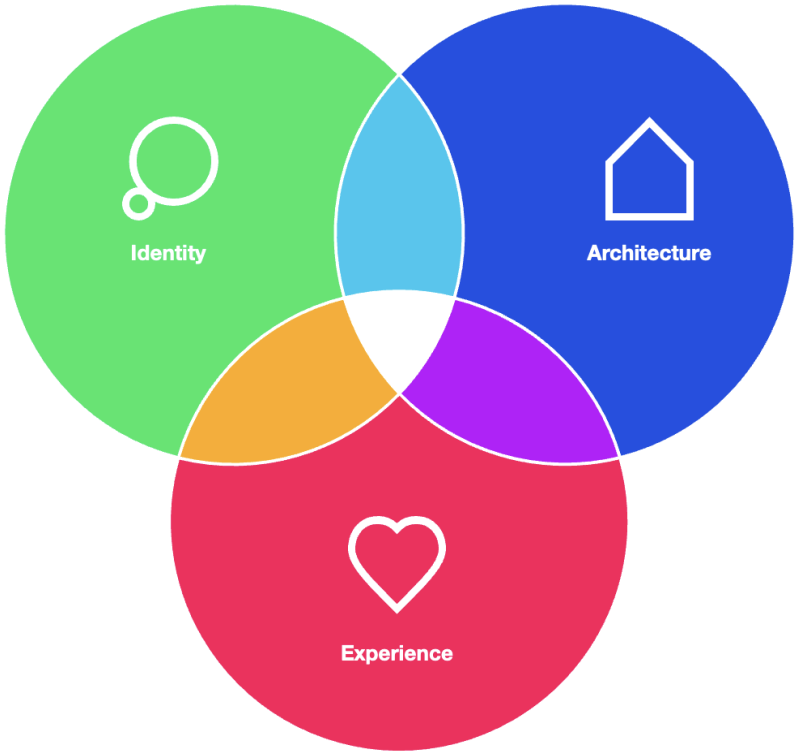
Application Architecture modelling with EDGY in abstraction levels of C4 model



2024-01-12

Eero Hosiaisluoma

Introduction

- **C4 model** is a software architecture visualisation approach that introduces four (4) levels of an software architecture:
  1) Context, 2) Container, 3) Component and 4) Code
- **EDGY** is a holistic enterprise design visualisation notation that can be used for modelling similar levels of an application architecture:
  1) Context, 2) Composition, 3) Component and 4) Classes

C4 model

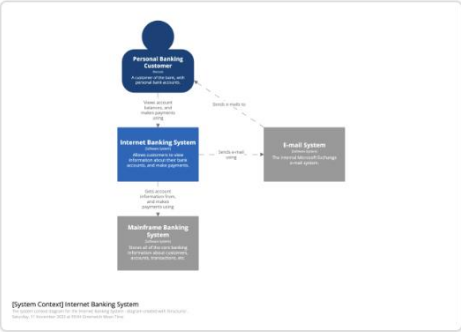
https://c4model.com/

Maps of your code

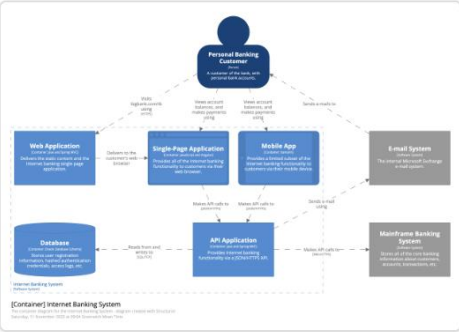
The C4 model was created as a way to help software development teams describe and communicate software architecture, both during up-front design sessions and when retrospectively documenting an existing codebase. It's a way to create maps of your code, at various levels of detail, in the same way you would use something like Google Maps to zoom in and out of an area you are interested in.

The C4 model for visualising software architecture

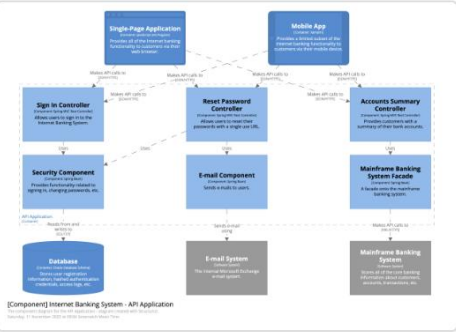
Context, Containers, Components, and Code



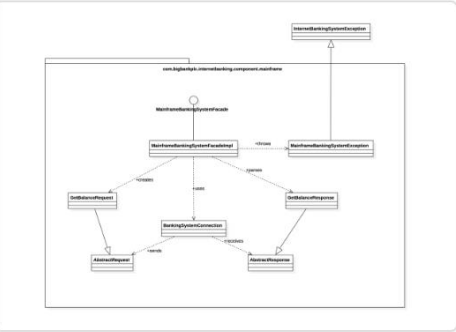
Level 1: A **System Context** diagram provides a starting point, showing how the software system in scope fits into the world around it.



Level 2: A **Container** diagram zooms into the software system in scope, showing the high-level technical building blocks.



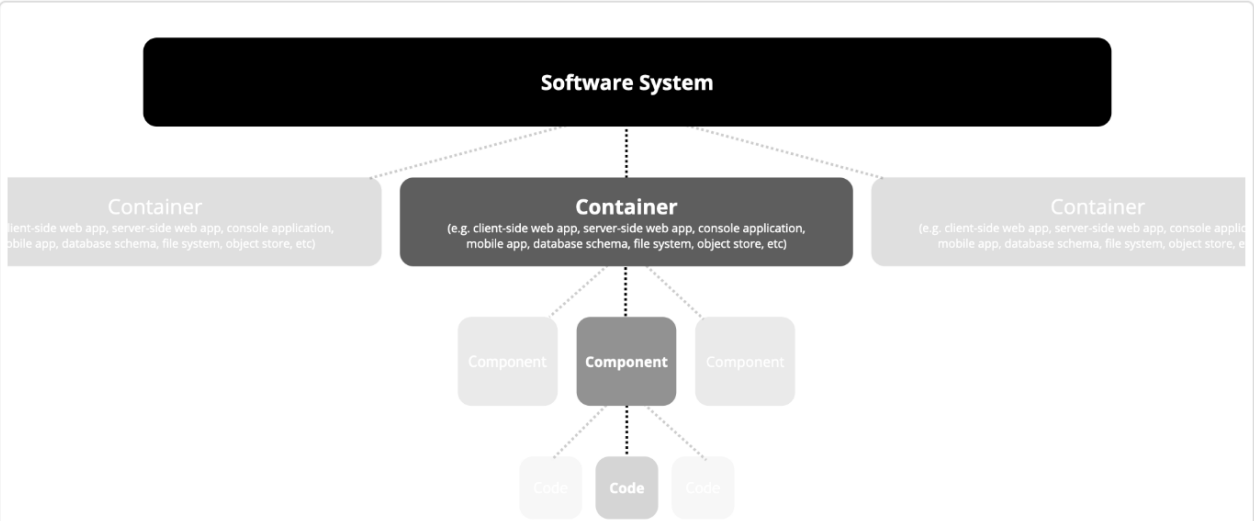
Level 3: A **Component** diagram zooms into an individual container, showing the components inside it.



Level 4: A **code** (e.g. UML class) diagram can be used to zoom into an individual component, showing how that component is implemented.

C4 model abstractions

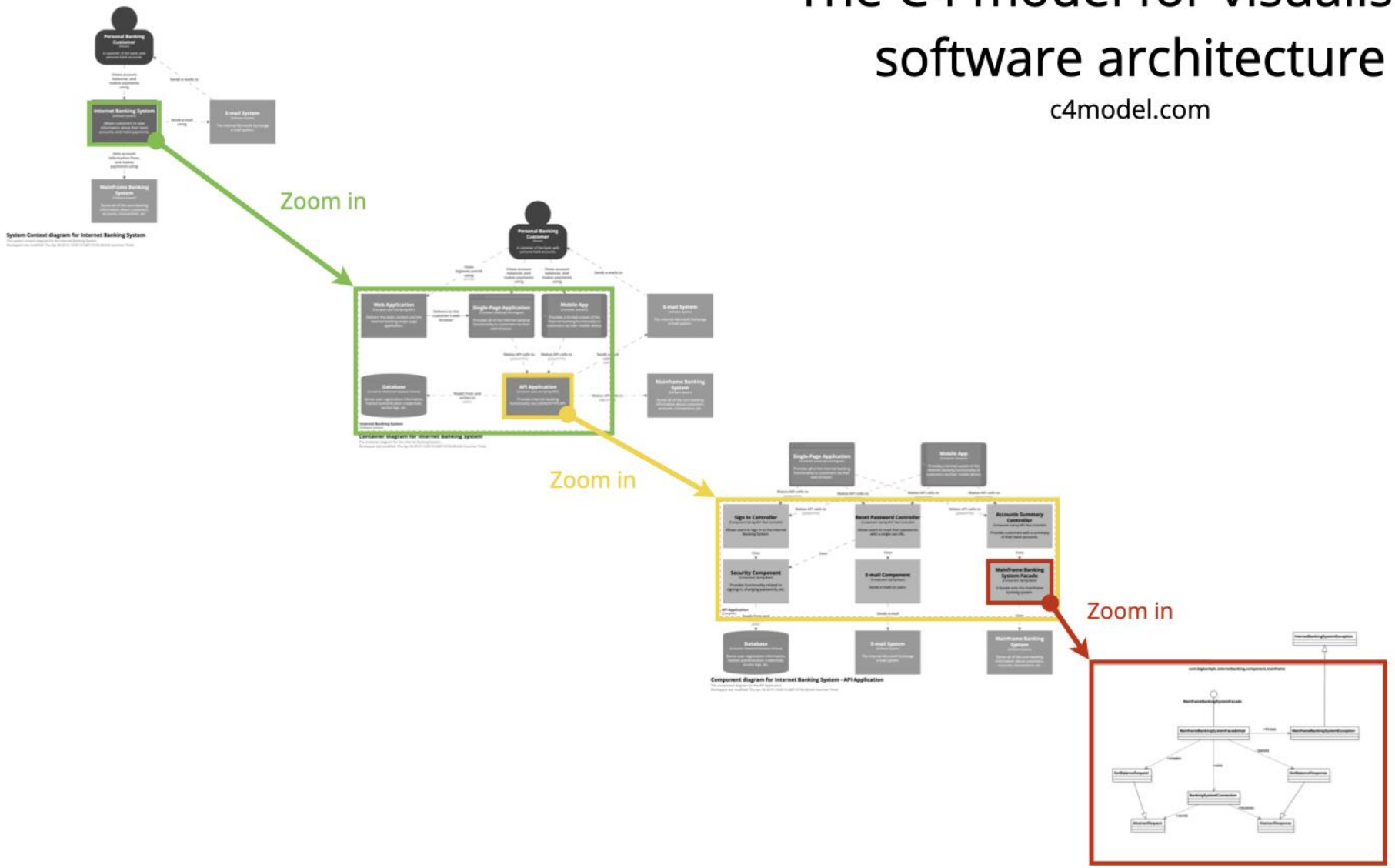
In order to create these maps of your code, we first need a common set of abstractions to create a ubiquitous language that we can use to describe the static structure of a software system. A **software system** is made up of one or more **containers** (applications and data stores), each of which contains one or more **components**, which in turn are implemented by one or more **code elements** (classes, interfaces, objects, functions, etc). And **people** may use the software systems that we build.



A **software system** is made up of one or more **containers** (applications and data stores), each of which contains one or more **components**, which in turn are implemented by one or more **code** elements (classes, interfaces, objects, functions, etc).

The C4 model for visualising software architecture

c4model.com



Level 1
Context

Level 2
Containers

Level 3
Components

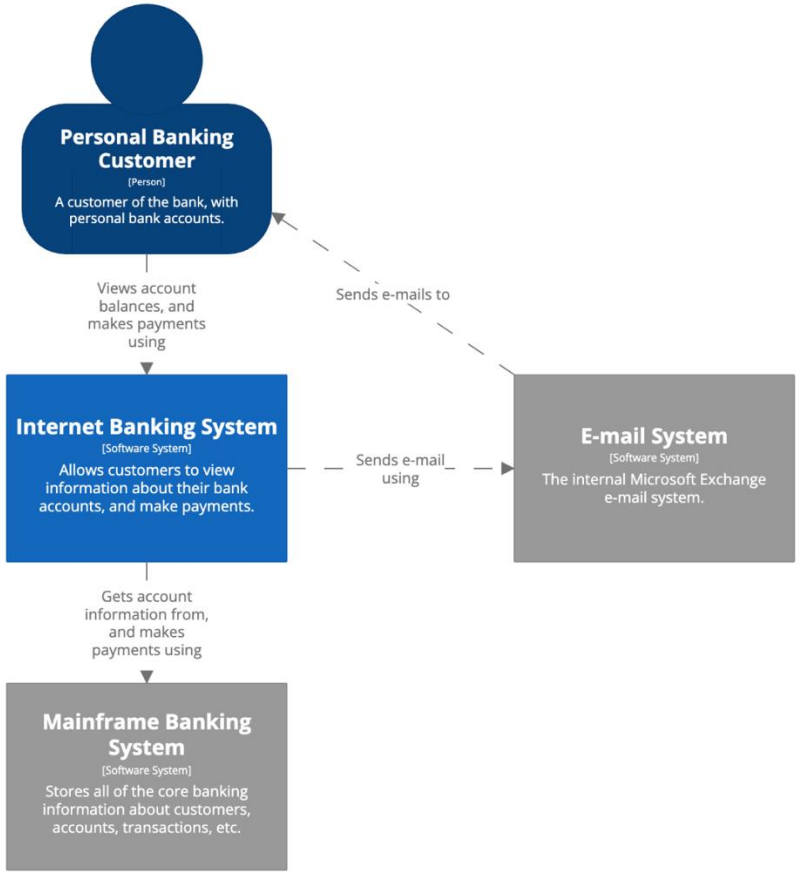
Level 4
Code

C4 model and EDGY

- Analogous diagrams can be modelled with EDGY
- Note! EDGY can be applied to entire enterprise
  - Not just for the application or sw architecture
- Next pages illustrate how similar diagrams can be created with both of the approaches…

Level 1

Context

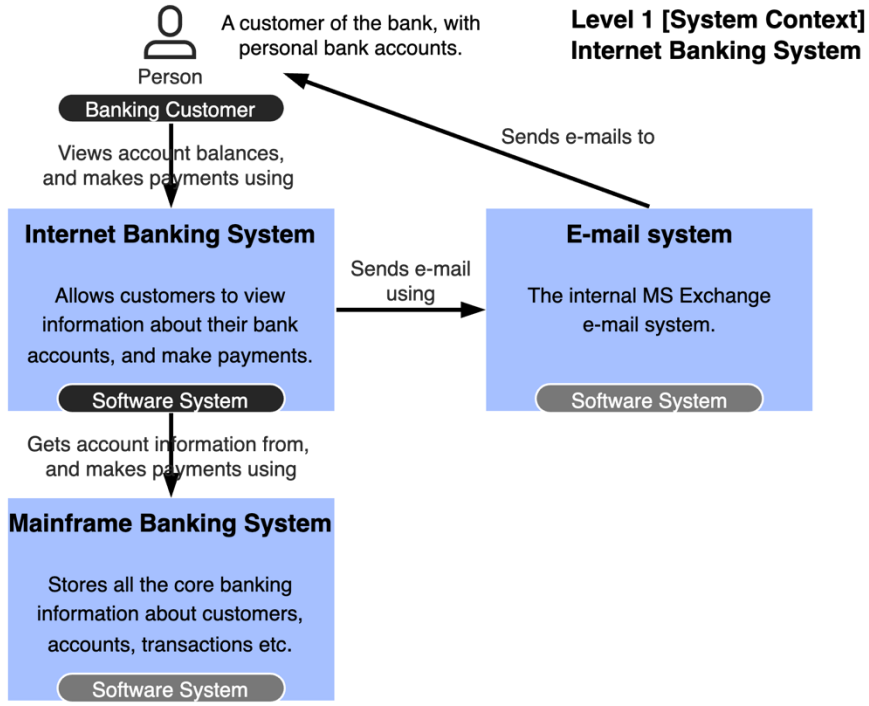


[System Context] Internet Banking System

The system context diagram for the Internet Banking System - diagram created with Structurizr.
Saturday, 11 November 2023 at 09:04 Greenwich Mean Time

C4 model → EDGY

Context

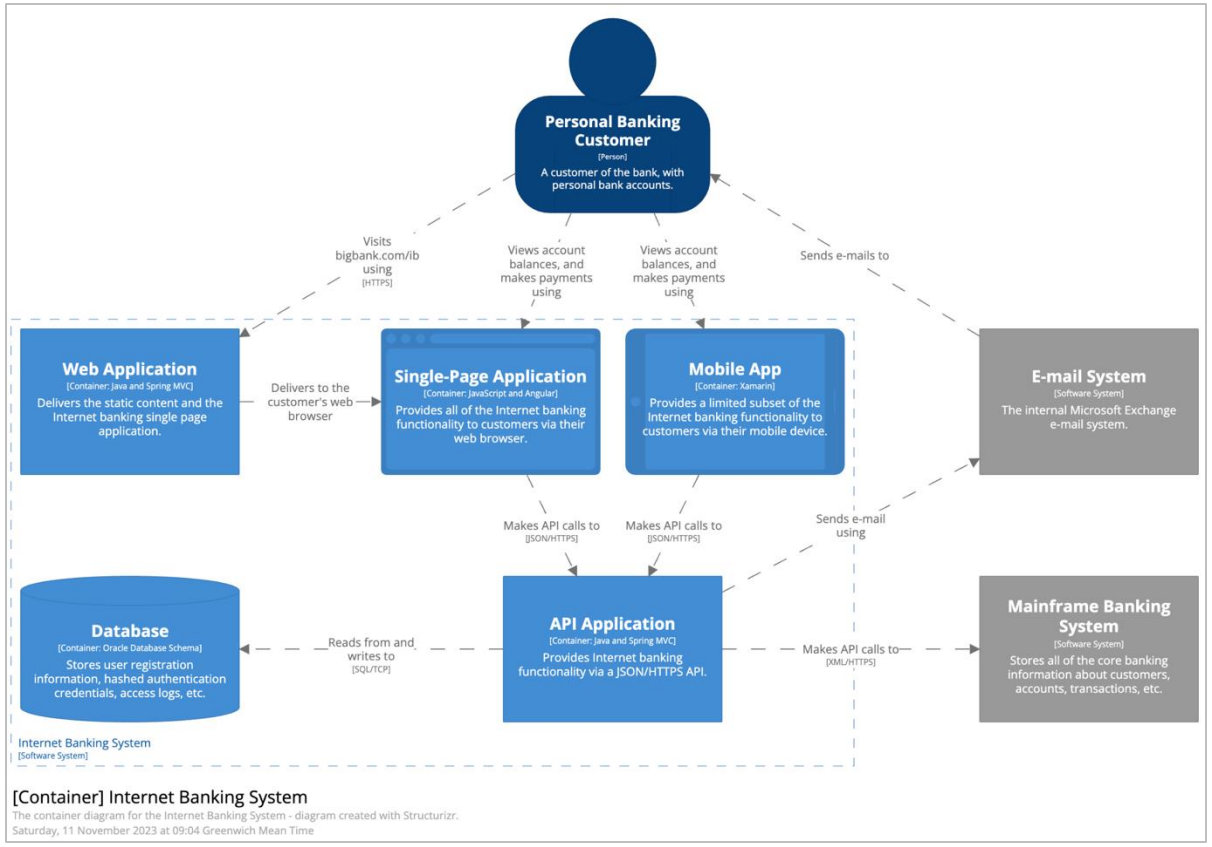


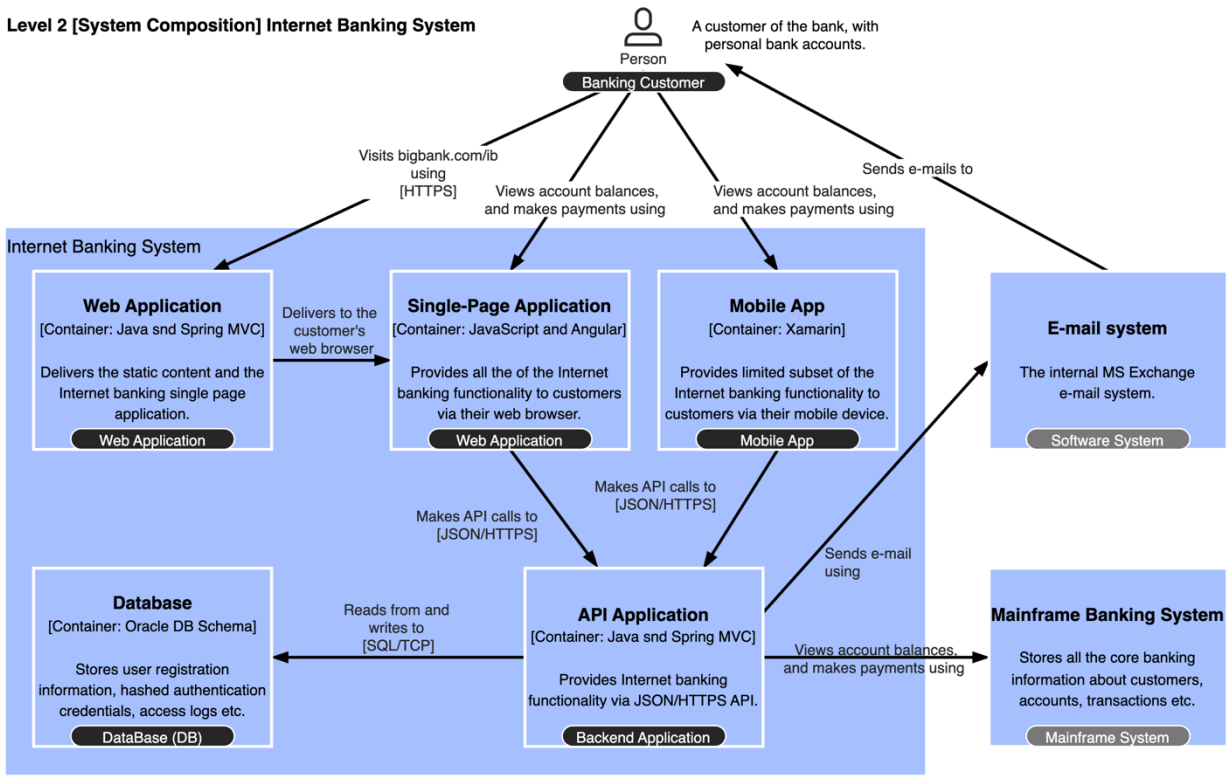
Level 2

Container

C4 model

Composition

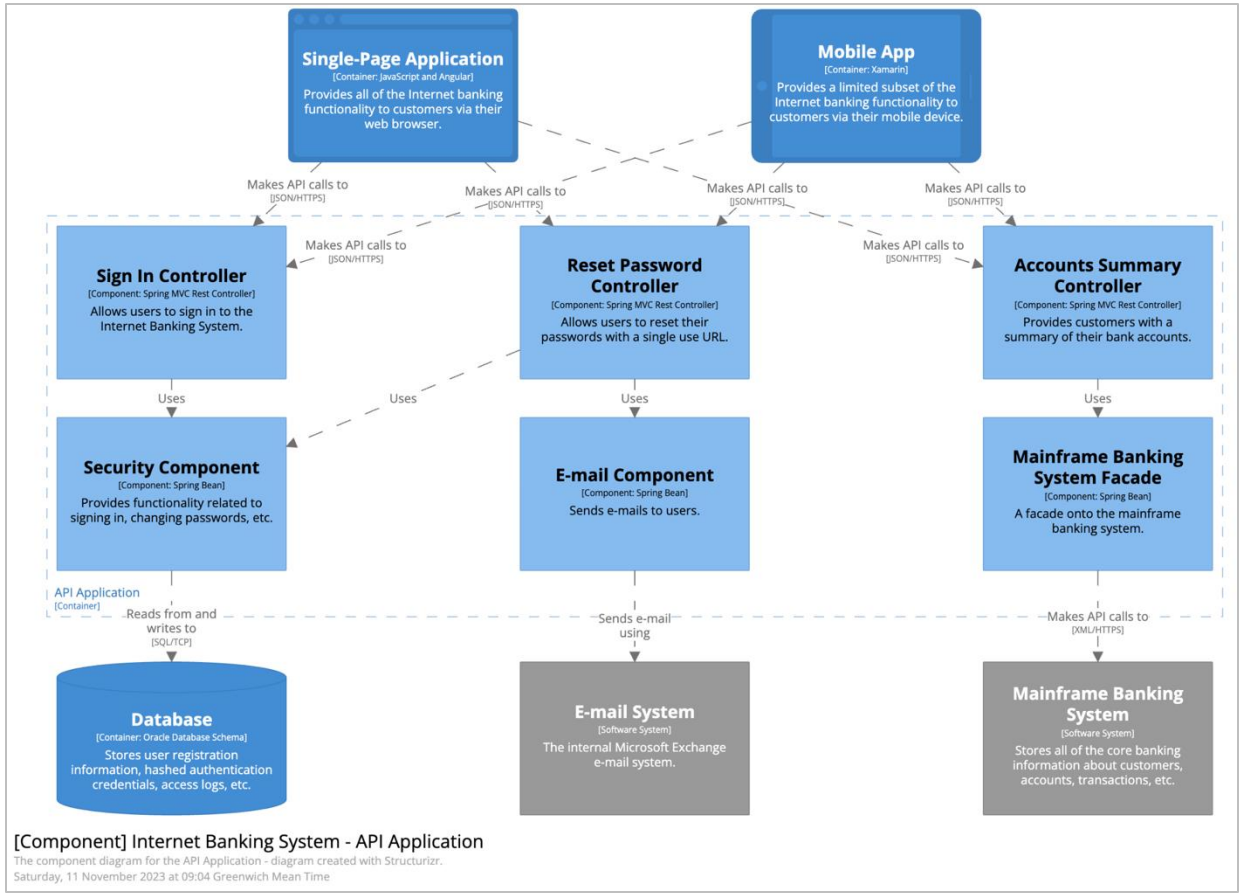




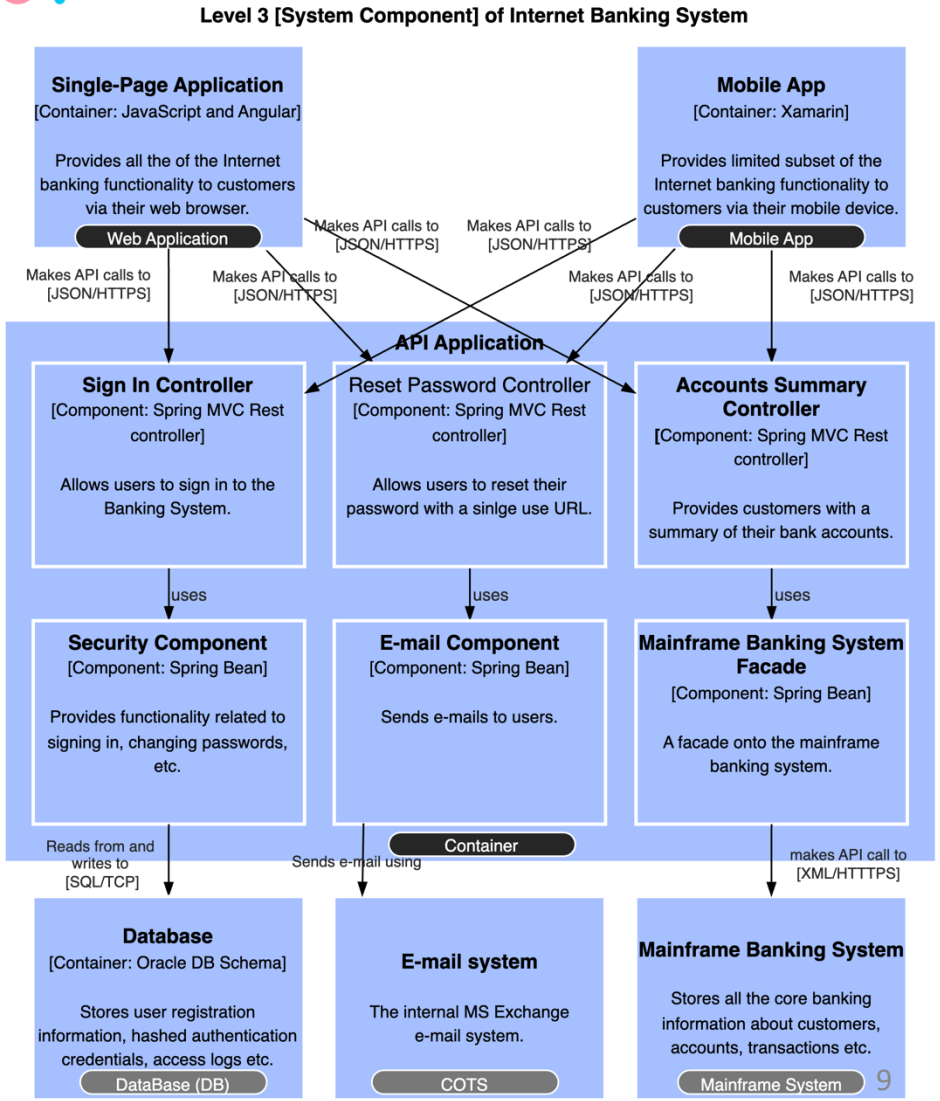
Level 3

Component

C4 model



Component

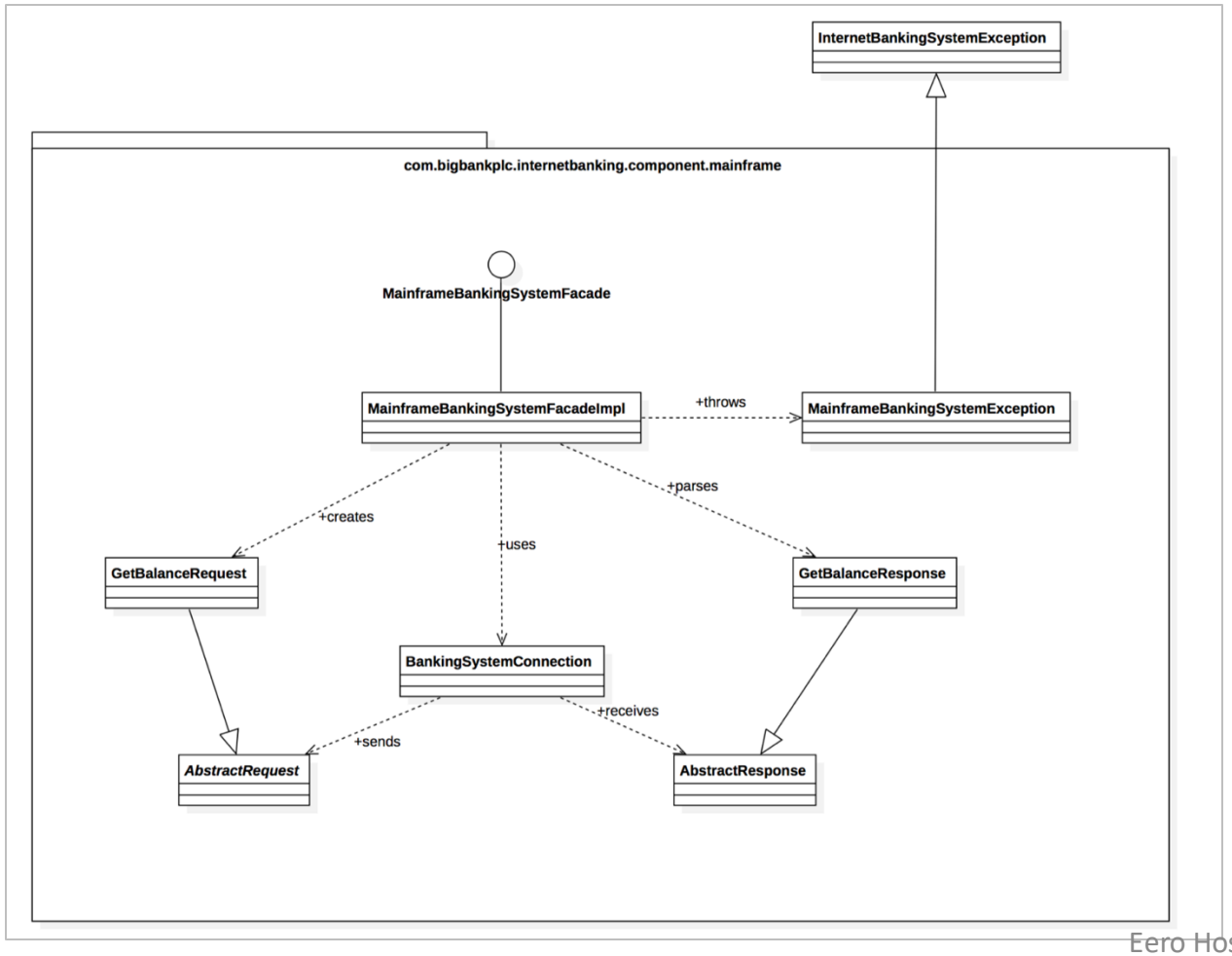


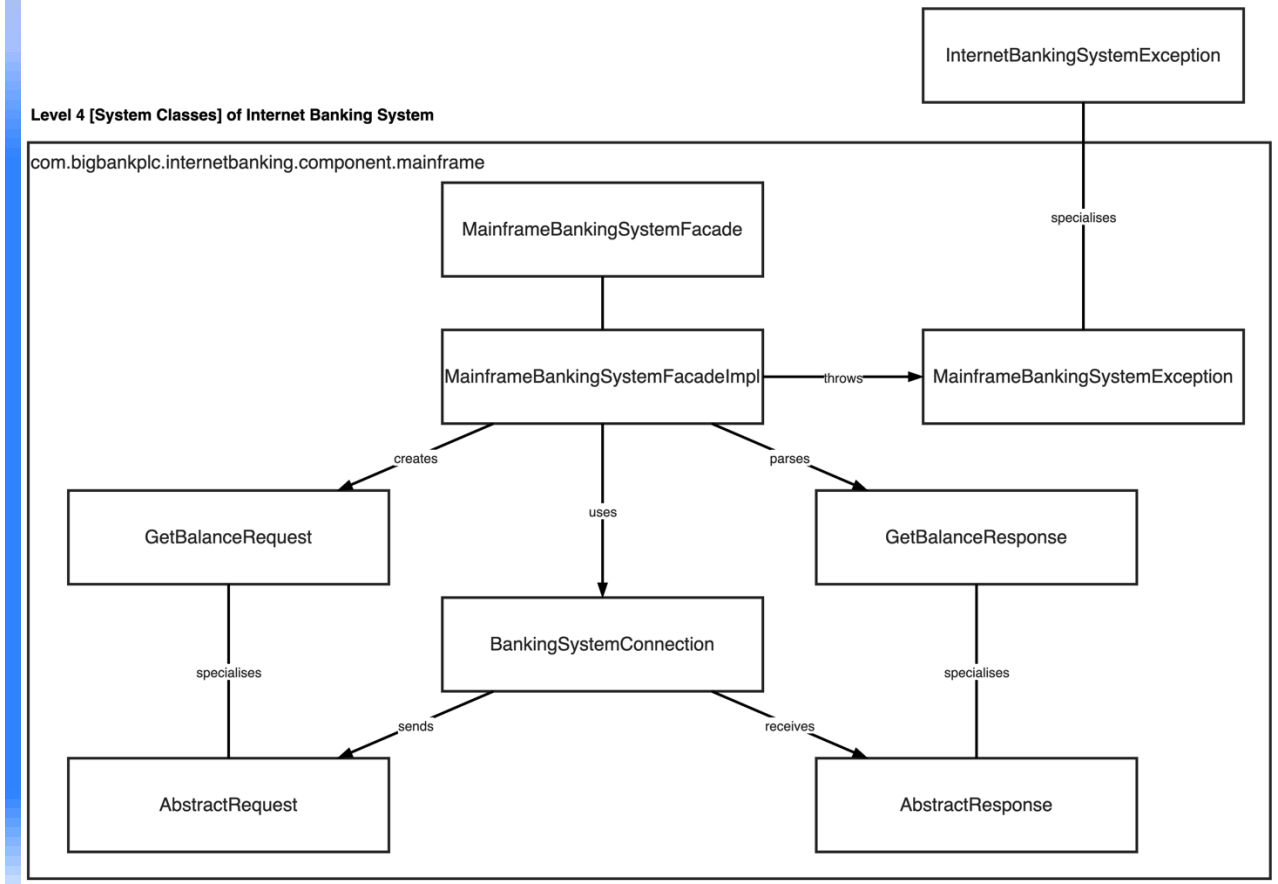
Level 4

Code

C4 model

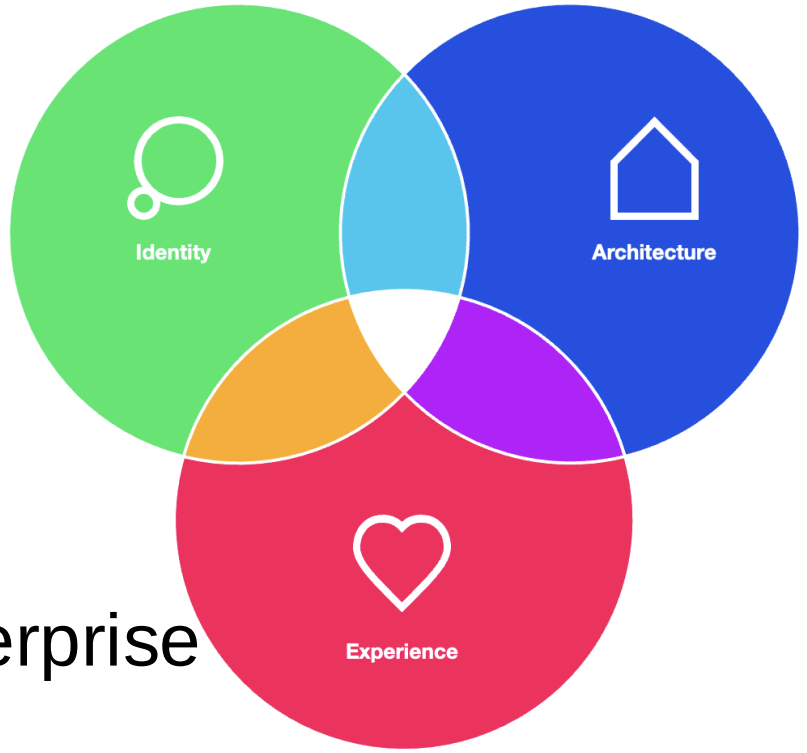
Classes





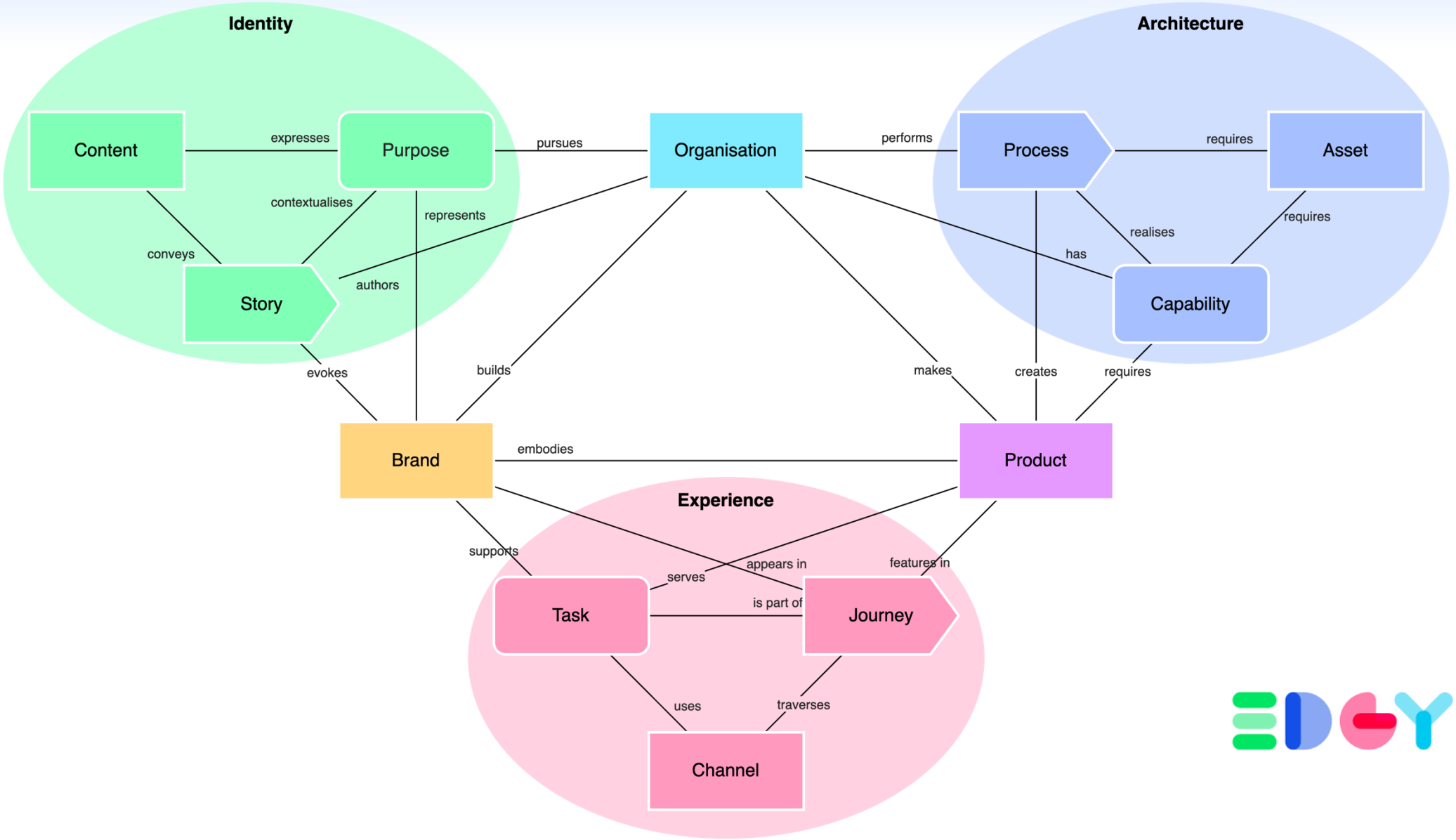
EDGY

- EDGY can be applied to entire enterprise
  - Not just for the application or sw architecture



- EDGY covers all the perspectives of an enterprise
  - **Identity**, the purpose and goals of the business
  - **Architecture**, the operational business
  - **Experience**, the needs of the customers, partners, employees etc.

EDGY elements



EDGY materials

- Intersection Group
  - https://intersection.group
- Enterprise Design with EDGY
  - https://enterprise.design/
- *Holistic Enterprise Design* blog by Eero Hosiaisluoma
  - https://hosiaisluoma.fi/design/
- *Component Model (an Application Architecture approach)*
  - https://hosiaisluoma.fi/design/component-model-1-2-3/