**UNIVERSIDAD DISTRITAL**
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**Faculty of Engineering.**


**Subject: Software Modeling**


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**Workshop 1 Arcade Video Games Machine**


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# Indice

## Introduction:

In this technical report, we present comprehensive documentation for the development and application of a software solution tailored to meet the needs of an arcade video game machine company. The software has been designed to streamline the processes of managing a catalog of arcade machines, handling customer interactions, and supporting the sales, customization, and financing of arcade systems. This report includes an in-depth analysis of the system's architecture, the rationale behind key design decisions, detailed business rules, and the methodologies used to ensure the robustness and scalability of the solution

## Business Rules:

- Choose the type of materials of a machine to buy: wood, aluminum or carbon fiber.
- Displays the list of available games.
- Add games based on a code to the machine to be purchased.
- Finalize the purchase of the machine and add customer information for delivery.

## Stakeholders:

- Users: people can purchase the arcade video game machine
- Sellers: people can publicated and update the catalog

## Tols
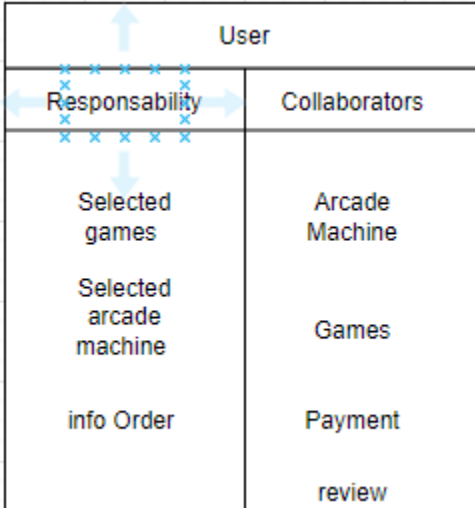
**Programming Language:** Python

## User Stories

1. **As a user**, I want to **choose the type of materials (wood, aluminum, or carbon fiber) for the arcade machine** so that I can customize the machine to my preferences.
   - **Acceptance Criteria**: The user can select from a list of material options before adding the machine to the cart.
2. **As a user**, I want to **see a list of available games** for the arcade machine so that I can select the games I want to add to the machine.

- ○ **Acceptance Criteria**: A list of games will be displayed when customizing the machine, with details such as name, genre, and classification.
3. **As a user**, I want to **add specific games to the machine using a game code** so that I can customize the machine with the games I prefer.
    - ○ **Acceptance Criteria**: The user can input game codes, and the system will validate and add the game to the machine if the code is correct.
4. **As a user**, I want to **finalize the purchase of the arcade machine and input my personal information for delivery** so that I can ensure the machine will be delivered to my desired location.
    - ○ **Acceptance Criteria**: After completing customization, the user will be prompted to enter delivery information, and the system will confirm the purchase.
5. **As a user**, I want to **customize the arcade machine with a variety of games** so that I can personalize the entertainment experience.
    - ○ **Acceptance Criteria**: The user can select multiple games from the list of available games and add them to the machine.
6. **As a user**, I want to **review the customization options of the arcade machine (materials and games added)** before finalizing the purchase so that I can confirm my choices.
    - ○ **Acceptance Criteria**: The user is able to review selected materials and games before proceeding to checkout.
7. **As a customer**, I want to **receive an estimated delivery date after providing my shipping details** so that I know when to expect my arcade machine.
    - ○ **Acceptance Criteria**: After submitting delivery information, the system displays an estimated delivery date based on the shipping method chosen.
8. **As a customer**, I want to **choose between payment options, including financing plans**, so that I can select the most convenient way to pay for the machine.
    - ○ **Acceptance Criteria**: Multiple payment options, including installments, will be available before finalizing the purchase.
9. **As a user**, I want to **track my order status after completing the purchase** so that I can stay informed about when the machine will be delivered.
- ● **Acceptance Criteria**: The system provides an order tracking feature after purchase confirmation.

## CRC Cards

| Arcade Machine | |
| --- | --- |
| Responsability | Collaborators |
| conteined games | Games |
| add games | User |

| Game | |
| --- | --- |
| Responsability | Collaborators |
| info game | Arcade Machine |
| | User |

| User | |
| --- | --- |
| Responsability | Collaborators |
| Selected games | Arcade Machine |
| Selected arcade machine | Games |
| info Order | Payment |
| | review |

| Review | |
|---|---|
| **Responsability** | **Collaborators** |
| show comentaries whir user | user<br><br>arcade machine |

## Diagram class

**Purchase**
- ☐ arcade_machine: ArcadeMachine
- ☐ payment_method: PaymentMethod
- ☐ customer_name: String
- ☐ address: String
- ☐ phone_number: String
- ● gather_customer_info(): void
- ● finalize_purchase(): void

**ArcadeMachine**
- ☐ material: String
- ☐ games: List<Game>
- ☐ price: float
- ● choose_material(): void
- ● add_game(game: Game): void

**PaymentMethod** (A)
- ● calculate_total(base_price: float): float

**Game**
- ☐ code: String
- ☐ title: String
- ☐ category: String
- ● add_game(code: String, title: String, category: String): void
- ● show_games(): void

**FullPayment**
- ● calculate_total(base_price: float): float

**FinancingPayment**
- ☐ installments: int
- ☐ interest_rate: float
- ● calculate_total(base_price: float): float