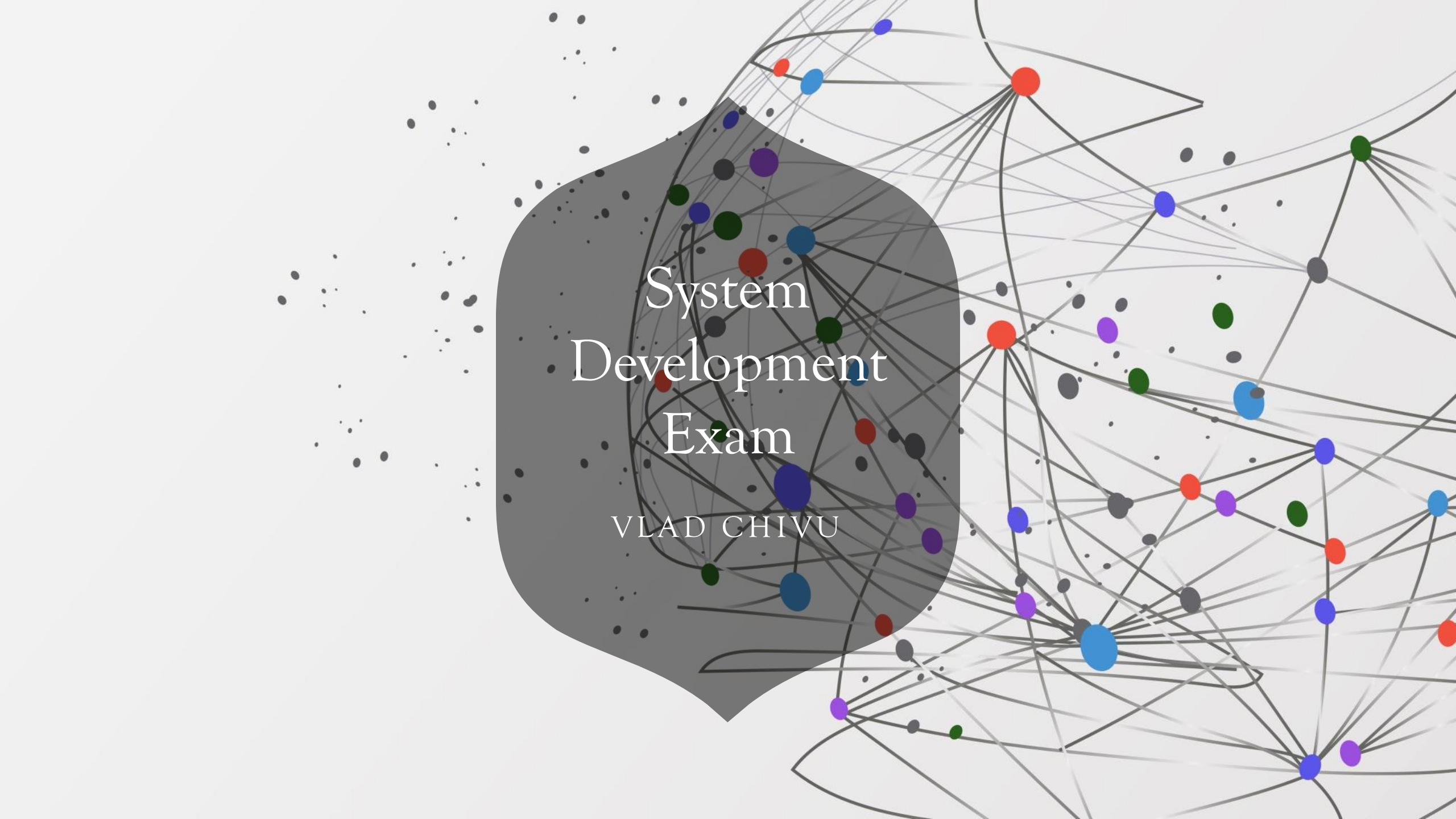

System
Development
Exam
VLAD CHIVU

Focus and Objective

Find a way for collaborating and perfect it by measuring the delivery with each iteration.

Progress is measured both individually through the efficiency of the tasks applied to deliver a feature of the product,

and collectively through the efficiency of the process followed in our combined efforts to accomplish the goal.

the Example

Problem:

A Cinema Movie chain needs a standard solution for its digital business. Top priority is standardization as every theater might choose to display information differently.

Solution:

Standardization → standard output format JSON

Scaling → microservice architecture

} REST API

the Choice

Given Context:

- A PO handed us a very concise list of requirements in plain text
- Fixed deadline to deliver
- Implementation language was set to Java
- No previous process was developed as we are a new team

Choice: XP & Scrum

We are a self-organizing team with agreed-upon standards, collective ownership, and a limited time to deliver together with the possibility for every team member to organize its own work following still a common vision is what convinced us to choose this way of working.

the Plan before Planning

- Understand what is required (Product)
- Understand the agile way & principles of the XP framework
- Understand Scrum
- Understand the current technology used & other tools for construction

Collaborating standards

- One shared code base & other independently managed developing environments
- Peer reviews before commits to central repository
- Clean code (e.g. agreed upon indentation, directory structure)
- Develop according to standards (e.g. low coupling, interfaces)
- Commitment to Quality assurance points & deadlines
- Test every service, document your own work

Analysis

Input → System → Output

Our Input & Output was determined from the requirements. This data grouped together formed our DTOs.

DTOs → Schema modeling → ER diagram

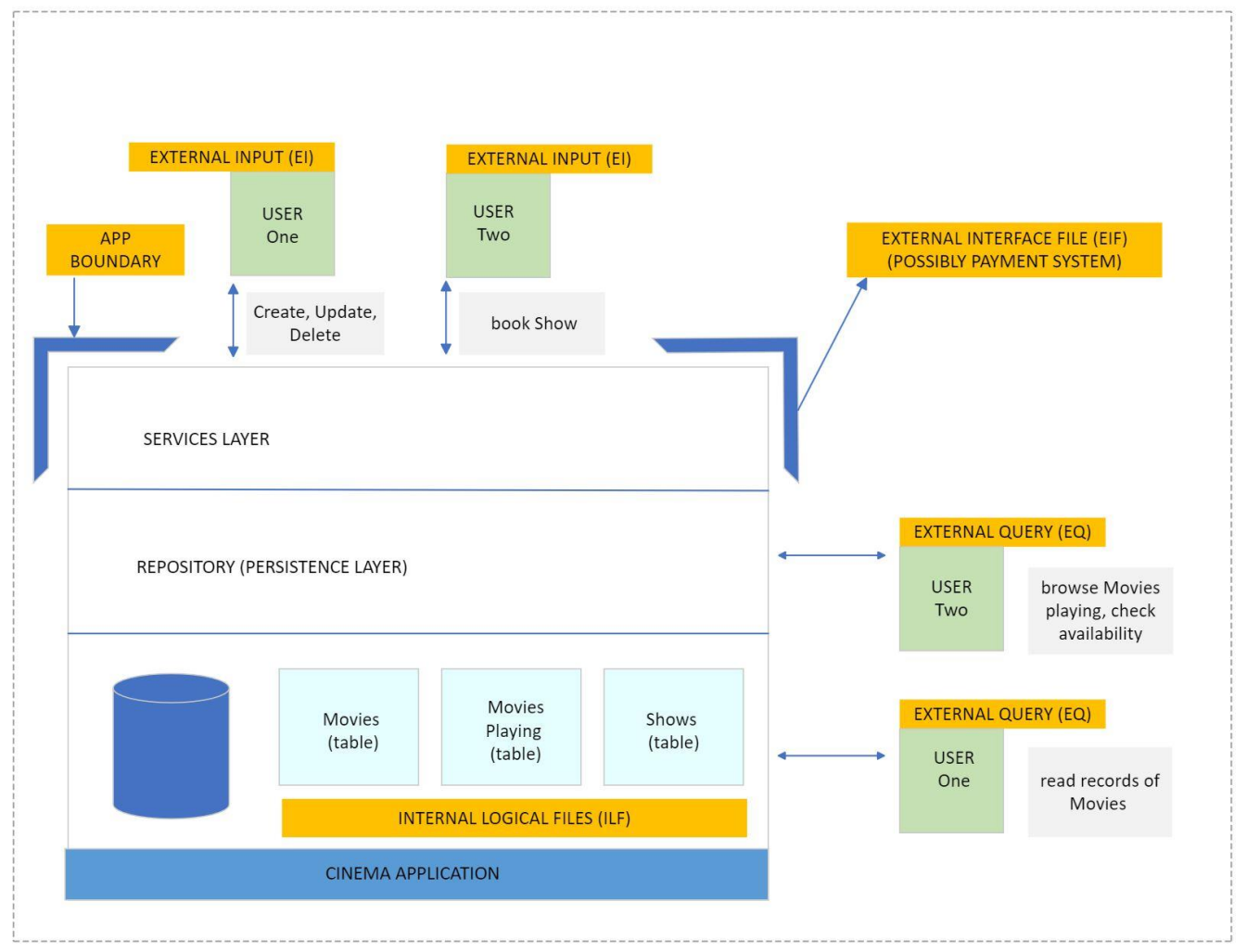
Estimates & Risk Plan

FP analysis:

- 8 user inputs
- 8 user inquiries
- 9 Internal Logical Files (Domain Entities)
  127 x (0.65 + 0.01 x 45) = 140 points;
  after some metrics have been collected, we can enhance this and give a rough estimate of time per complexity by multiplying the points by the complexity factor found.

  We also made a complexity analysis of the user stories to be implemented and agreed that if we submit ourselves to the task we can deliver this back-end prototype on time.

  Yet as the risk analysis suggests there are also many factors that could put the delivery on time to danger so we agreed that extra hours could be arranged if that is the case.



Independent work

Activity #1 → Database, Persistence (JPA), Tables, Entities

DATABASE, JPA, TABLES

- Workbench data modelling
- Generation of project structure together with the required dependencies
- Configure Spring actions through the application.properties file

Independent work

Activity #2 → Service Definition

Express in your own words what is the service supposed to do,

define the quality assurance points,

define testing conditions, and possible errors.

Activity #3 → Service Implementation

Activity #4 → Define and Implement the request handlers

{REST:API}

Overview of the Process

We used Trello as our Scrum board with a Product Backlog & other columns to determine the status of each feature and the person responsible for it.

For most of our Sprints, we had daily meetings, and someone was responsible for keeping a record of it. Things like what we have accomplished since the last time, what problems we faced, or what went well, we collected them in a document so that we can further discuss this at our next retrospective meeting and possibly improve on the least strong points or make a standard of our best points. This way of thinking and doing is what drove us to reaching the initial goal.