

European Software
Skills Alliance.

ESSA Learning material

DEVELOPER (EQF6)

PLO2 - Application Development [e-3]

LEARNING UNIT (LU): 2.2 Development basics

TOPIC: **Object design - Mini Bank - Exercise Solution**

ess.e



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Disclaimer

This learning material has been developed under the Erasmus+ project ESSA (European Software Skills Alliance) which aims to skill, upskill, and reskill individuals into high-demand software roles across the EU.

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About ESSA

The European Software Skills Alliance (ESSA) is a four-year transnational project funded under the EU's Erasmus+ programme. It ensures the skills needs of the rapidly evolving Software sector can be met — today and tomorrow.

ESSA provides current and future software professionals, learning providers and organisations with software needs with the educational and training instruments they need to meet the demand for software skills in Europe.

ESSA will develop a European Software Skills Strategy and learning programmes for Europe. It will address skill mismatches and shortages by analysing the sector in depth and delivering future-proof curricula and mobility solutions; tailored to the European software sector's reality and needs.

Project partners

The ESSA consortium is led by DIGITALEUROPE. It is composed of academic and non-academic partners from the education, training, and software sectors.

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Mini-bank project

We want to do a conceptual study of a bank that offers minimalist services.

This bank offers its customers the possibility of opening a bank account. These customers may be individuals or companies (legal entities).

Each account has a unique identifier and the name of the account holder:

- A surname and first name if the account holder is a natural person
- The "company name" in the case of a legal entity

A customer manager is responsible for opening accounts and managing the company's operations. Cash deposits and withdrawals (these are limited to these operations). Customers can only check their balance. A withdrawal or deposit transaction concerns a single account and includes a date and an amount.

To carry out all these transactions, customers and account managers must authenticate themselves to the system.

Work required

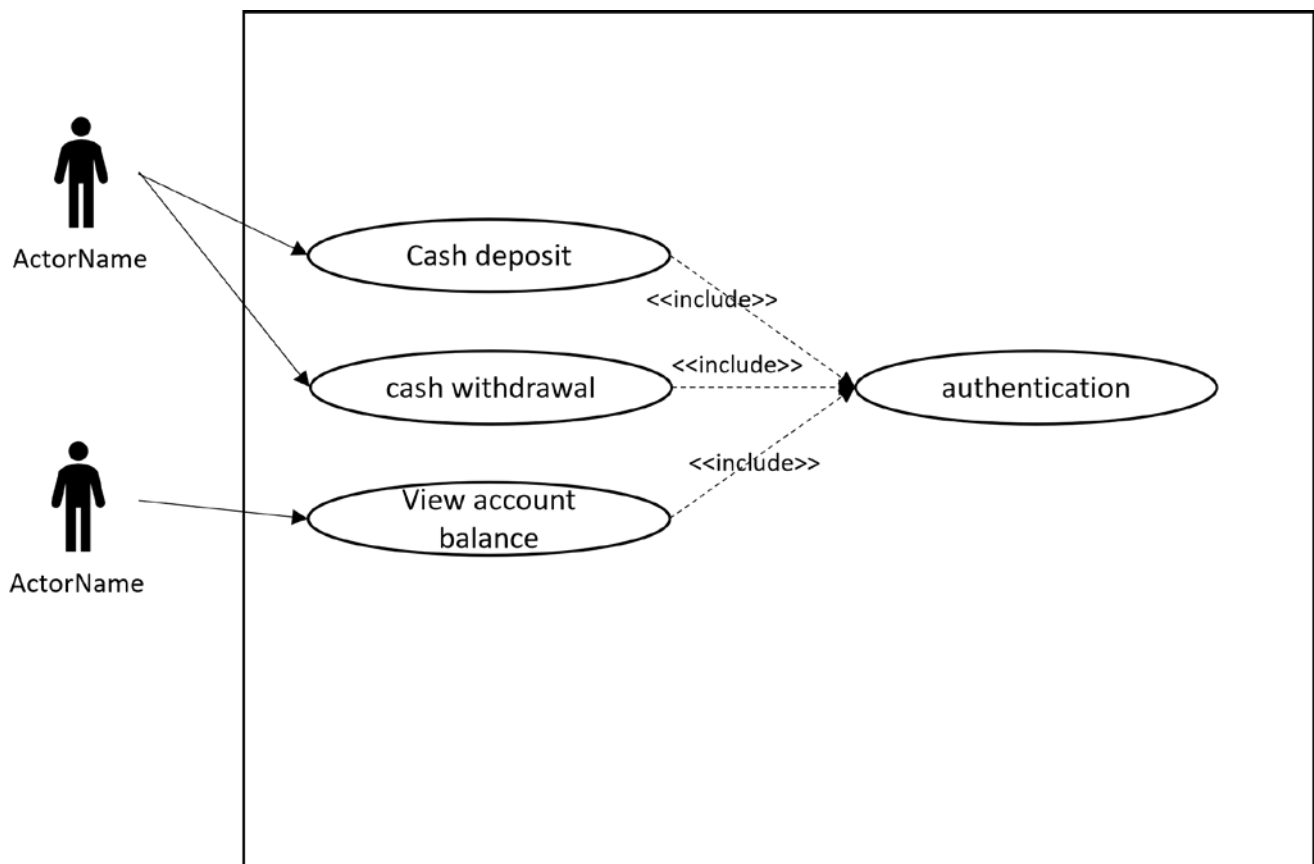
1. Identify the actors
2. Design the Use Case Diagram
3. Design the Class Diagram
4. Design the sequence diagram that details the withdrawal use case of money by taking into account the following assumptions:
 - a. The system consists of a presentation server and a database
 - b. When a customer manager initiates a withdrawal transaction, the server must verify that the amount available is greater than the desired withdrawal amount.

Solution

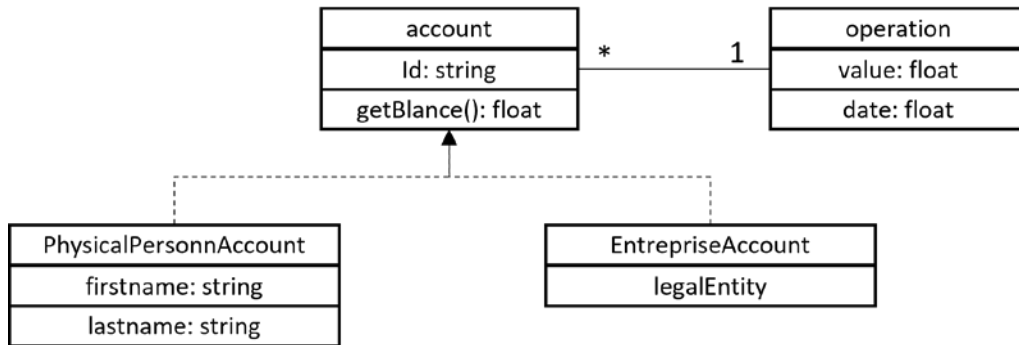
1. Identify the actors

The actors are the **customer** and the **account manager**

2. Design the **Use Case Diagram**

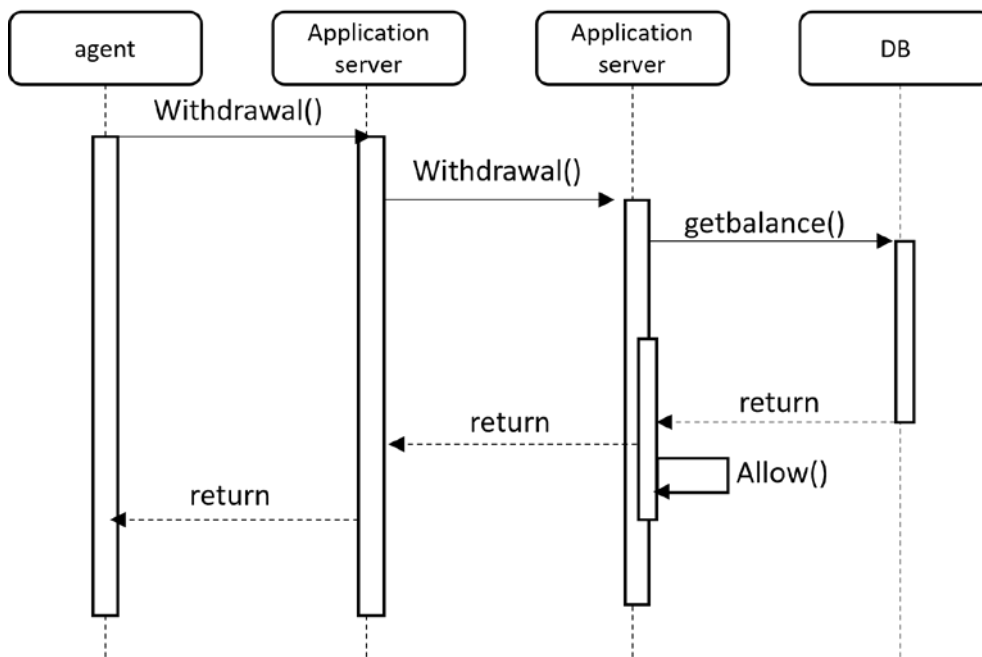


3. Design the **Class Diagram**



4. Design the **Sequence Diagram** that details the withdrawal use case of money by taking into account the following assumptions:

- a. The system consists of a presentation server, a and a database
- b. When a client manager initiates a withdrawal operation, the server must verify that the amount available is greater than the desired withdrawal amount.



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