Research

Text

Description automatically generated with medium confidence

30/04/2022 Eindhoven

Version: 0.1

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# Version

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| Version | Date | Autor | Changes | Status |
| 0.1 | 03/04/2022 | Lars Kluijtmans | Made new document for research question. | Not finished |
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# Introduction

Research document for Game market.

# Research Questions

## Problem 1:

What are model and DTO (Data transfer object) used for.

## Major question 1:

When to use a model and when to use a DTO

## Minor questions 1:

What is a model?

* Literature study

A model is used to separate the controller from accessing the data directly according to the MVC flow (Model-view-controller). It is described as representing the business layer of a application. (Choudary, 2021)

Others referee to it as an Model Object or MO for short, these are mapped closely to a corresponding database table and are often used as return values for a Data Access Object. (Java Practices, 2018)

Although the two definitions may seem similar one uses a model a object that can be transferred between the business and database layers but also refers to it as representing the business layer and the other describes it as closely related to the database even saying that it is “often map roughly to the records of a corresponding database table.“. (Java Practices, 2018)

I would have to conclude that a model differs in function depending on the contest it is used in. If it appears related to a MVC flow then it has the function of a transitional object that is used in transferring data from the database layer to the business layer. If found in the context of a Model Object or used in reference to a Data access object it will be more closely related to the database layer and even the database structure itself.

* Available product analysis
* Community research

What is a DTO?

* Literature study

DTO is a abbreviation for data transfer object. The DTO pattern is used to reduce the number of methods called by combining multiple variables in one call, these contain no login and are used as storage. They are often composed of multiple models or parted of them. (Daeldung, 2022)

The DTO pattern is also mentioned often as a “objects that aggregate and encapsulate data for transfer”. It should contain serialization and deserialization mechanisms but no logic. The DTO are custom made to only send the data that is needed and to not include sensitive information increasing the security of the application. (Seniuk, 2020)

In conclusion a DTO is used as a collection of data that can be composed of multiple models or variables that include exclude unrequired or sensitive data and so increases security and speed. It also decreases the number of requests needed.

* Available product analysis
* Community research

Are there alternatives to model and DTO?

* Literature study
* Expert interview
* Design pattern research

Why would you convert a model to a DTO?

* System test
* Security test

What are the advantages and disadvantages of a model?

* Problem analysis
* SWOT analysis

What are the advantages and disadvantages of a DTO?

* Problem analysis
* SWOT analysis

Why would you convert a DTO to a model?

* Design pattern research
* Expert interview

When to convert a model to a DTO

* Design pattern research
* IT architecture sketching

When to convert a DTO to a model

* IT architecture sketching
* Design pattern research

## Problem 2:

How to identify a product.

## Major question 2:

How to identify a product without using a regular id?

## Minor questions 2:

What is a id?

* Literature study
* Community research

What are ids used for?

* Literature study
* Available product analysis

What different types of ids are there?

* Literature study
* Available product analysis
* Expert interview
* Design pattern research

What is a UUID?

* Literature study
* Community research

What advantages and disadvantages are there to a UUID?

* Problem analysis
* SWOT analysis