

Assignments

Mastering the Fundamentals
of RESTful API Design

1st edition

[Arnel Imperial] ([1708630])

Contents

Introduction part.....	2
Exercise 1	3
Exercise 2	4
Exercise 3	5
Exercise 4	6
Exercise 5	7
Exercise 6	8
Exercise 7	9
Exercise 8	10
Intermediate part.....	11
Exercise 9	12
Exercise 10	13
Exercise 11	14
Exercise 12	15
Exercise 13	16
Exercise 14	17
Exercise 15	18
Exercise 16	19
Exercise 17	20
Exercise 18	21
Exercise 19	22
Advanced part.....	23
Exercise 20	24
Exercise 21	25
Exercise 22	26
Exercise 23	27
Exercise 24	28
Video 1.....	29

Exercise 25	30
-------------------	----

Introduction part

Exercise 1

What is an API? (Slide 12-15)



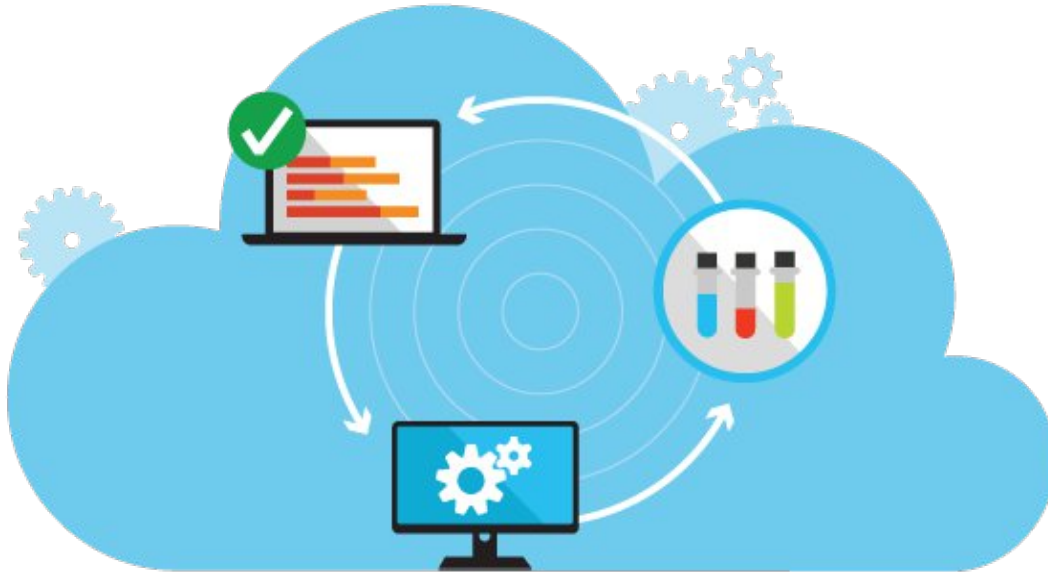
Describe what is an API and also explain why we cannot use APIs as user interfaces.

[Your answer]

Application Programming Interface (API) is a software intermediary that allows the creation of new application by accessing the data or features of a certain software application, operating system and other service. It contains procedures and functions that a programmer must follow to build software.

Exercise 2

What does an API-based solution consist? (Slide 20)



Explain what does an API-based solution consists of and draw a simple diagram with your imaginations placing them in that diagram.

[Your answer]

Exercise 3

API Design Decisions (Slide 22-26)



Very briefly explain different API Design Decisions.

[\[Your answer\]](#)

Exercise 4

API Design vs. API Architecture (Slide 27-28)



In what way API Design and API Architecture are different?

[\[Your answer\]](#)

Exercise 5

Consumer-Oriented Design Approaches (Slide 38-40)

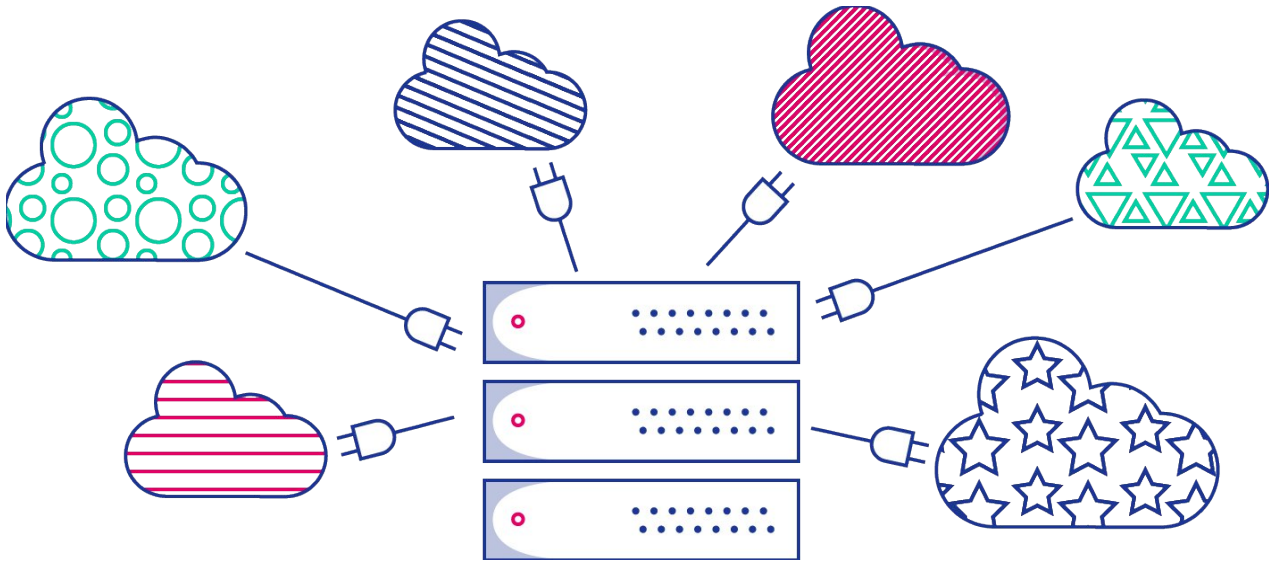


Explain the differences between Outside-in and Inside-out approaches in Consumer-Oriented Design.

[Your answer]

Exercise 6

API Design approach (Slide 44)

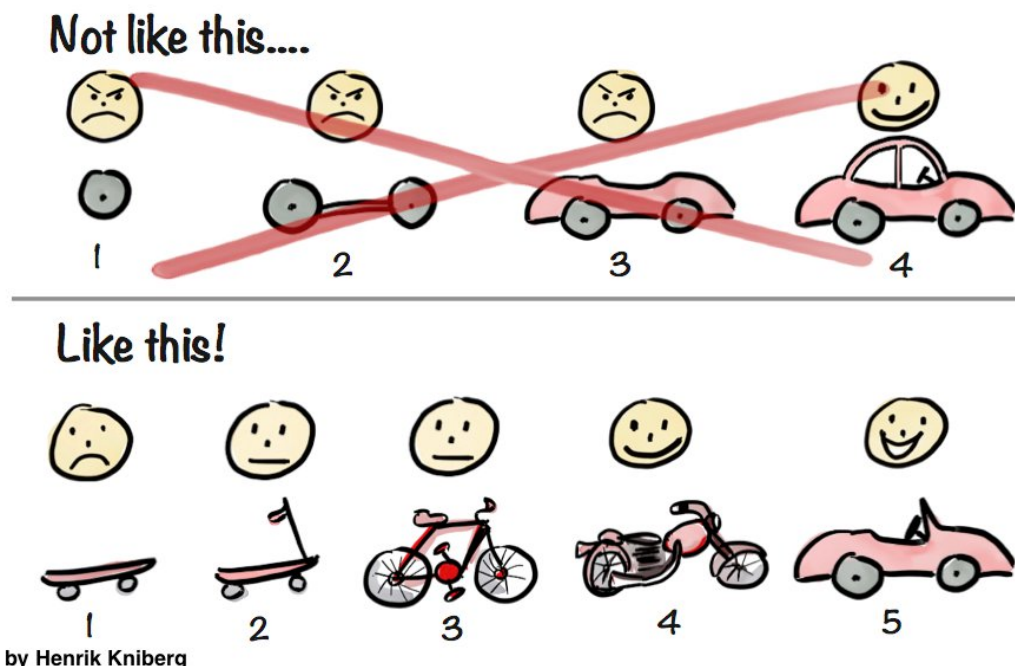


Briefly, explain each phase of API Design Approach.

[Your answer]

Exercise 7

Minimum Viable Product (Slide 51-52)



Briefly, explain MVP concept.

[Your answer]

Exercise 8

Related Articles



Search and find three beneficial online articles, videos, etc. related to the material of this part of the course, and briefly describe the material you learned from them.

Link 1:

Subject:

What you learned:

[\[Your answer\]](#)

Link 2:

Subject:

What you learned:

[\[Your answer\]](#)

Link 3:

Subject:

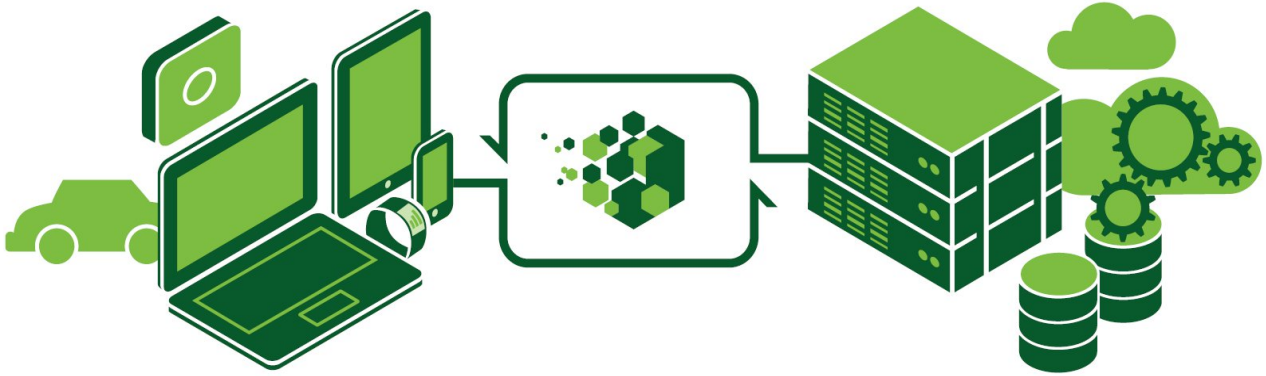
What you learned:

[\[Your answer\]](#)

Intermediate part

Exercise 9

API Description Languages (Slide 8-19)



Describe the purpose and usage of API Description Languages comprehensively.

[Your answer]

Exercise 10

Limitations of API Description Languages (Slide 20)

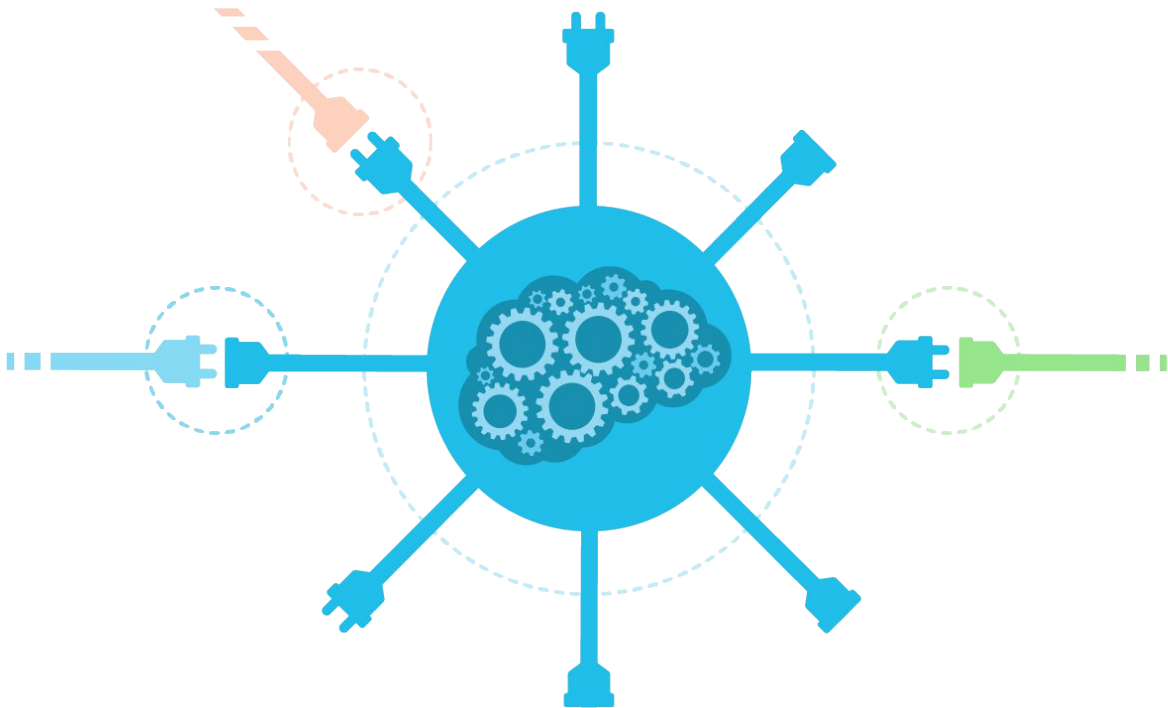


Describe the limitations of API Description Languages.

[\[Your answer\]](#)

Exercise 11

API properties (Slide 22)

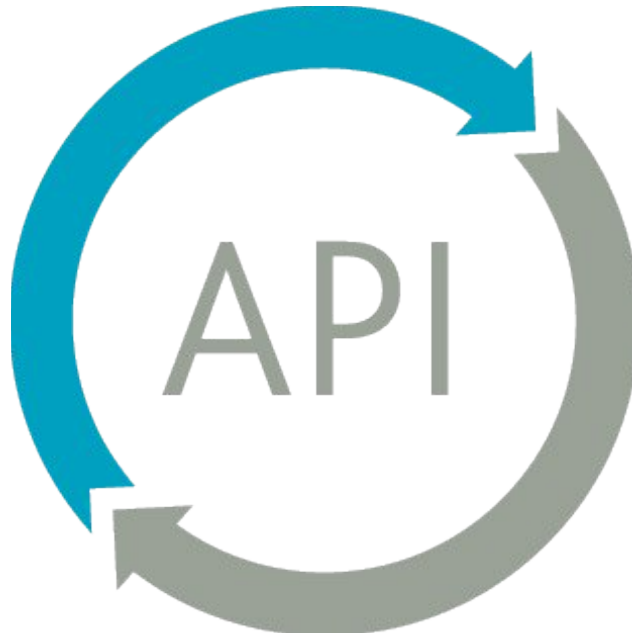


List API properties and explain one of them by your choice.

[Your answer]

Exercise 12

Different API Styles (Slide 28-30)



Select between RPC and HATEOAS and research from the internet and explain it.

[\[Your answer\]](#)

Exercise 13

Streaming (Slide 31)

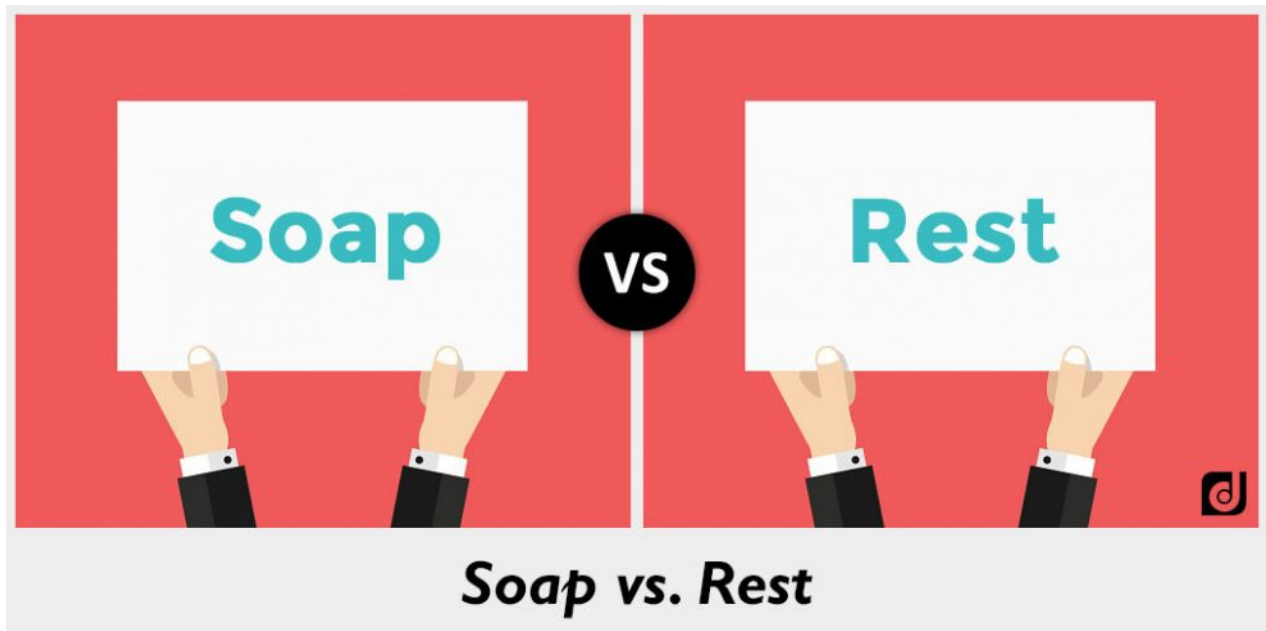


Select between a video or chat application using streaming, explain and provide technical information briefly that how they can provide such services.

[Your answer]

Exercise 14

REST vs. SOAP (Slide 32)



Fully compare REST with SOAP by researching the internet.

[\[Your answer\]](#)

[illegible]

18

- _____ Use only lower case
- _____ file extension
- _____ Plural names
- _____ capital character
- _____ slash "/" as the last character
- _____ underscores " _ "
- _____ Use hyphens "- " for better readability
- _____ blank

Exercise 17

API Base URL Naming Tips (Slide 64)



Suggest API Base URL for TechClass Portal considering the naming tips.

[Your answer]

Exercise 18

API Endpoints Tips (Slide 65)

ENDPOINTS

Suggest the URL of the following endpoints:

List of students:

[Your answer]

List of one student with certain Id:

[Your answer]

List of the photos of one user with certain Id:

[Your answer]

List of Reviewers of one product with certain Id:

[Your answer]

All the products in Electronics category:

[Your answer]

Exercise 19

Related Articles



Search and find three beneficial online articles, videos, etc. related to the material of this part of the course, and briefly describe the material you learned from them.

Link 1:

Subject:

What you learned:

[\[Your answer\]](#)

Link 2:

Subject:

What you learned:

[\[Your answer\]](#)

Link 3:

Subject:

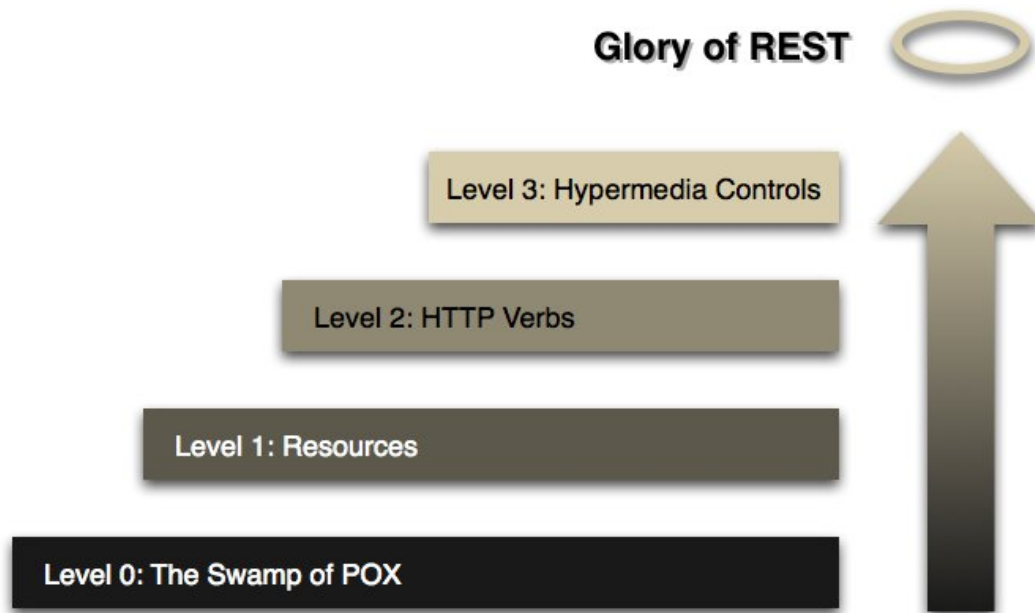
What you learned:

[\[Your answer\]](#)

Advanced part

Exercise 20

Richardson Maturity Model (Slide 8-17)



Explain Richardson Maturity Model and its different levels.

[Your answer]

Exercise 21

Content Negotiation (Slide 18-20)



Using the following link, explain Content Negotiation in ASP.NET Web API and provide examples:

<https://docs.microsoft.com/en-us/aspnet/web-api/overview/formats-and-model-binding/content-negotiation>

[Your answer]

Exercise 22

Parameters (Slide 21-28)



Search for the examples for the four different parameter types that we discussed and provide them here.

[\[Your answer\]](#)

Exercise 23

Security Concerns (Slide 41)

Authentication VS Authorization

By searching online, comprehensively explain Authentication and Authorization and their difference.

[\[Your answer\]](#)

Exercise 24

Security Concerns (Slide 41)

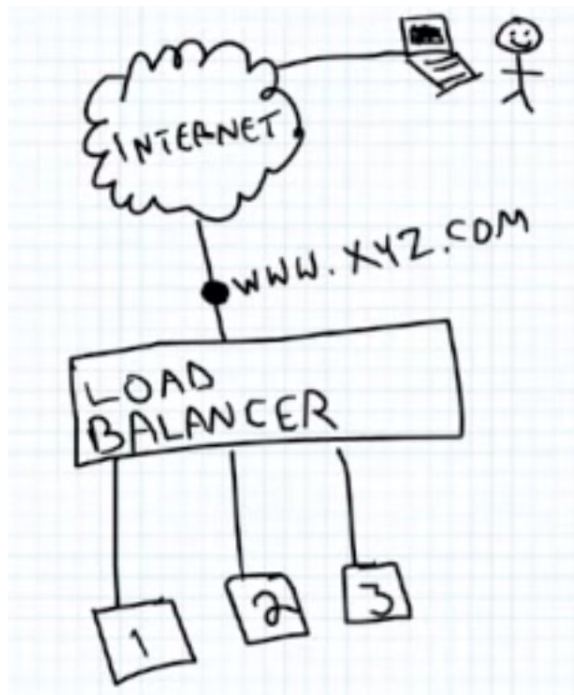


Find an example of a delegation from an App that is using an API and provide a screenshot.

[\[Your answer\]](#)

Video 1

Traffic Shaping – Load Balancer (Slide 48)



What the following video and briefly explain what you learned:

<https://www.youtube.com/watch?v=zHn2G71holk>

[Your answer]

Exercise 25

Related Articles



Search and find three beneficial online articles, videos, etc. related to the material of this part of the course, and briefly describe the material you learned from them.

Link 1:

Subject:

What you learned:

[\[Your answer\]](#)

Link 2:

Subject:

What you learned:

[\[Your answer\]](#)

Link 3:

Subject:

What you learned:

[\[Your answer\]](#)

You need to return this assignment for your final assessment.

Good luck! 😊
Farhad Eftekhari

Copyright © 2017 by TechClass Oy

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the publisher, except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law. For permission requests, write to the publisher, addressed "Attention: Permissions Coordinator," at the email address below.

TechClass Oy
www.techclass.fi
info@techclass.fi

