class in New Monolith Project.
4) Verify that New Monolith Application is communicating with Thorntail Application via REST Controllers.
5) Bring down the thorntail application by terminating the process or issuing ctrl+c from the console window where it was executed.
6) Verify that TestPost Junit Test Class starts failing.

(https://github.com/miracleatwork/opentransform)

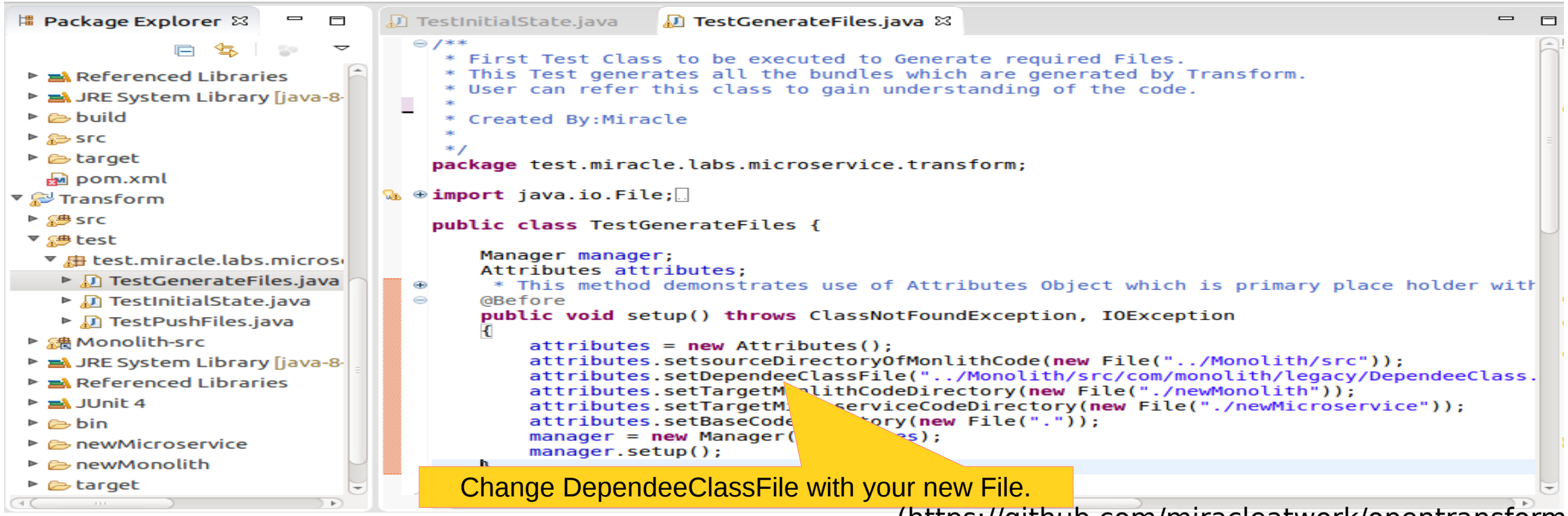
Open Transform

Executing Open Transform with the specimen project

- **Way Forward**
  1)Replace Specimen & New Monolith with your Monolith and repeat initial steps.

  2)Replace DependeeClassFile Attribute and repeat execution steps.

  3)You will realize Hybrid Application Architecture on every iteration.



(https://github.com/miracleatwork/opentransform)

Open Transform

Executing Open Transform with the specimen project

Support

- Open Transform is an opensource project hosted on

  https://github.com/miracleatwork/opentransform

- It is fully supported by Miracle Software Solutions – Miracle Labs

  Web Url: http://www.miracleatwork.com/microservices

  Email: info@miracleatwork.com

- Feel Free to Collborate on Git Hub Project.

(https://github.com/miracleatwork/opentransform)