

# Requirements

The following milestones are required to complete the MuleLearning Capstone Certificate Program.

1. Complete the Quickstart course material and pass the exam

2. Complete the API Design course material and pass the exam

3. Complete the Mule 4 Fundamentals course

*a. Must take each of the quizzes and send me screenshots of your results. 70% pass*

*b. Or one-on-one*

4. Design your application network

*a. Demonstrates understanding of API-led connectivity*

5. Design and publish your first API using RAML

*a. Demonstrates a basic understanding of RAML*

*b. Design and publish a public API developer portal*

- The portal must be customized
- At least one API must be published to the public portal

6. Design each API in your application network

*a. Must include Exchange entries for each API*

*b. Must include traits, resource types, and RAML fragments*

*c. Each resource method pair must have*

- For GET methods:  
*types and examples of "200 success" responses*  
*types and examples of some error responses*
- for POST  
*types and examples for 201*

*d. Demonstrates*

- Advanced knowledge of RAML
- Knowledge of the importance of Exchange entries for APIs

7. Build your first API

*a. Must use the API Kit*

*b. Must use properties files – one for each environment, LOCAL and PROD*

*c. Must demonstrate a working knowledge of Dataweave*

- Map operator
- XML rules

*d. Router, validator*

*e. Error Handling*

- On error continue
- On error propagate
- Global default error handling

## 8. Do your first complex data transformations using Dataweave

### *a. Demonstrate your knowledge of*

- the map operator
- the dataweave documentation
- creating variables
- reading properties directly from dataweave
- providing metadata to the transform message for both input and output
- the preview function
- creating multiple targets with a single transform message processor
- handling project metadata

## 9. Deploy, secure, and monitor your first API

### *a. Must use HTTPS*

### *b. Must use API Manager and set security policies so that the API cannot be consumed without credentials*

### *c. Must demonstrate that*

- all 4xx errors generate a non-critical alert
- all 5xx errors generate a critical alert
- an alert is generated if the application is undeployed

### *d. Routers*

### *e. Validator*

### *f. For a post request, if the API Kit raises an error because of a field-level validation, return which field caused a validation error.*

### *g. Exchange must return data from the API implementation*

### *h. Must have 100% Munit Coverage*

### *i. Must have source code in GIT and be using the GIT plugin for Anypoint Studio*

### *g. Have properties files for each environments LOCAL and PROD*

### *k. Use at least 1 encrypted property*

### *l. Mask the encryption key in the Mule Runtime Manager properties*

## 10. Deploy, secure, and monitor every API of your application network

### *a. Must have*

- at least 1 experience API
- at least 1 process API
- at least 2 system APIs

### *b. Must have at least 1 API written in Mule 3. The rest are Mule 4*

### *c. Must demonstrate analytics*

### *d. At least one API must have a database connector*

### *e. At least one API must consume a SOAP web service*

### *f. At least one API must persist custom business events. Demonstrate search capabilities of those business events.*