**DPPL-oo-01**

DESCRIPTION OF SOFTWARE DESIGN

**Food Ordering Mobile Application for Small-scale Restaurant**

for:

Student and Lecturer at Telkom University

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| --- | --- | --- | --- | --- |
|  | **Informatics Bachelor – Faculty of Informatics** | Document Number | | Pages |
| *DPPL-oo-01* | |  |
| Revision |  | *Date:* |

# CHANGES LIST

|  |  |
| --- | --- |
| Revision | Description |
| A | Change from bahasa to English, purpose of writing document, scope of problem, definition and term, references, systematics discussion , Design implementation environment, Architectural description, Component description |
| B | Use case realization, class identification, sequence diagram, class diagram |
| C | Admin class, menu class, customers class, receipt class |
| D | Class diagram, algorithm/ query, interface, design of class, frown matrix |
| E | Change sequence diagram, change class diagram, change component diagram |
| F | edit detail class design, edit component description, |
| G |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| INDEX  DATE | - | A | B | C | D | E | F | G |
| Written by |  |  |  |  |  |  |  |  |
| Examined by |  |  |  |  |  |  |  |  |
| Approved by |  |  |  |  |  |  |  |  |

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# 1 Preliminary

## Purpose of Writing Document

This Software Design Description Document was written with the aim of becoming a document of the requirements of the software to be developed. With this document, it will describe what the application looks like.

## Scope of Problem

Based on our experience a lot of small – scale restaurant with limited staff distress if there is a lot of customers. In this project, we create an application to help the customer order the food from the restaurant that has limited staff such as warteg to help them minimize an order error occurred.

## Definition and term

* SRS, is Software Requirement Specification. Document analysis results that contain specifications of user needs.
* SDD, is the Software Design Description. The document that will describe in detail about the software to be built.
* Database: A collection of data stored systematically on a computer that can be processed or manipulated using software (application programs) to produce information.
* Use case Diagram: Description of the process that involves an actor.
* Class Diagram: Diagram that shows the system’s structure from class definition to build a system.

## Reference

The documents used to make the Software Design Description (SDD) are based on:

1. SRS our group on Food Ordering Mobile Application for small-scale Restaurant , Department of Informatics S1, Telkom University
2. Template DPPL Object-Oriented Analysis S1 Informatics Engineering Study Program Telkom University, Faculty of Informatics
3. SDD document from last years

## Systematics discussion

1. Chapter 1 explain about the purpose of writing the SDD document and the scope of the problem, continue to also explain terms that are rarely known to ordinary people and also the reference from which we use to make this SDD document.
2. Chapter 2 explain the design scope of the software implementation environment, architectural description, and component description of the architectural diagram.
3. Chapter 3 explain about each use case that exists and each class as well.
4. Chapter 4 explain about each use case using any class.

# Description of Global Design

The global design description includes an explanation of the design scope of the software implementation environment, an architectural description, and a description of the components of the architectural diagram used for software development.

## Design implementation environment

|  |  |
| --- | --- |
| System Description | Spesification |
| Operating System | Androids |
| DBMS | MySQL |
| Development Tools | Androids Studio, Flutter, MS Visual code studio |
| Language | Dart |

Table 2. 1 Design Implementation

## Architectural description

Is an architectural description or component that will be applied to the software "Food Ordering Mobile Application for Small-scale Restaurant" to facilitate the development and manufacture of the formation of the software, and to implement this software.

**Component Diagram**

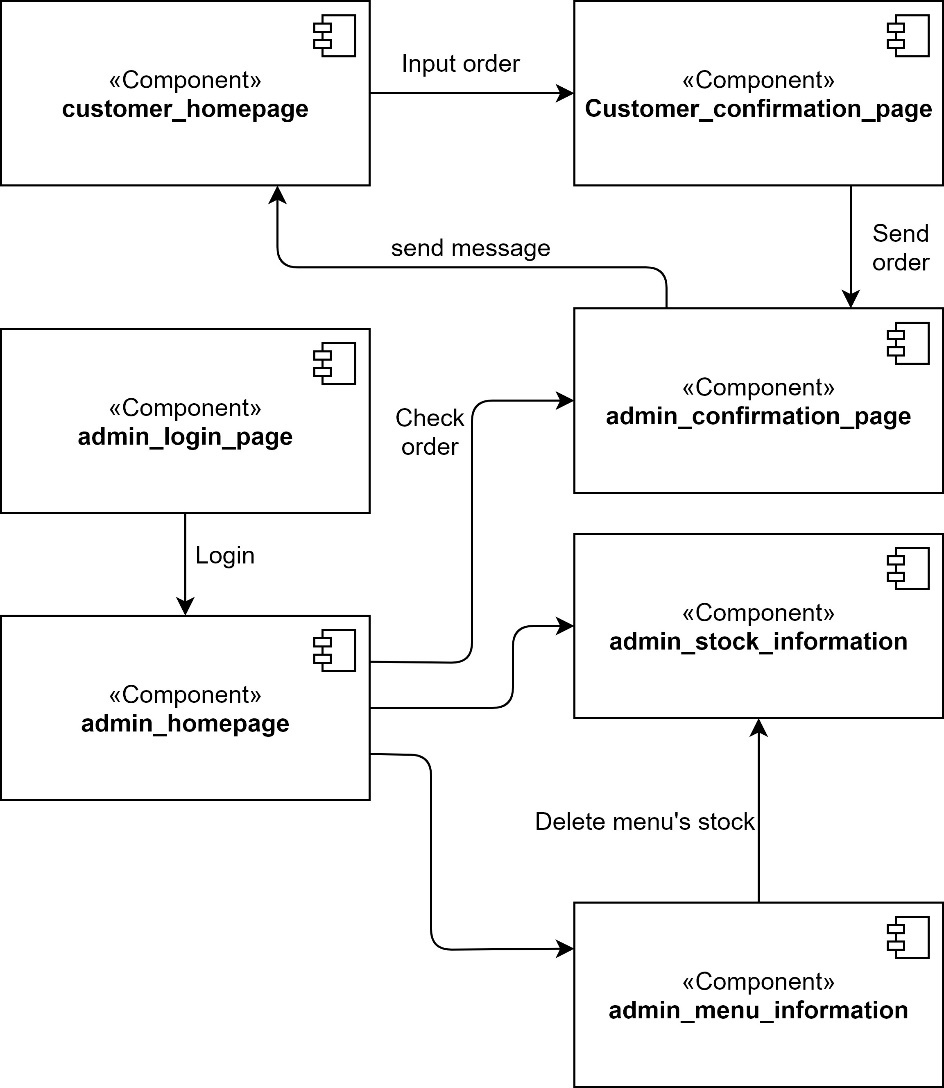


Figure 2. 1 Component Diagram

## Component description

The module list can be in the following table form:

|  |  |  |
| --- | --- | --- |
| **No** | **Component name** | **Explanation** |
| 1. | Customer\_homepage | To display the list of menu |
| 2. | Customer\_confirmation\_page | To display the notif from admin |
| 3. | Admin\_confirmation\_page | To display the notif from cust |
| 4. | Admin\_login\_page | To display the login page |
| 5. | Admin\_homepage | To display the list of notification from cust |
| 6. | Admin\_stock\_information | To display and edit the list of stock food |
| 7. | Admin\_menu\_information | To display and edit the list of the menu |

Table 2. 2 Component Description

# Detailed design

## Use case realization

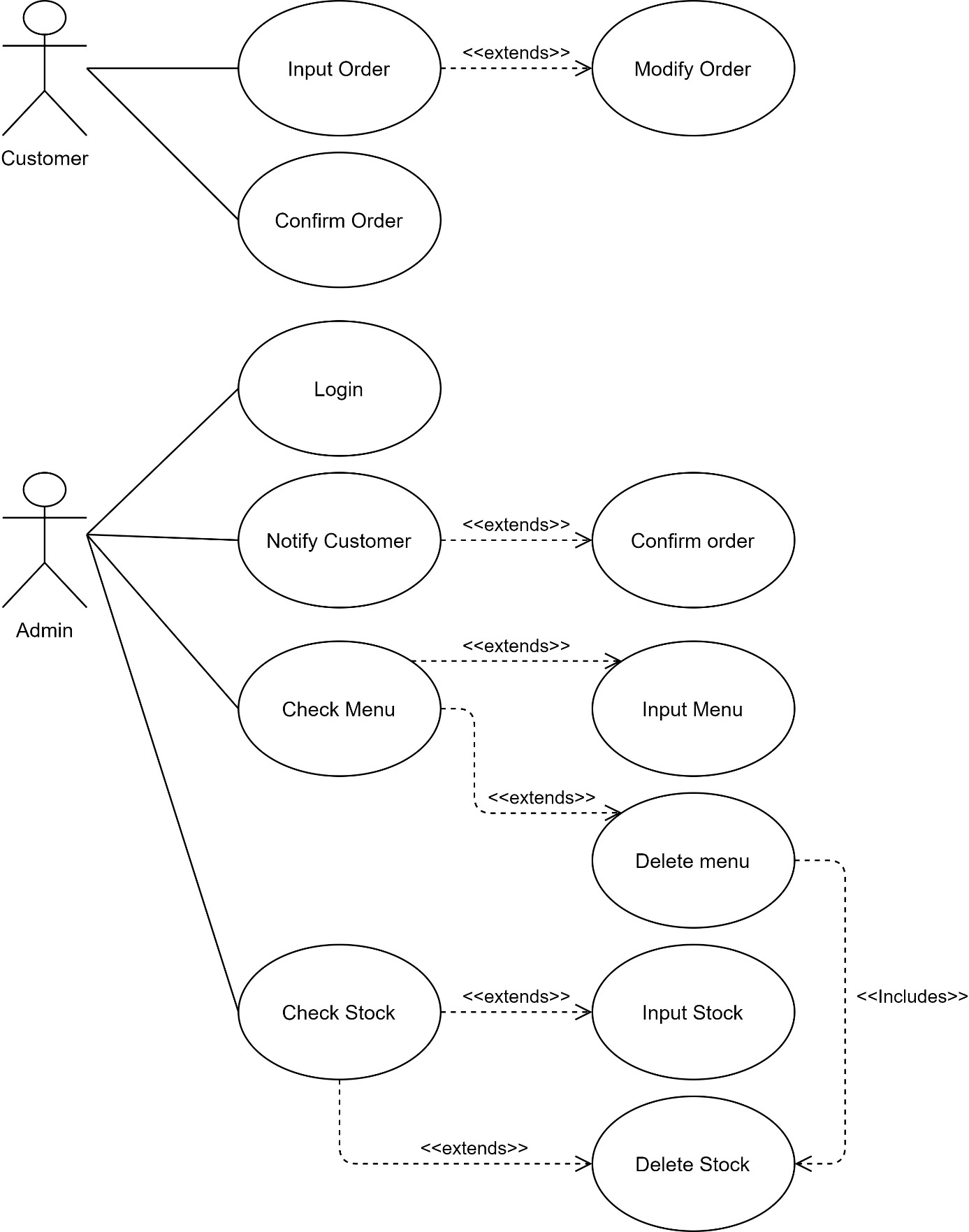


Figure 3. 1 Use Case Diagram

### Input Order Use Case

Input Order Use Case is a use case that belong to Customer or User to input their chosen order.

#### Class Identification

|  |  |  |
| --- | --- | --- |
| No. | Class Name | Class Type |
| 1 | CustomerHomepage | Model |
| 2 | AppProcess | Controller |
| 3 | Database | Database |

Tabel 3. 1 Input order

#### Sequence Diagram

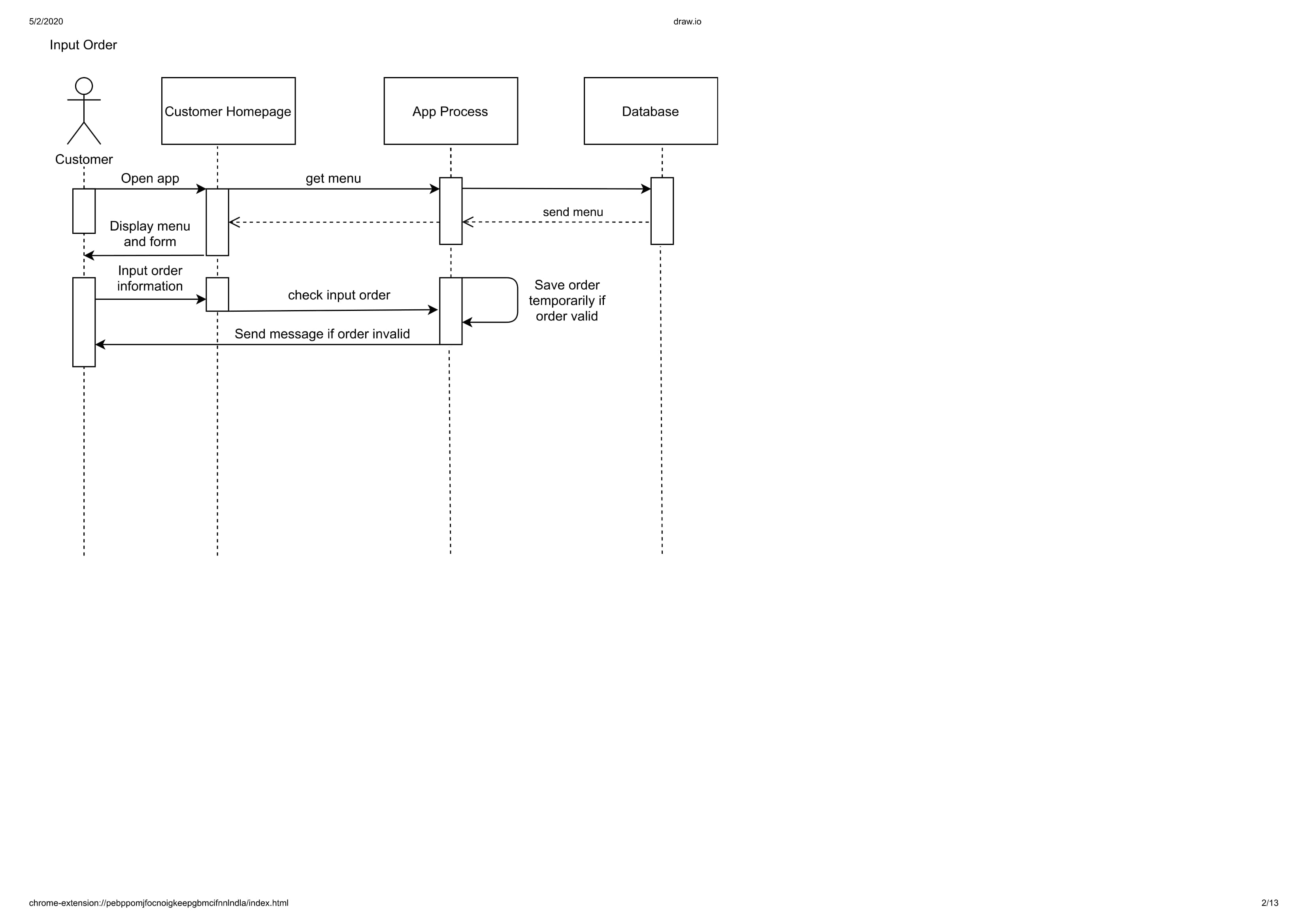


Figure 3. 2 Sequence Input Order

#### Class diagram

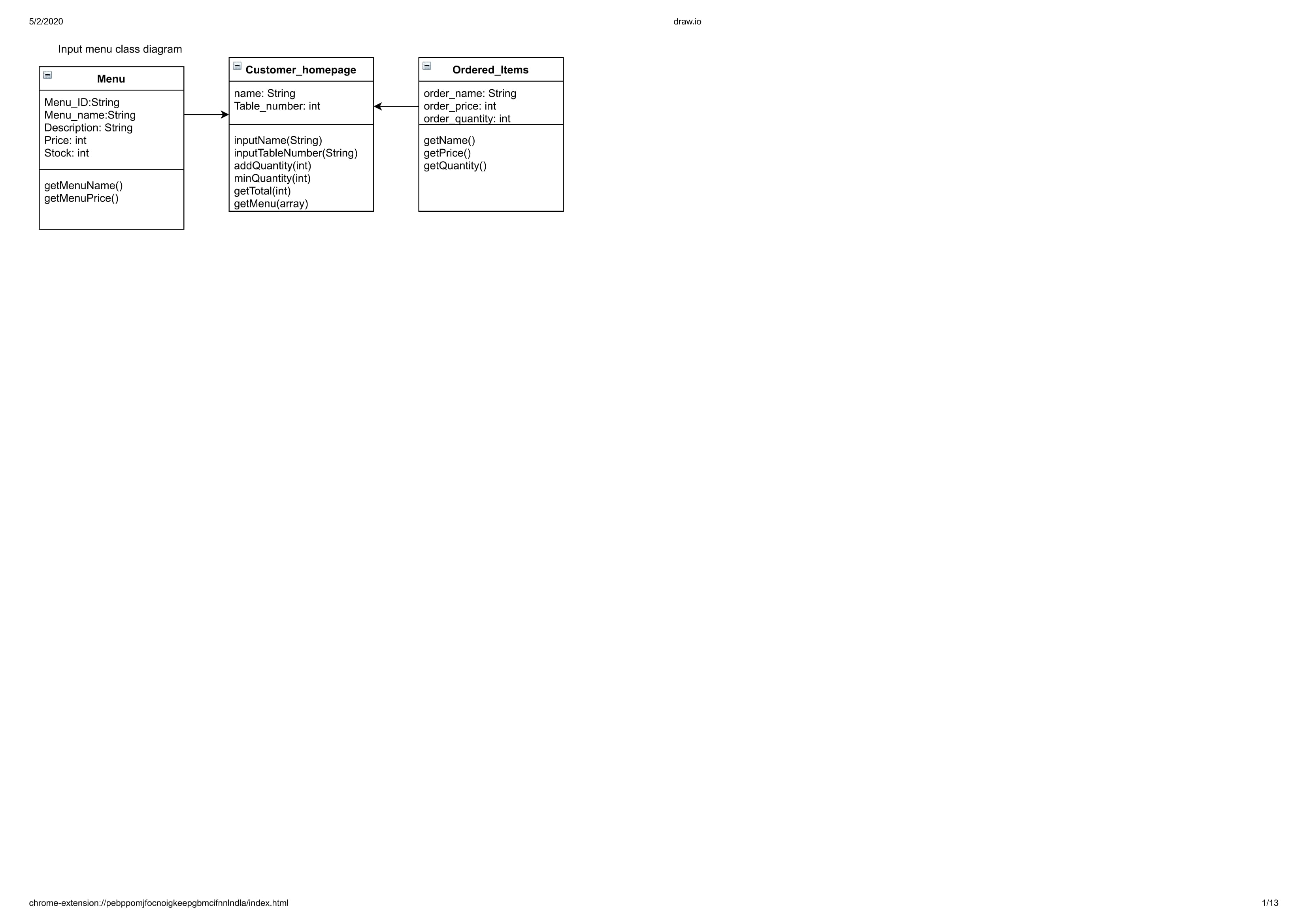


Figure 3. 3 Class Diagram Input Order

### 3.1.2 Modify Order Use Case

Modify Order Use Case is a use case that belong to Customer or User that has function to change their chosen order before.

#### 3.1.2.1 Class Identification

|  |  |  |
| --- | --- | --- |
| No. | Class Name | Class Type |
| 1 | CustomerConfirmPage | Model |
| 2 | AppProcess | Controller |
| 3 | Database | Database |

Tabel 3. 2 Modify Order

#### 3.1.2.2 Sequence Diagram

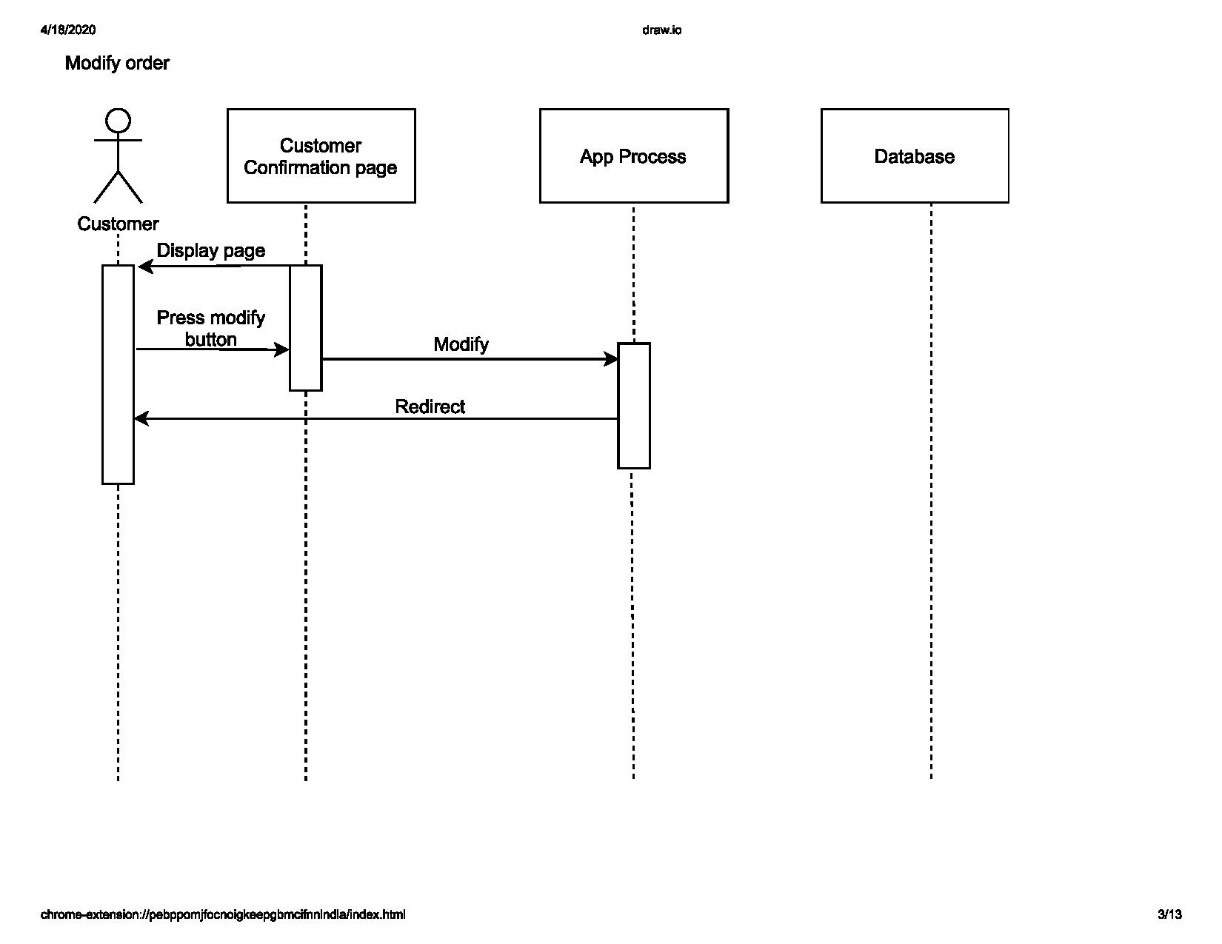


Figure 3. 4 Sequence Modify Order

#### 3.1.2.3 Class Diagram

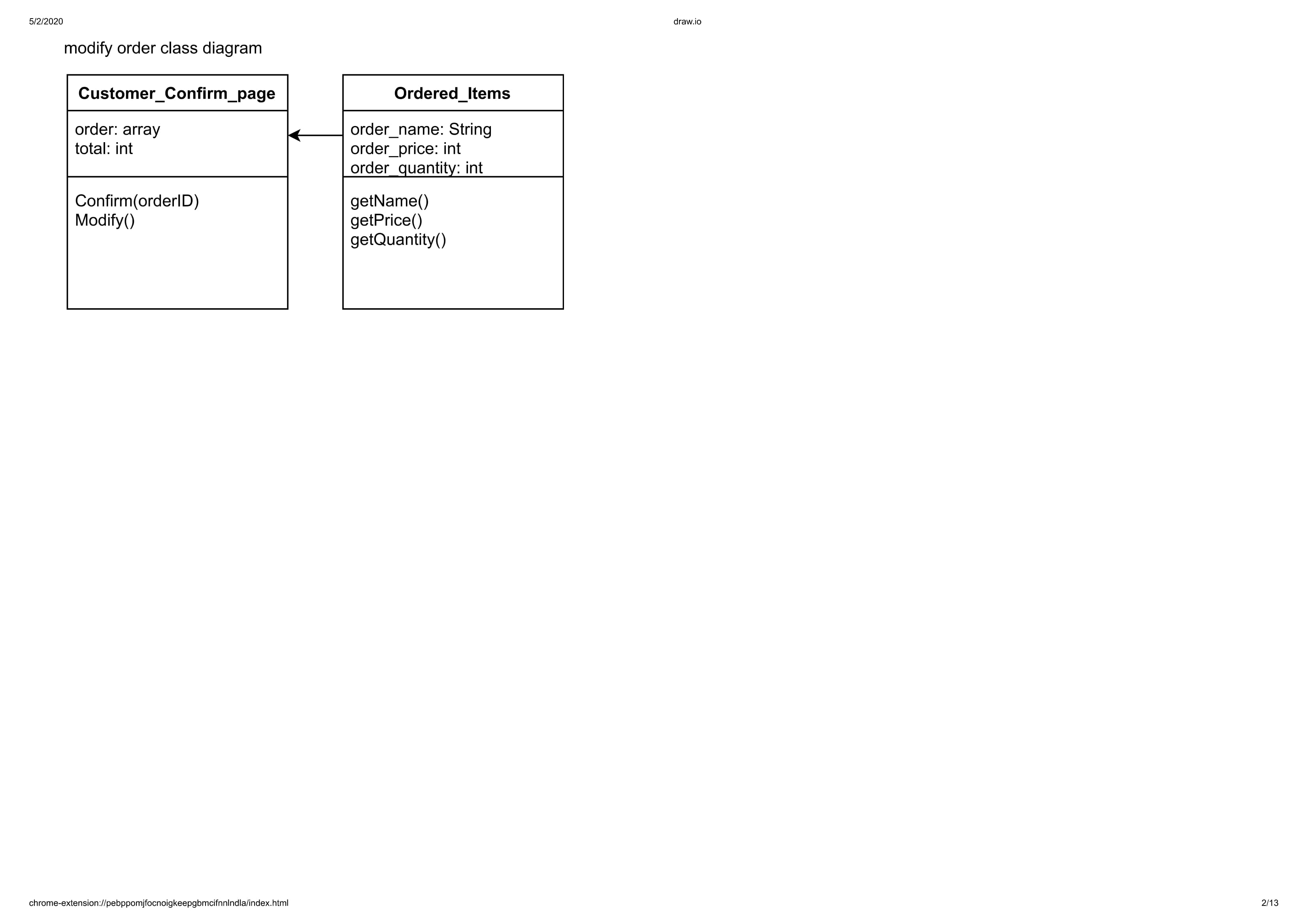


Figure 3. 5 Class Diagram Modify Order

### 3.1.3 Confirm Order Use Case

Confirm Order Use Case is a use case that belong to Customer or User that has function to confirm their chosen order.

#### 3.1.3.1 Class Identification

|  |  |  |
| --- | --- | --- |
| No. | Class Name | Class Type |
| 1 | CustomerConfirmPage | Model |
| 2 | AppProcess | Controller |
| 3 | Database | Database |

Tabel 3. 3 Confirm Order

#### 3.1.3.2 Sequence Diagram

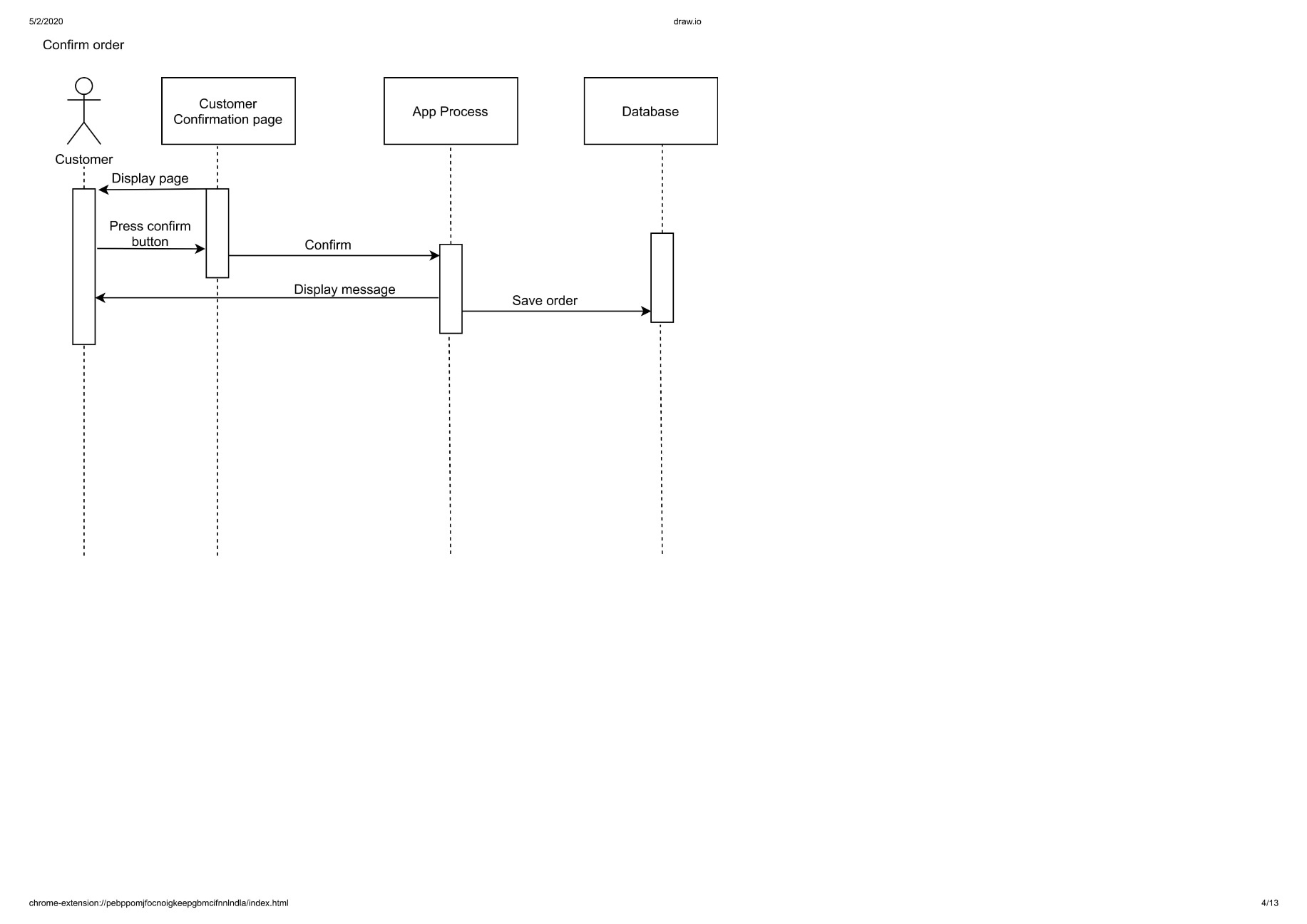


Figure 3. 6 Sequence Confirm Order

#### 3.1.3.3 Class Diagram

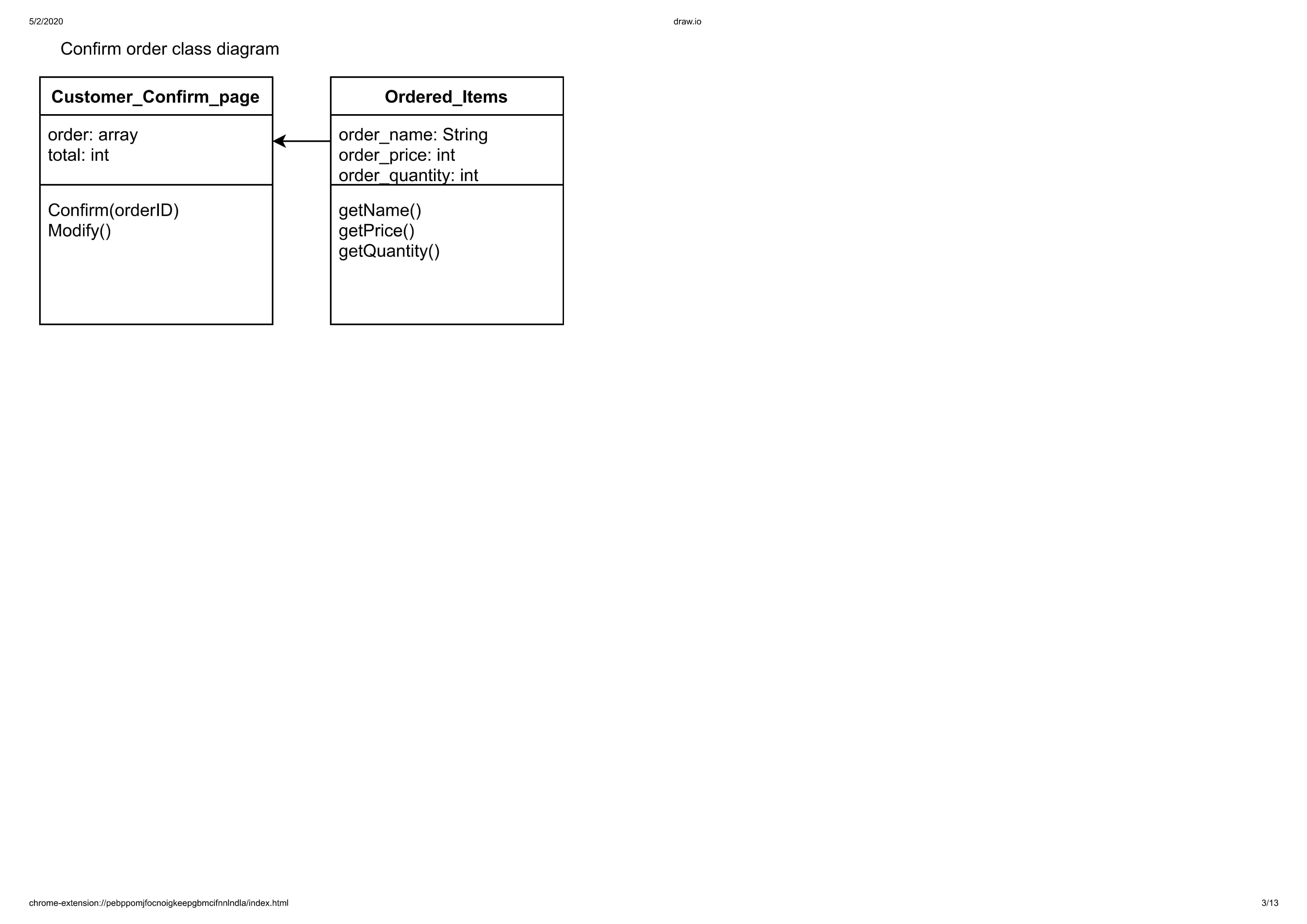


Figure 3. 7 Class Diagram Confirm Order

### 3.1.4 Print Receipt Use Case

Print Receipt Use Case is a use case that belong to Admin that has function to print the receipt of the Customer’s order.

#### 3.1.4.1 Class Identification

|  |  |  |
| --- | --- | --- |
| No. | Class Name | Class Type |
| 1 | AdminConfirmPage | Model |
| 2 | AppProcess | Controller |
| 3 | Database | Database |

Tabel 3. 4 Print Receipt

#### 3.1.4.2 Sequence Diagram

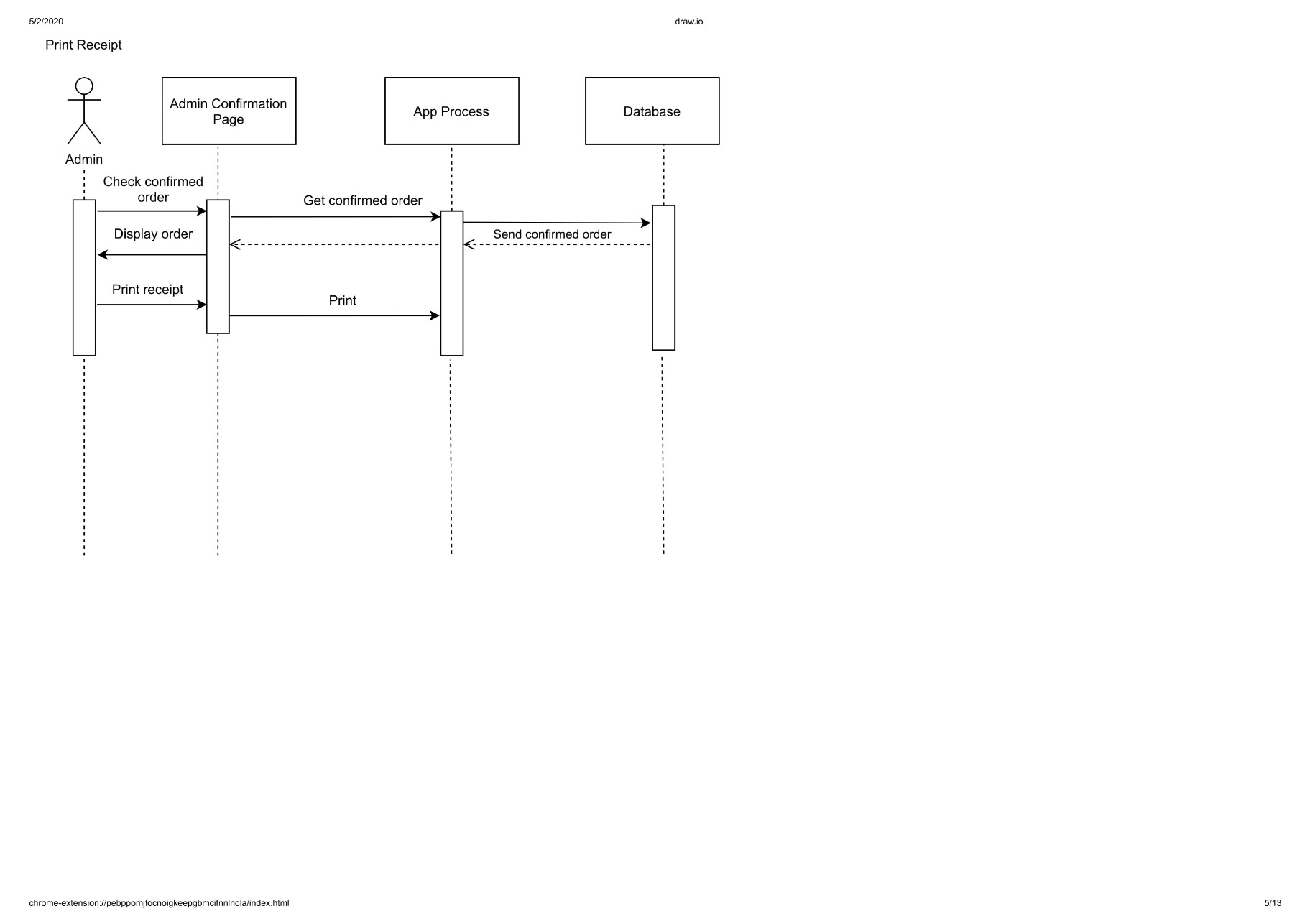


Figure 3. 8 Sequence Print Receipt

#### 3.1.4.3 Class Diagram

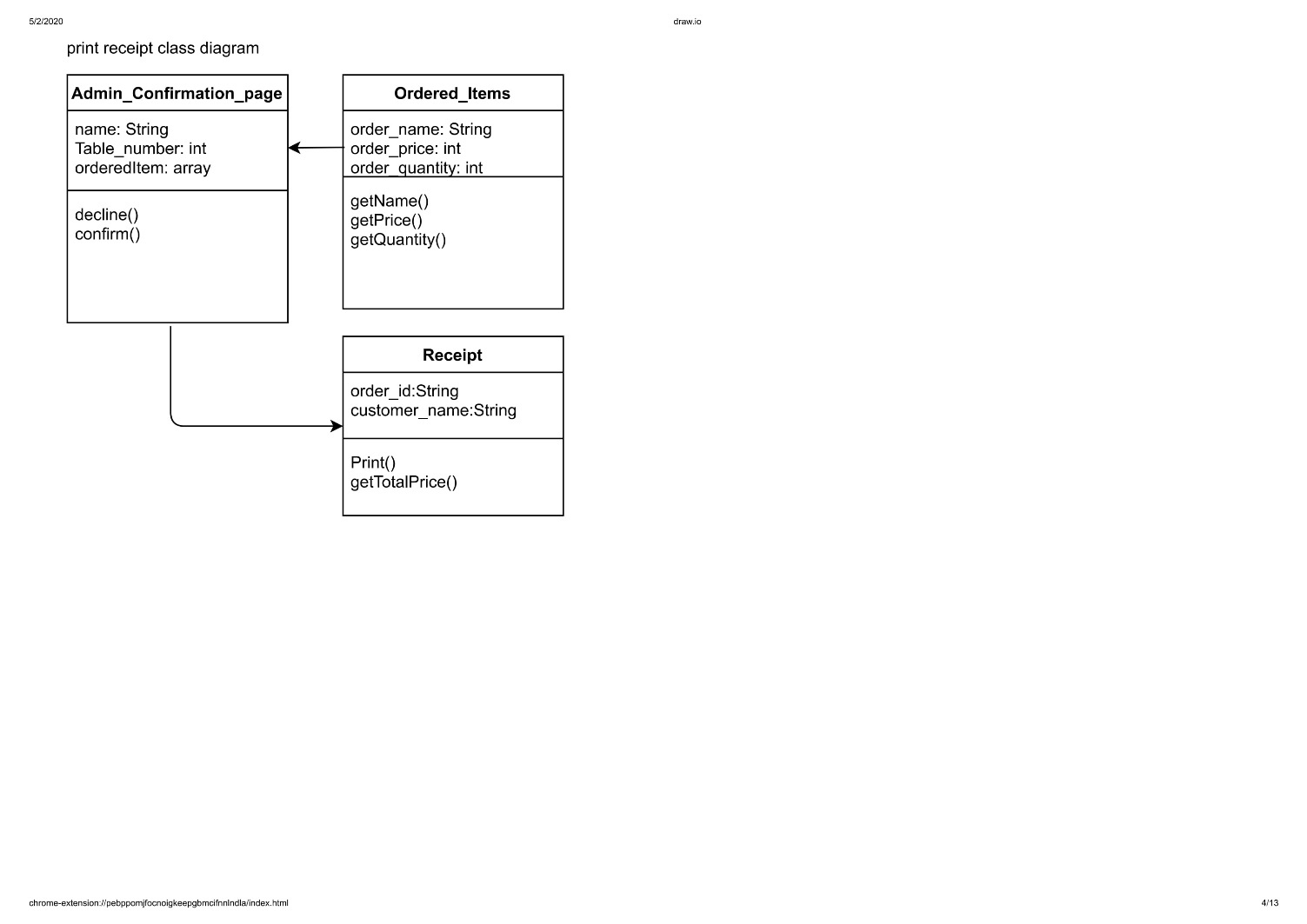


Figure 3. 9 Class Diagram Print Receipt

### 3.1.5 Notify Customer Use Case

Notify Customer Use Case is a use case that belong to Admin that has function to notify the customer if the Stock isn’t available or another condition.

#### 3.1.5.1 Class Identification

|  |  |  |
| --- | --- | --- |
| No. | Class Name | Class Type |
| 1 | AdminConfirmPage | Model |
| 2 | AppProcess | Controller |
| 3 | Database | Database |

Tabel 3. 5 Notify Customers

#### 3.1.5.2 Sequence Diagram

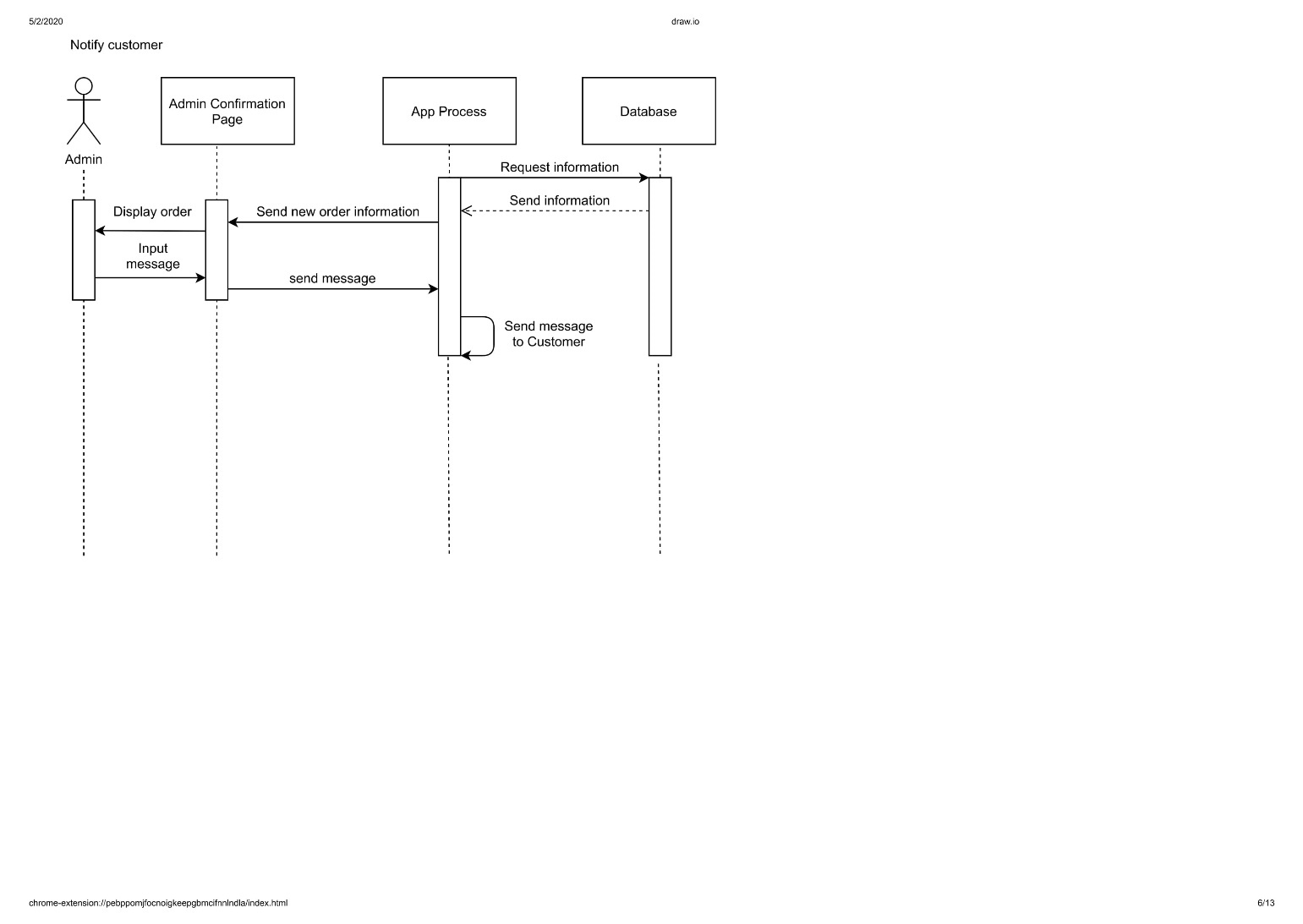


Figure 3. 10 Sequence Notify Customers

#### 3.1.5.3 Class Diagram

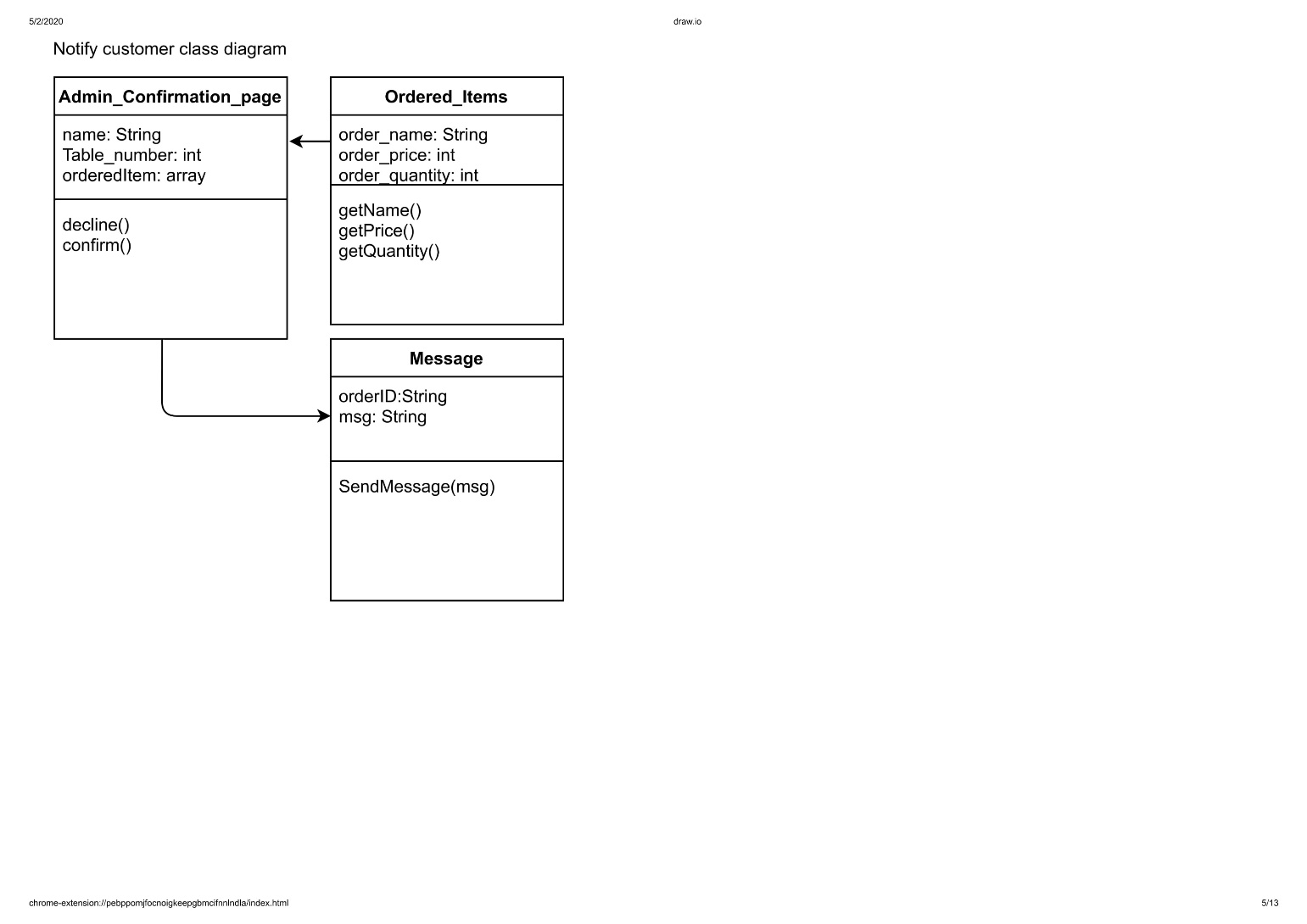


Figure 3. 11 Class Diagram Notify Customer

### 3.1.6 Confirm Order Use Case

Confirm Order Use Case is a use case that belong to Admin that has function to Confirm the order from the Customer.

#### 3.1.6.1 Class Modification

|  |  |  |
| --- | --- | --- |
| No. | Class Name | Class Type |
| 1 | AdminConfirmPage | Model |
| 2 | AppProcess | Controller |
| 3 | Database | Database |

Tabel 3. 6 Confirm Order

#### 3.1.6.2 Sequence Diagram

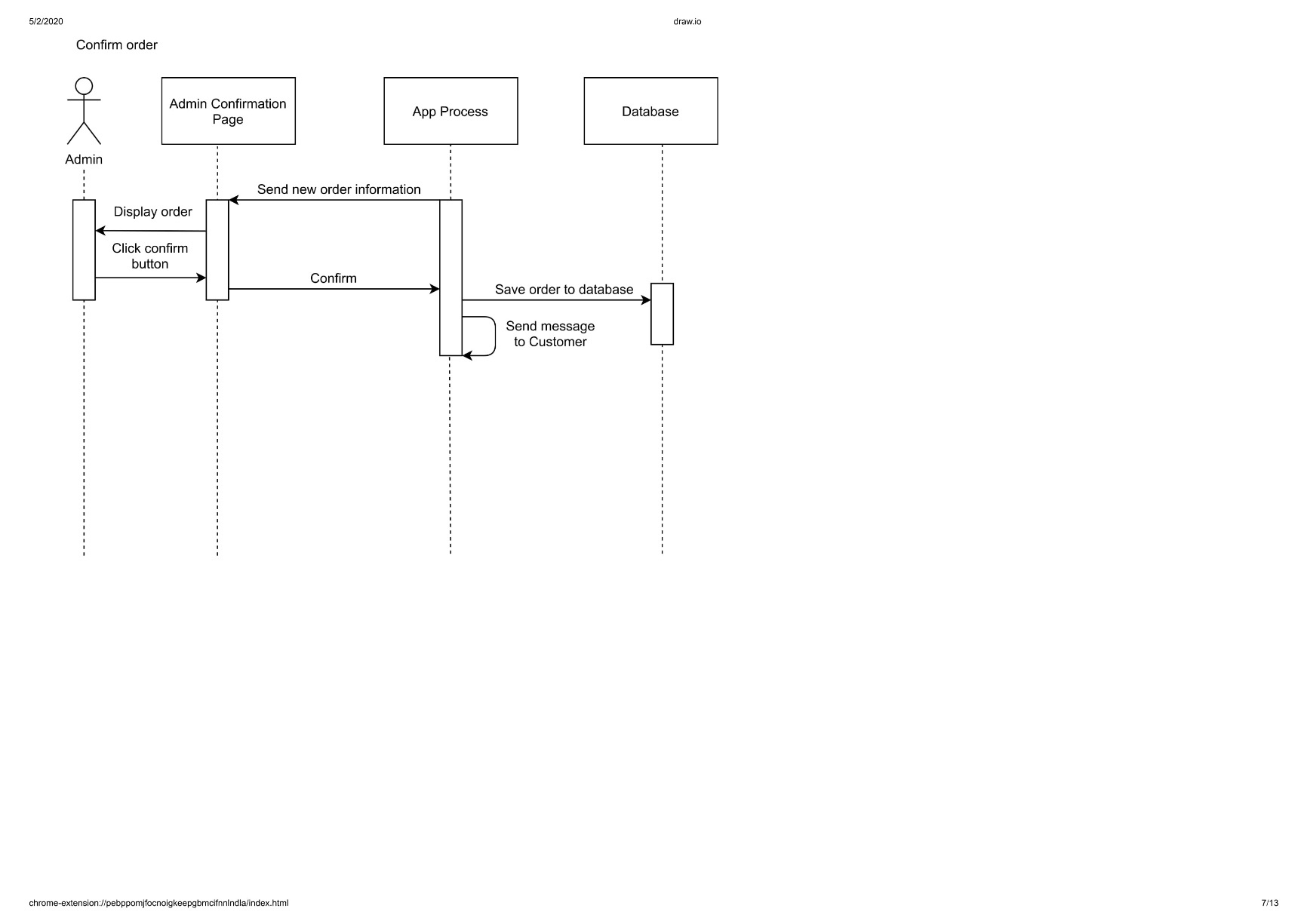


Figure 3. 12 Sequence Confirm Order

#### 3.1.6.3 Class Diagram

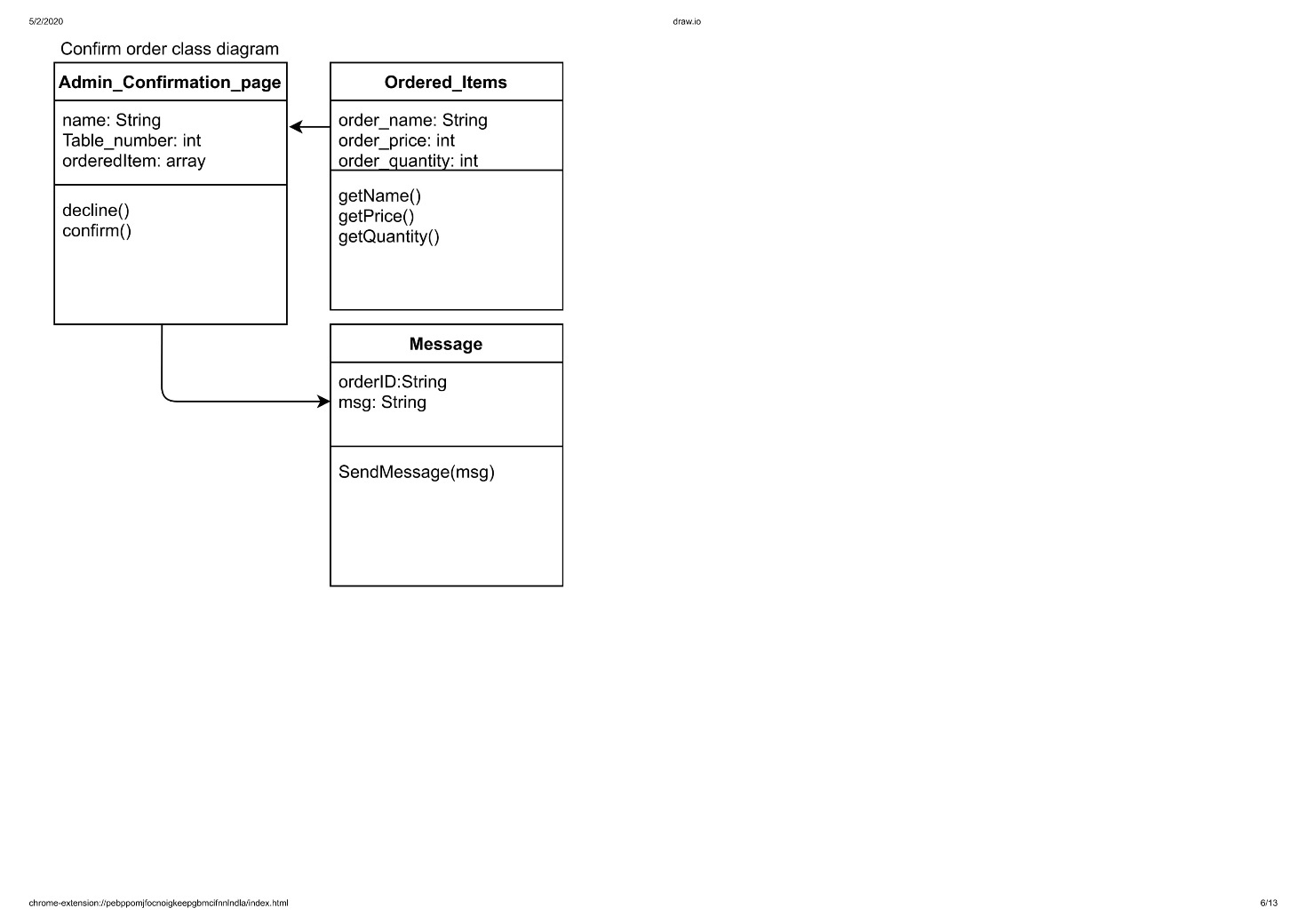


Figure 3. 13 Class Diagram Confirm Order

### 3.1.7 Check Menu Use Case

Check Menu Use Case is a use case that belong to Admin that has function to check the menu to get the information of the menu whether it’s available or out of stock

#### 3.1.7.1 Class Identification

|  |  |  |
| --- | --- | --- |
| No. | Class Name | Class Type |
| 1 | AdminMenuPage | Model |
| 2 | AppProcess | Controller |
| 3 | Database | Database |

Tabel 3. 7 Check Menu

#### 3.1.7.2 Sequence Diagram

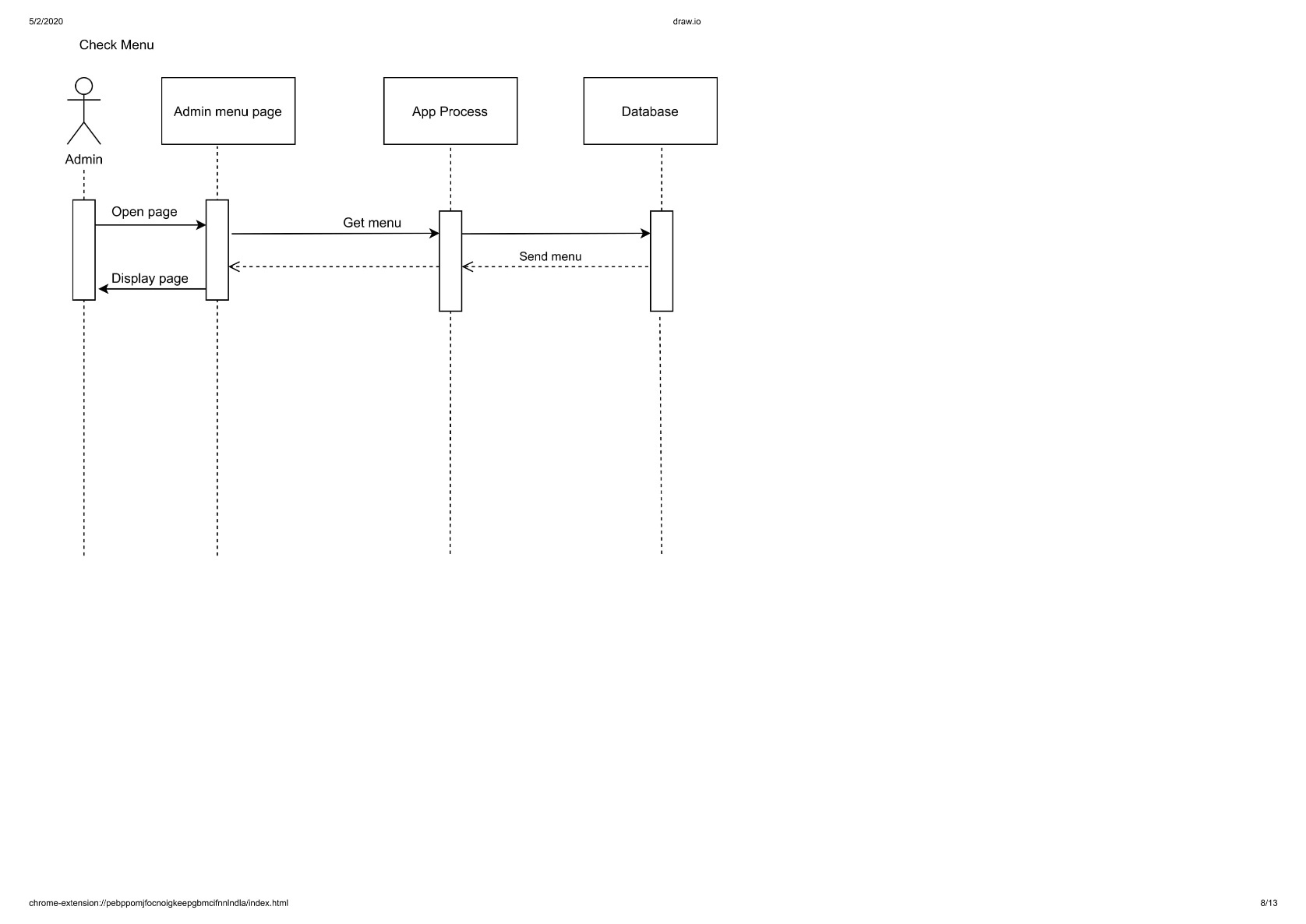


Figure 3. 14 Sequence Check Menu

#### 3.1.7.3 Class Diagram

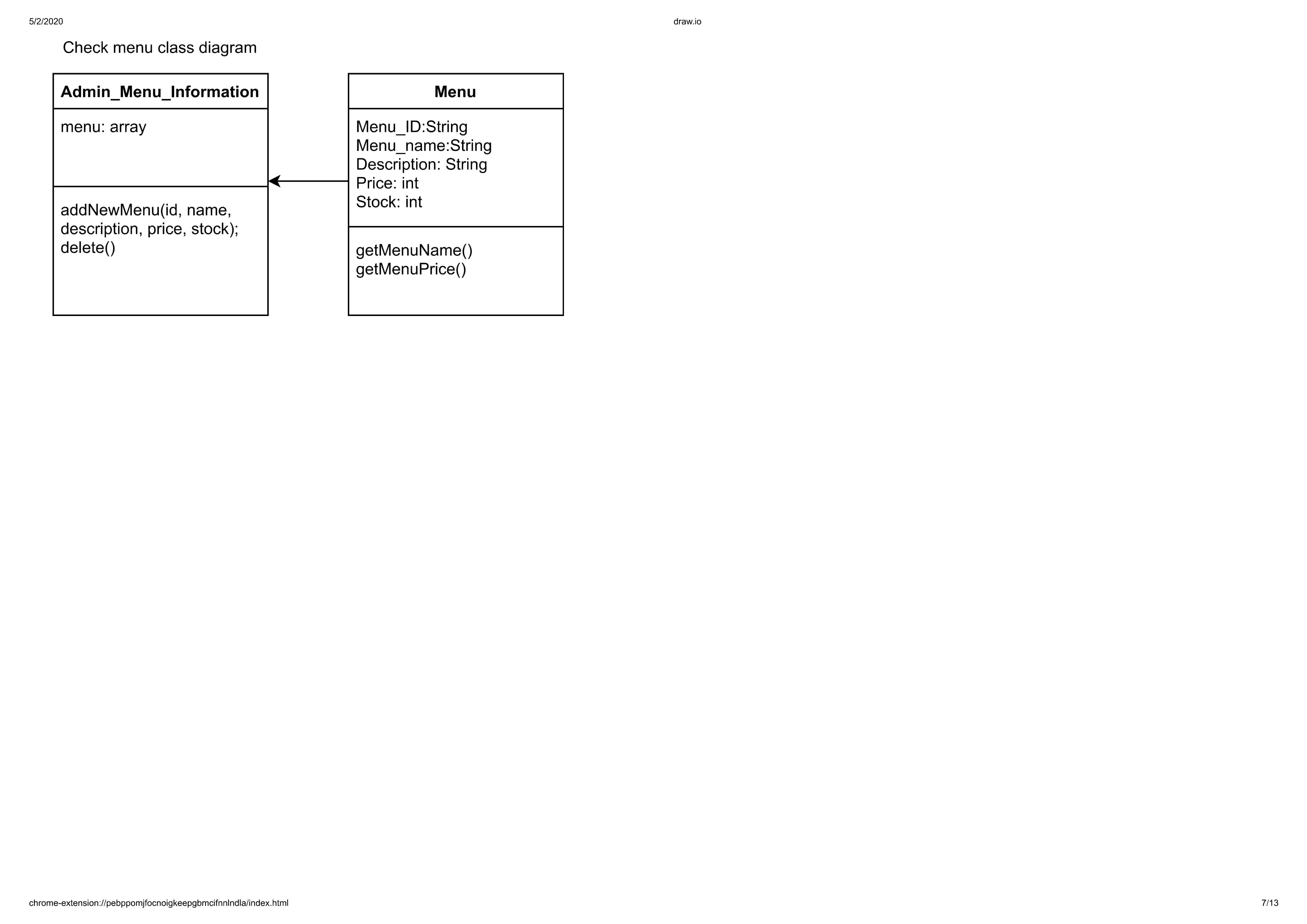


Figure 3. 15 Class Diagram Check Menu

### 3.1.8 Input Menu Use Case

Input Menu Use Case is a use case that belong to Admin that has function to input new menu in the menu list.

#### 3.1.8.1 Class Identification

|  |  |  |
| --- | --- | --- |
| No. | Class Name | Class Type |
| 1 | AdminMenuPage | Model |
| 2 | AppProcess | Controller |
| 3 | Database | Database |

Tabel 3. 8 Input Menu

#### 3.1.8.2 Sequence Diagram

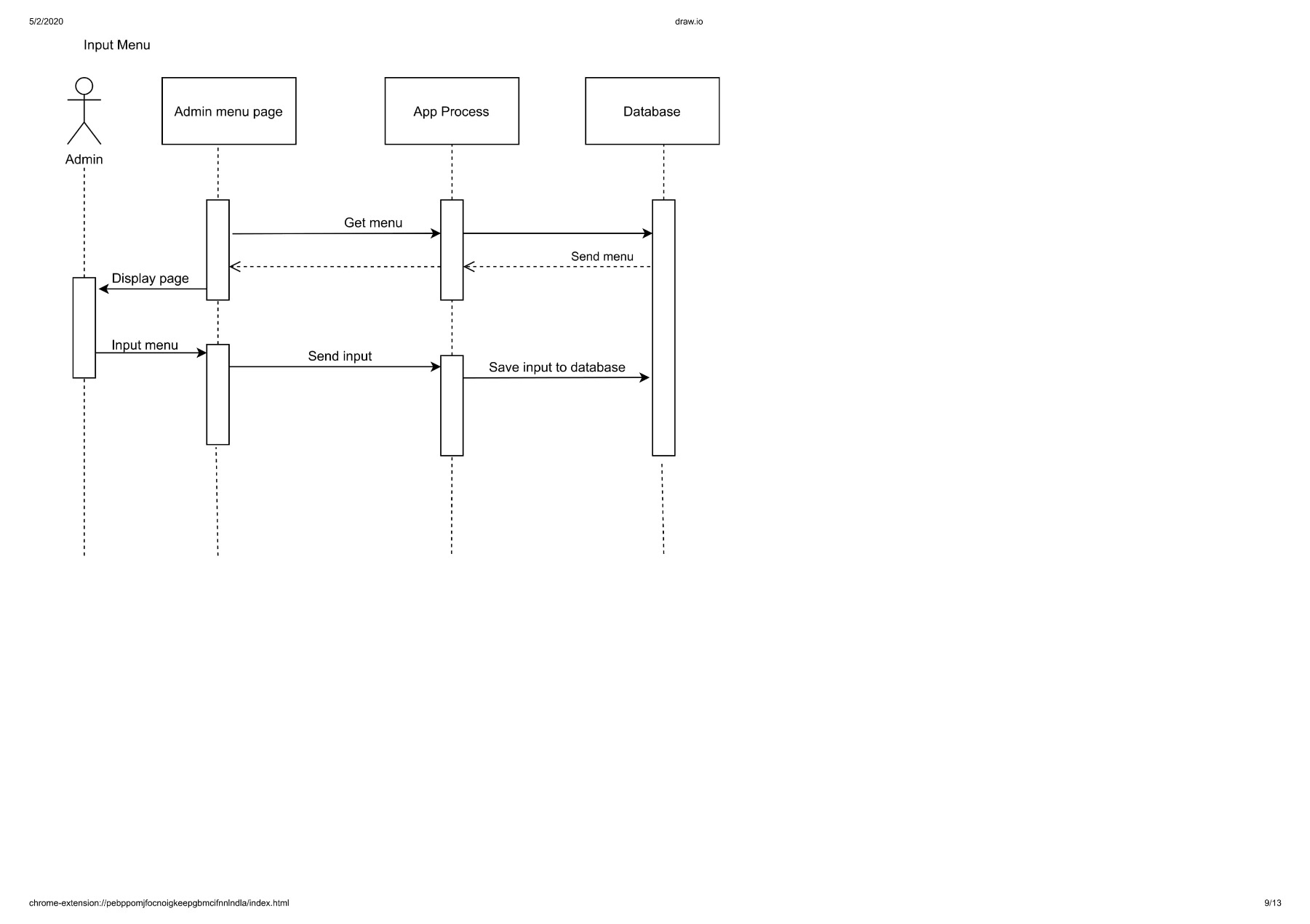


Figure 3. 16 Sequence Input Menu

#### 3.1.8.3 Class Diagram

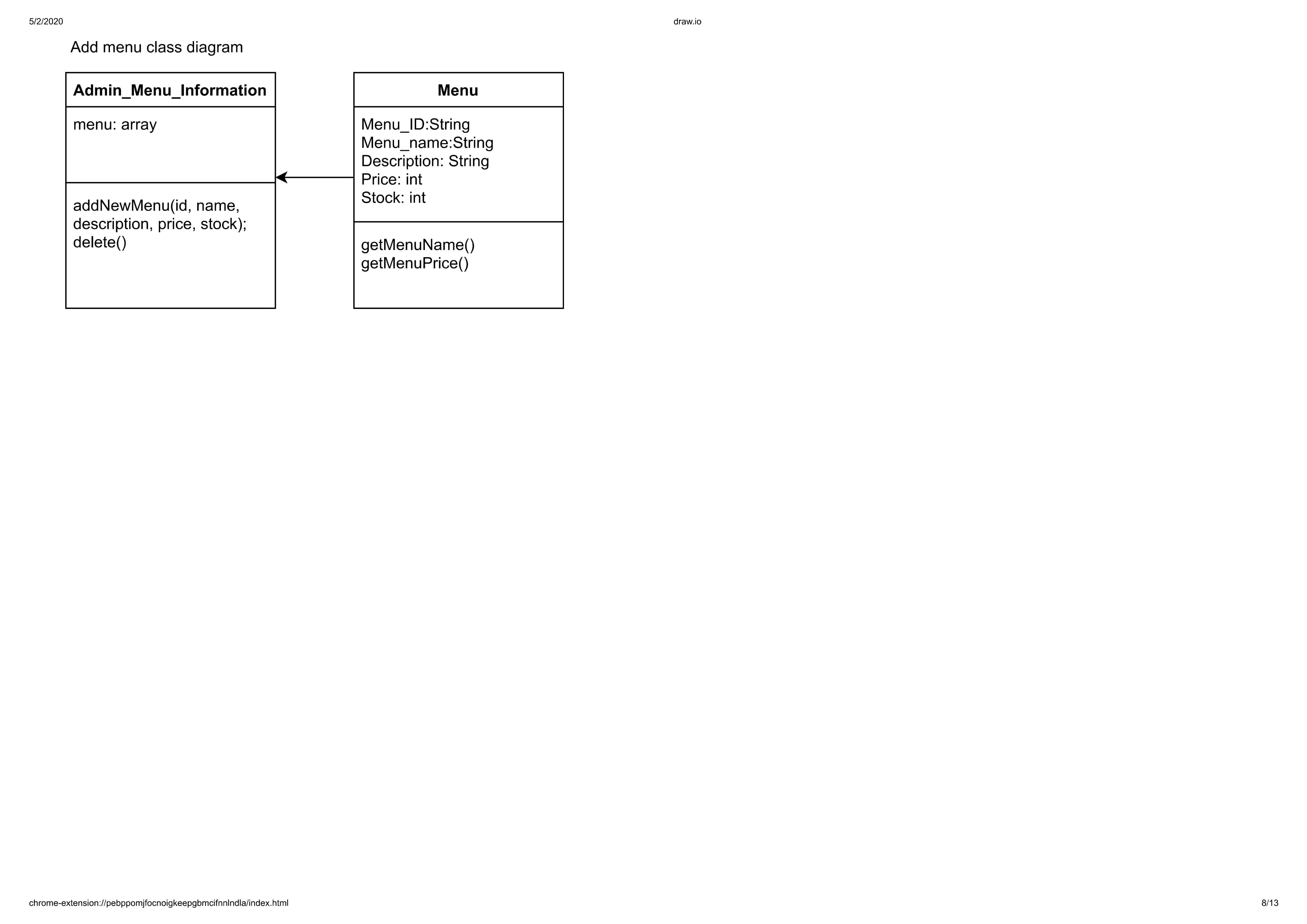


Figure 3. 17 Class Diagram Input Menu

### 3.1.9 Delete Menu Use Case

Delete Menu Use Case is a use case that belong to Admin that has function to delete the menu from the menu list.

#### 3.1.9.1 Class Identification

|  |  |  |
| --- | --- | --- |
| No. | Class Name | Class Type |
| 1 | AdminMenuPage | Model |
| 2 | AppProcess | Controller |
| 3 | Database | Database |

Tabel 3. 9 Delete Menu

#### 3.1.9.2 Sequence Diagram

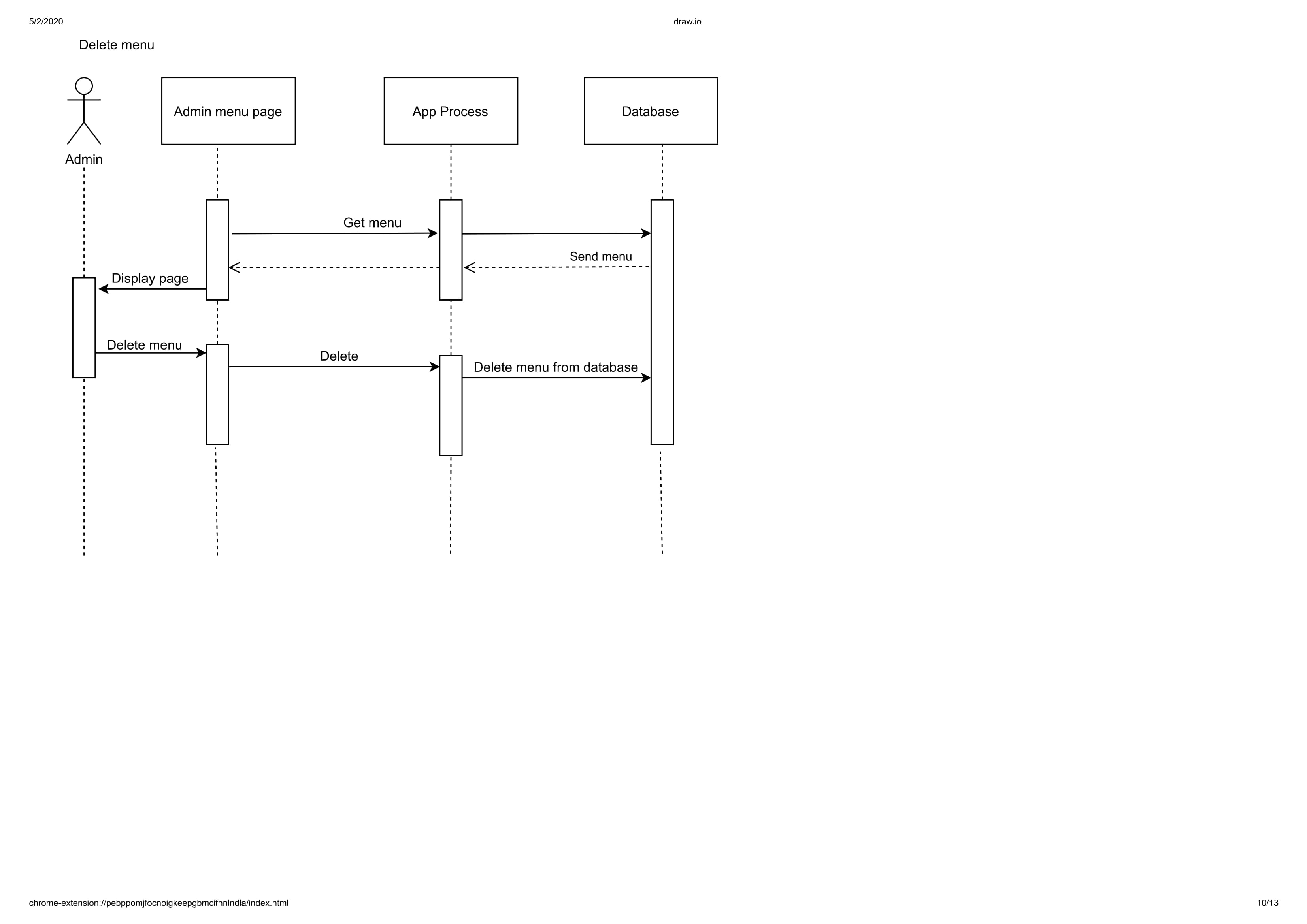


Figure 3. 18 Sequence Delete Menu

#### 3.1.9.3 Class Diagram

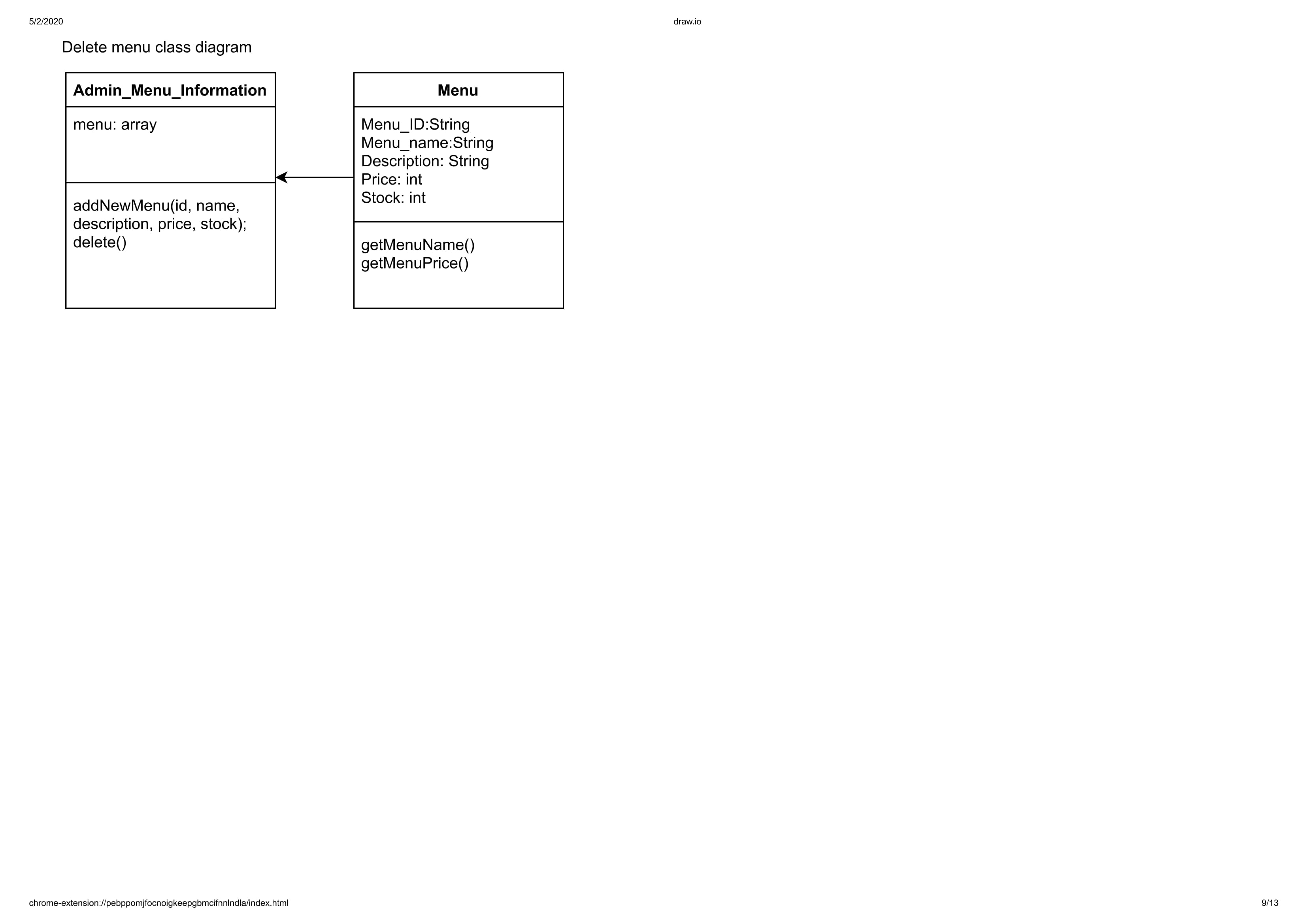


Figure 3. 19 Class Diagram Delete Menu

### 3.1.10 Check Stock Use Case

Check Stock Use Case is a use case that belong to Admin that has function to check the stock availability of the menu.

#### 3.1.10.1 Class Identification

|  |  |  |
| --- | --- | --- |
| No. | Class Name | Class Type |
| 1 | AdminStockPage | Model |
| 2 | AppProcess | Controller |
| 3 | Database | Database |

Tabel 3. 10 Check Stock

#### 3.1.10.2 Sequence Diagram

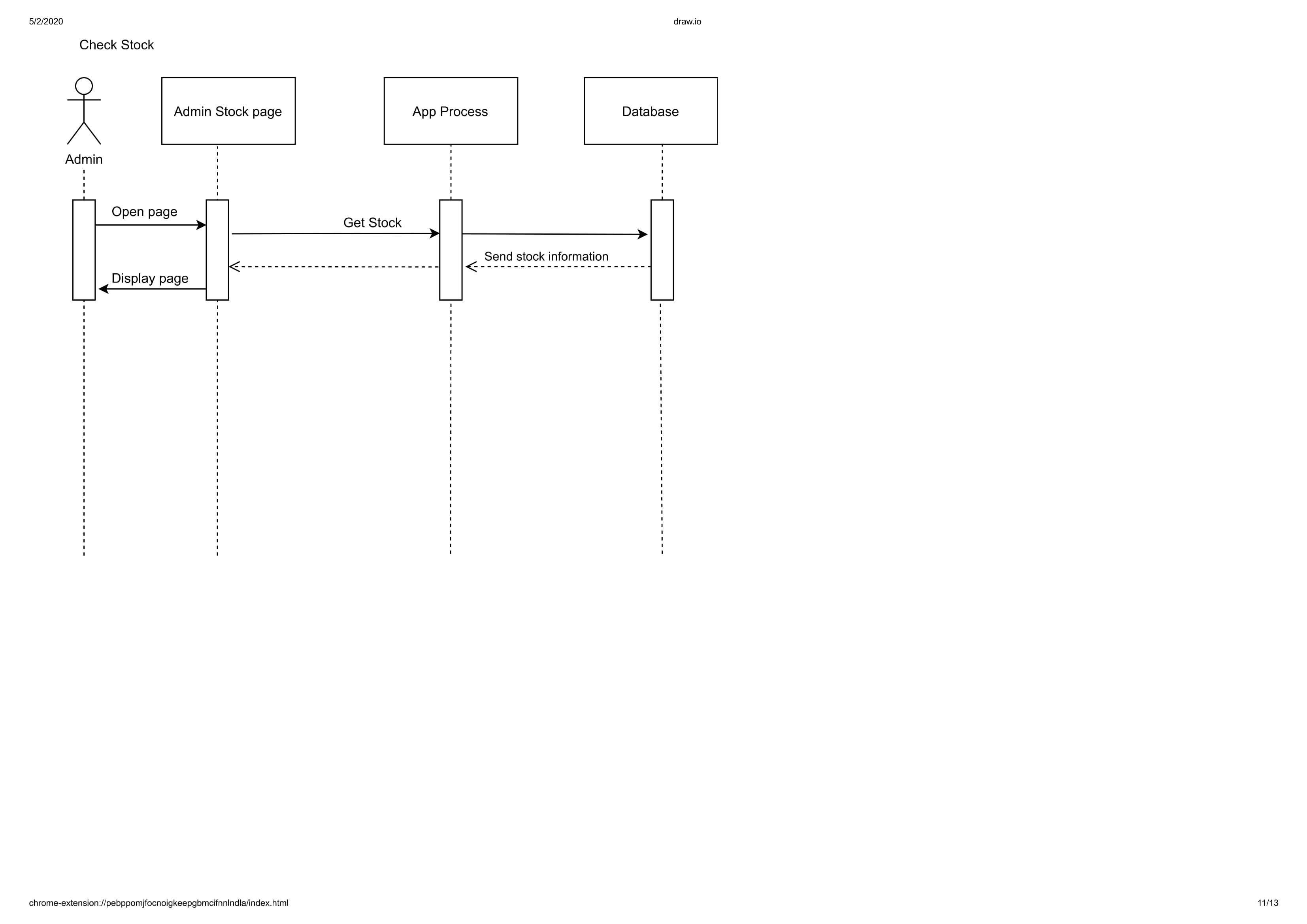


Figure 3. 20 Sequence Check Stock

#### 3.1.10.3 Class Diagram

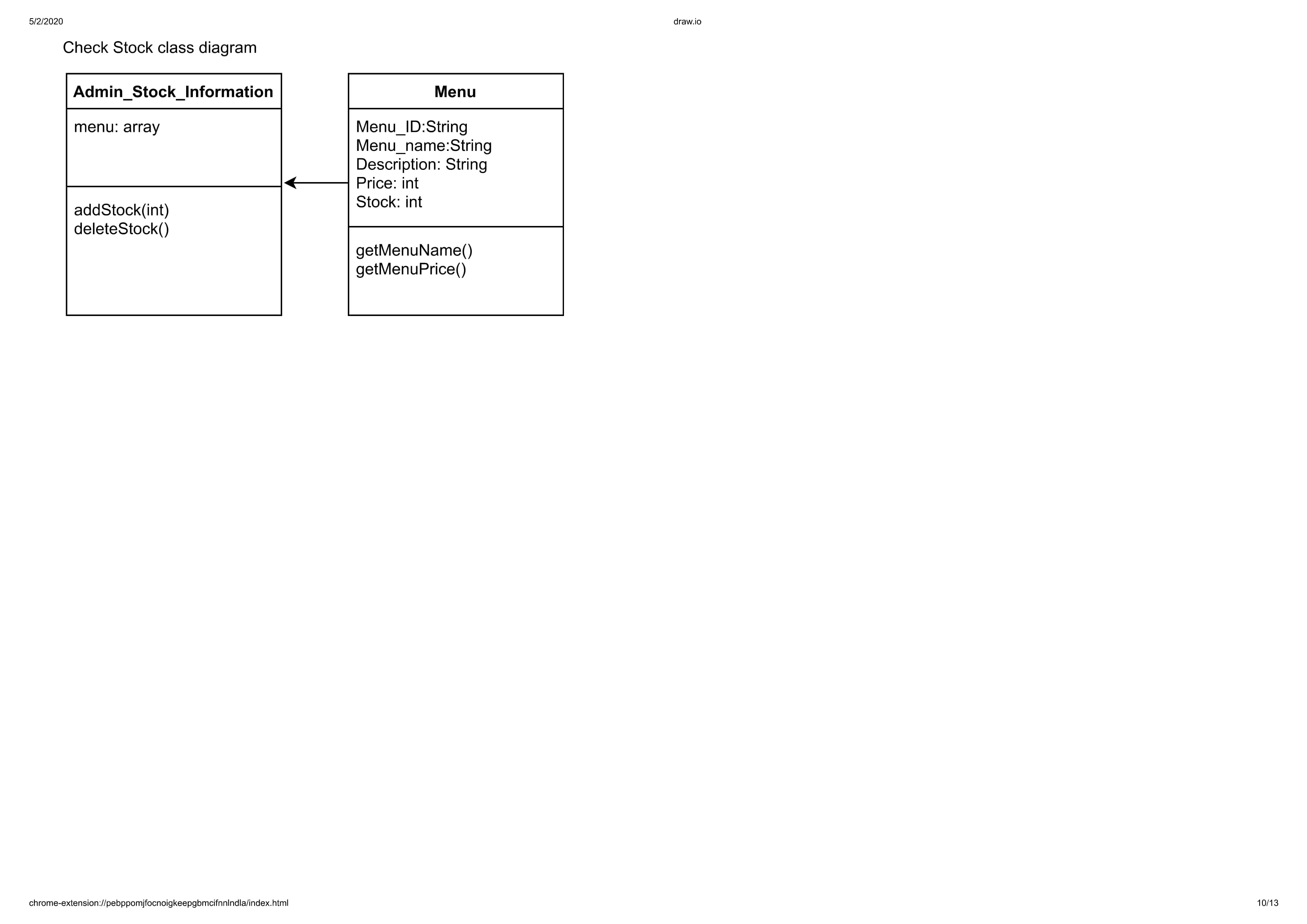


Figure 3. 21 Class Diagram Check Stock

### 3.1.11 Input Stock Use Case

Input Stock Use Case is a use case that belong to Admin that has function to input or add more stock of the menu.

#### 3.1.11.1 Class Identification

|  |  |  |
| --- | --- | --- |
| No. | Class Name | Class Type |
| 1 | AdminStockPage | Model |
| 2 | AppProcess | Controller |
| 3 | Database | Database |

Tabel 3. 11 Input Stock

#### 3.1.11.2 Sequence Diagram

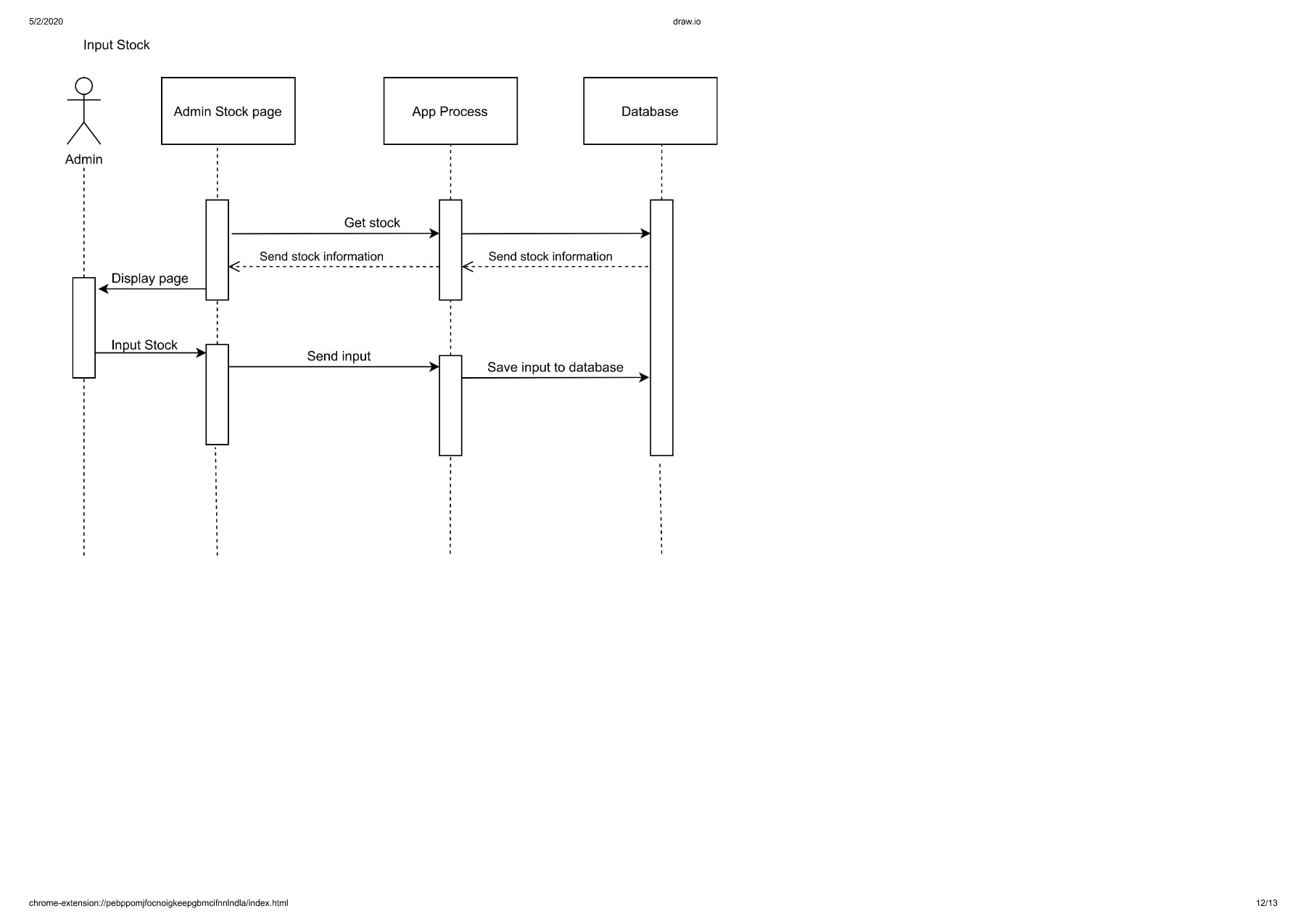


Figure 3. 22 Sequence Input Stock

#### 3.1.11.3 Class Diagram

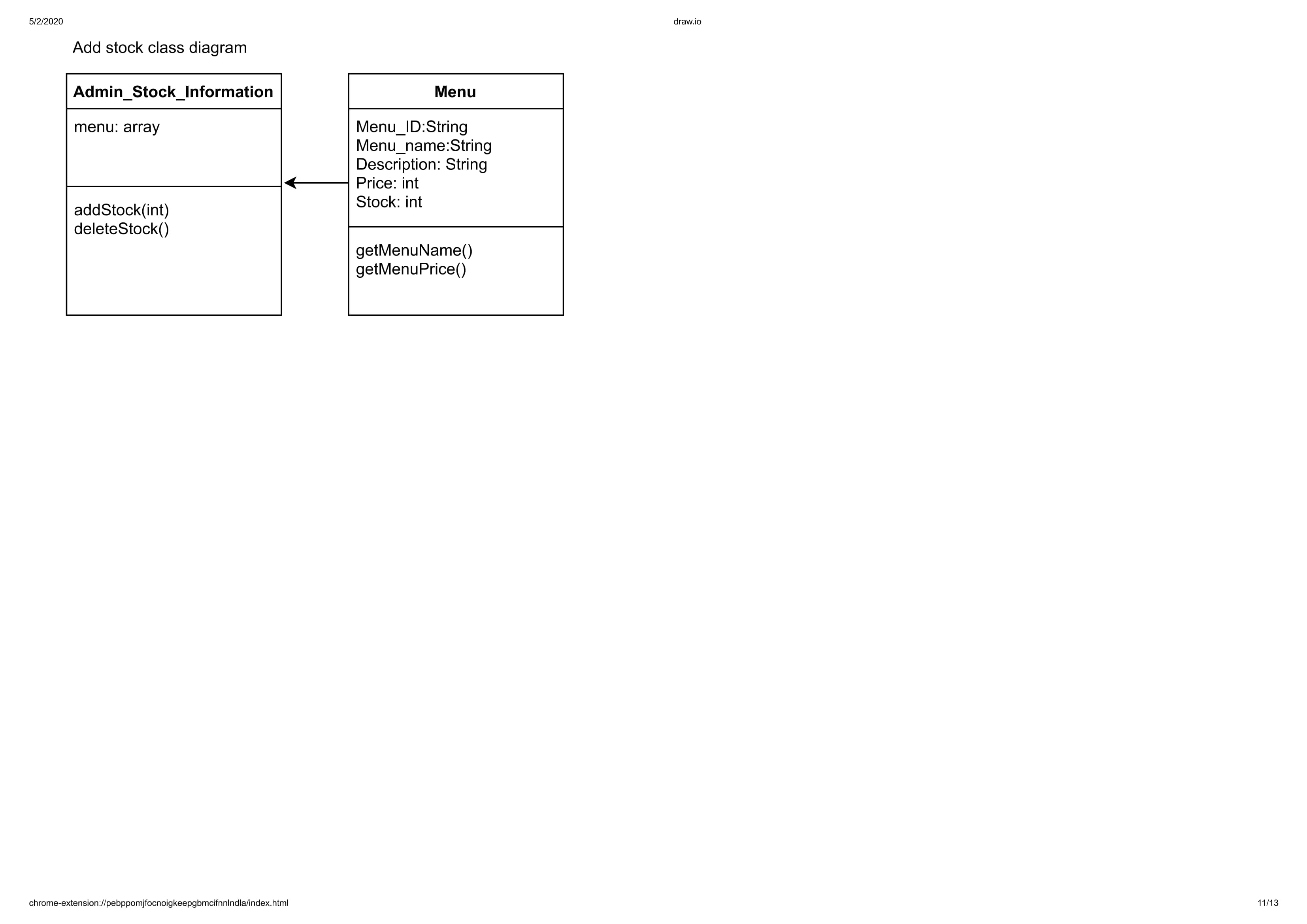


Figure 3. 23 Class Diagram Input Stock

### 3.1.12 Delete Stock Use Case

Delete Stock Use Case is a use case that belong to Admin that has function to delete or decrease the stock of the menu.

#### 3.1.12.1 Class Identification

|  |  |  |
| --- | --- | --- |
| No. | Class Name | Class Type |
| 1 | AdminStockPage | Model |
| 2 | AppProcess | Controller |
| 3 | Database | Database |

Tabel 3. 12 Delete Stock

#### 3.1.12.2 Sequence Diagram

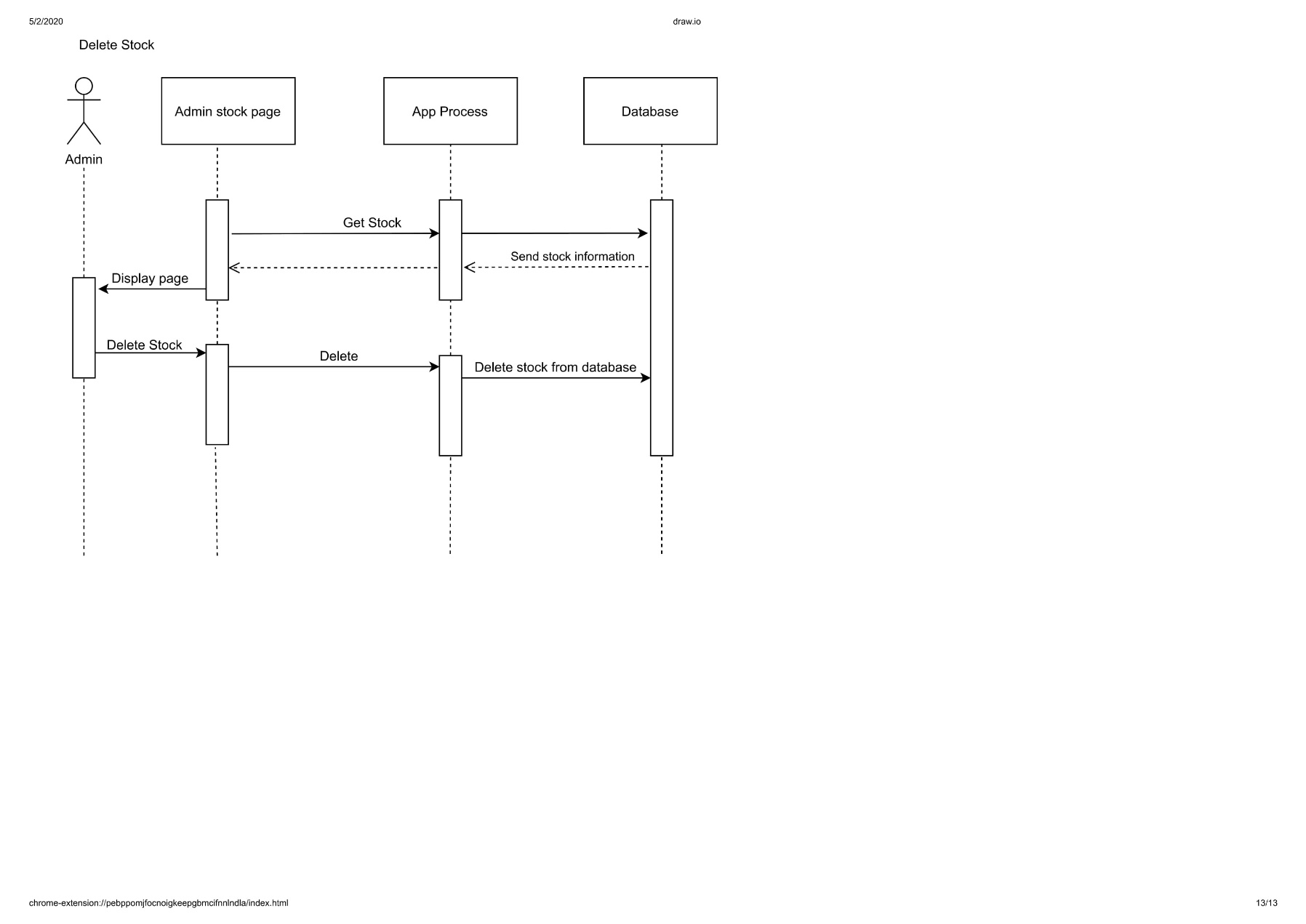


Figure 3. 24 Sequence Delete Stock

#### 3.1.12.3 Class Diagram

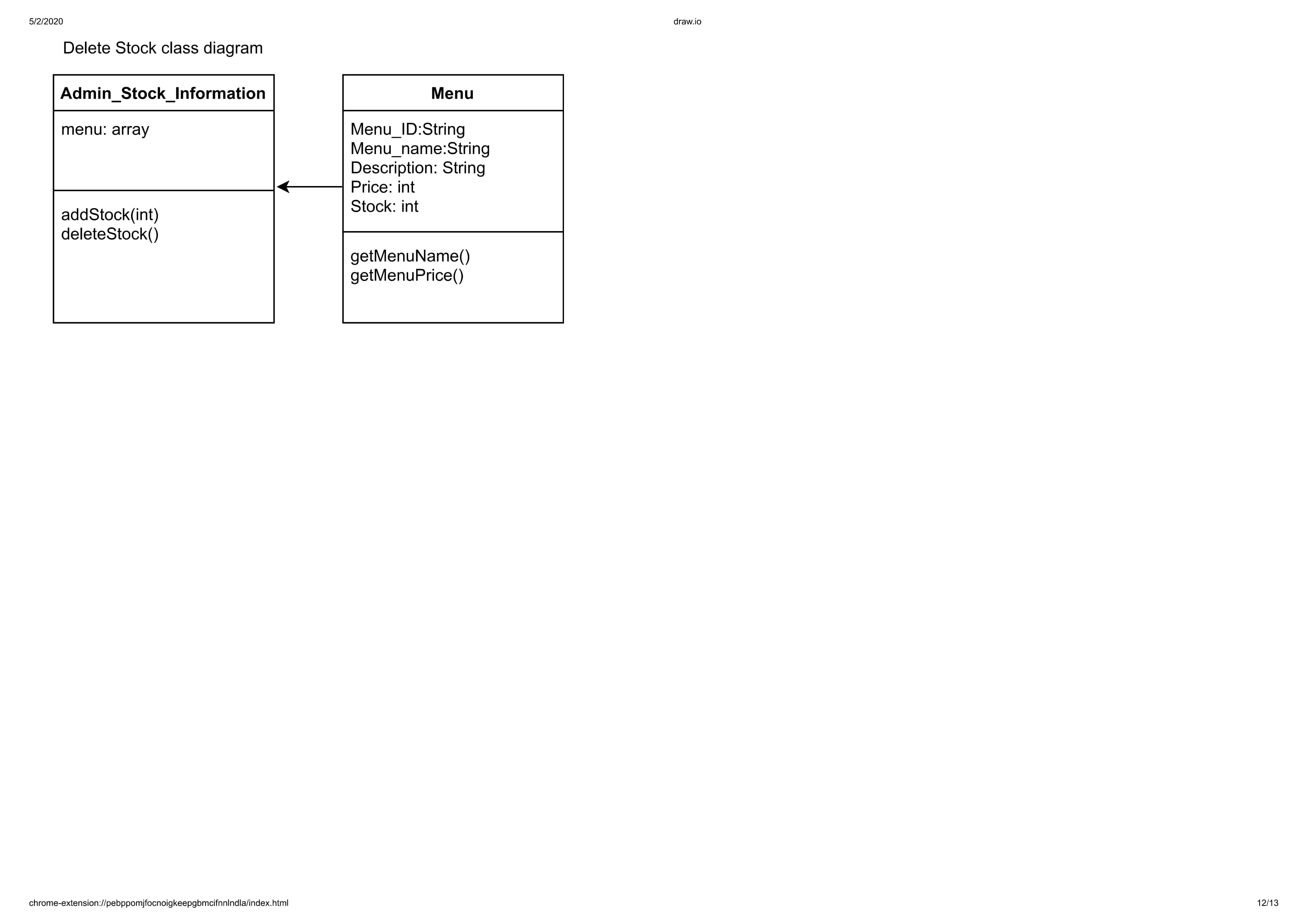


Figure 3. 25 Class Diagram Delete Stock

### 3.1.13 Admin Login Use Case

Admin Login Use Case is a use case that belong to Admin that has function to login to admin page.

#### 3.1.13.1 Class Identification

|  |  |  |
| --- | --- | --- |
| No. | Class Name | Class Type |
| 1 | Login screen | Model |
| 2 | Validation | Controller |
| 3 | Database | Database |

Tabel 3. 13 Class Identification Admin Login

#### 3.1.13.2 Sequence Diagram

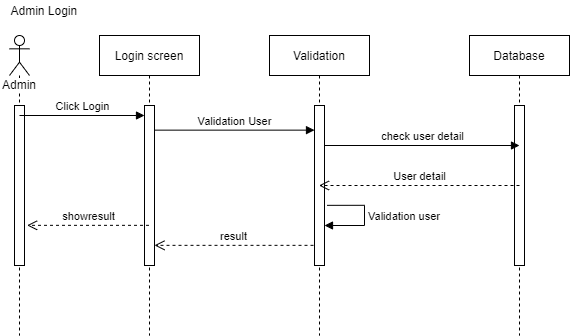


Figure 3. 26 Sequence Delete Stock

#### 3.1.13.3 Class Diagram

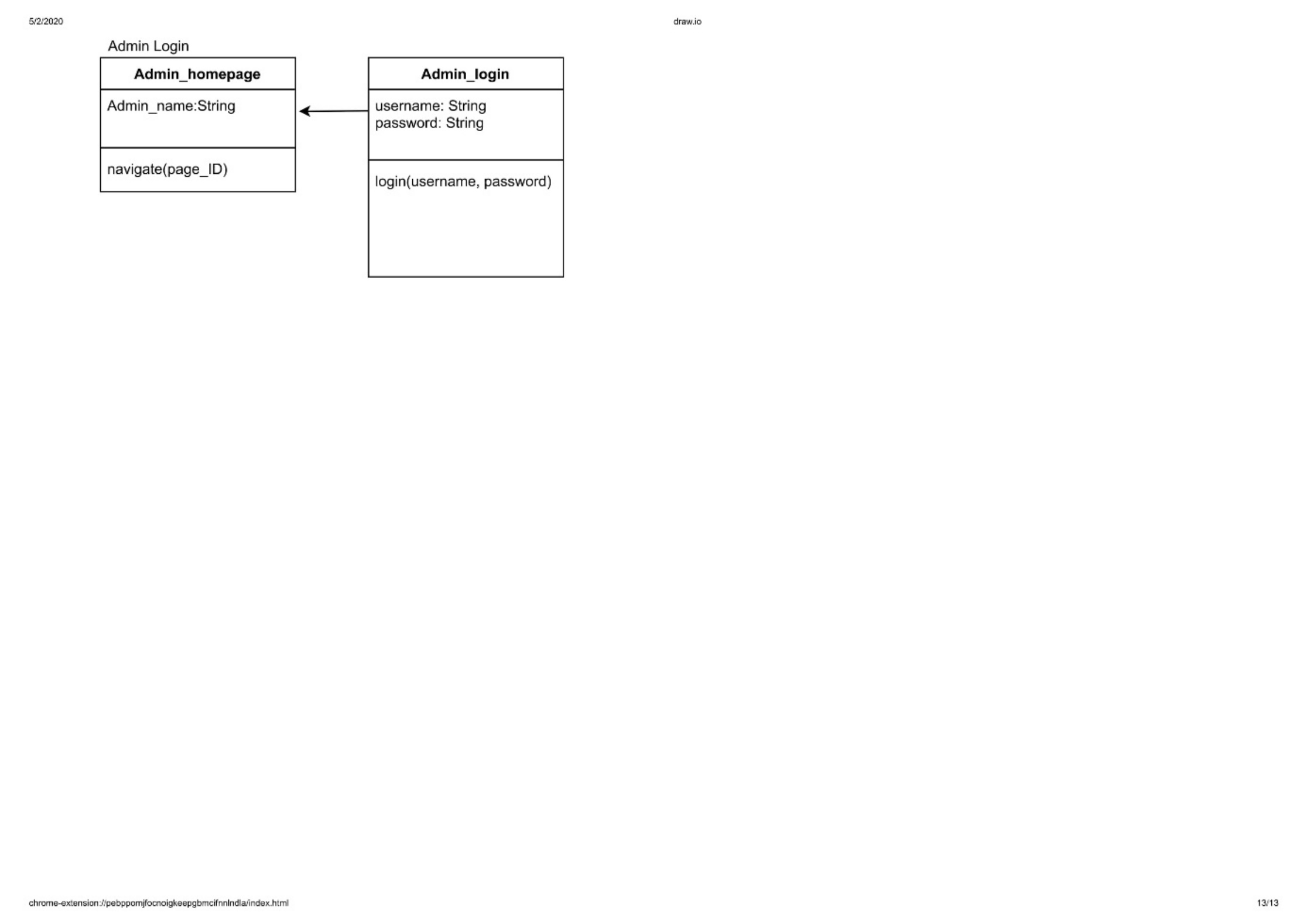


Figure 3. 27 Class Diagram Admin Login

## Detail Class Design

|  |  |  |
| --- | --- | --- |
| No | Class Name | Related Class Name |
| 1. | Admin\_login | Admin\_homepage |
| 2. | Admin\_homapage | Admin\_stock\_information, Admin\_menu\_information , Admin\_confirmation\_page |
| 3. | Admin\_stock\_information | Menu |
| 4. | Customers | Customers\_homepage |
| 5. | Admin\_menu\_information | Menu |
| 6. | Customers\_homepage | Cutomer\_confirm\_page |
| 7. | Ordered\_items | Admin\_confirmation\_page |
| 8. | Admin\_confirmation\_page | Receipt, Messege |

Tabel 3. 14 Detail Class Design

### Admin Login Class

Class Name : Admin login

|  |  |  |
| --- | --- | --- |
| **Operation Name** | **Visibility**  **(private, public)** | **Information** |
| Login(username,password) | Private | Admin login |
| **Attribute Name** | **Visibility**  **(private, public)** | **Type** |
| Username | Private | String |
| Password | Private | String |

Tabel 3. 15 Admin Class

### Admin Homepage Class

Class Name : Admin Homepage

|  |  |  |
| --- | --- | --- |
| **Operation Name** | **Visibility**  **(private, public)** | **Information** |
| Navigate(page\_ID) | Private | Display homepage |
| **Attribute Name** | **Visibility**  **(private, public)** | **Type** |
| Admin\_name | Private | String |

Tabel 3. 16 Admin Homepage

### Admin Stock Information Class

Class Name : Admin stock information

|  |  |  |
| --- | --- | --- |
| **Operation Name** | **Visibility**  **(private, public)** | **Information** |
| addStock(int) | Private | To added stock |
| deleteStock() | Private | To delete stock |
| **Attribute Name** | **Visibility**  **(private, public)** | **Type** |
| Menu | Private | Array |

Tabel 3. 17 Admin Stock Information

### Admin Menu Information Class

Class Name : Admin menu information

|  |  |  |
| --- | --- | --- |
| **Operation Name** | **Visibility**  **(private, public)** | **Information** |
| addMenu() | Private | To add the menu |
| Delete() | Private | To delete the menu |
| **Attribute Name** | **Visibility**  **(private, public)** | **Type** |
| Menu | Private | Array |

Tabel 3. 18 Admin Menu Information

### Admin Confirmation Page Class

Class Name : Admin confirmation page

|  |  |  |
| --- | --- | --- |
| **Operation Name** | **Visibility**  **(private, public)** | **Information** |
| Decline() | Private | To decline the form from cust |
| Confirm() | Private | To confirm the form from cust |
| **Attribute Name** | **Visibility**  **(private, public)** | **Type** |
| Name | Private | String |
| Table\_number | Private | Integer |
| orderitem | Private a | Array |

Tabel 3. 19 Admin Confirmation Page

### Receipt Class

Class Name : Receipt

|  |  |  |
| --- | --- | --- |
| **Operation Name** | **Visibility**  **(private, public)** | **Information** |
| Print() | Public | Used to print the receipt |
| GetTotalPrice() | Public | Calculate the total price |
| **Attribute Name** | **Visibility**  **(private, public)** | **Type** |
| Order\_id | Public | String |
| Customer\_name | Public | String |

Tabel 3. 20 Receipt Class

### Menu Class

Class Name : Menu

|  |  |  |
| --- | --- | --- |
| **Operation Name** | **Visibility**  **(private, public)** | **Information** |
| getMenuName() | Public | The list of menu |
| getMenuPrice() | Private | The list of price |
| **Attribute Name** | **Visibility**  **(private, public)** | **Type** |
| Menu\_ID | Public | String |
| Nama\_menu | Public | String |
| Description | Public | String |
| Price | Public | Integer |
| Stock | Public | Integer |

Tabel 3. 21 Menu Class

### Ordered Items Class

Class Name : Ordered items

|  |  |  |
| --- | --- | --- |
| **Operation Name** | **Visibility**  **(private, public)** | **Information** |
| getName() | Public | The list of menu |
| getPrice() | Private | The list of price |
| getQuantity() | Public | The list of quantity |
| **Attribute Name** | **Visibility**  **(private, public)** | **Type** |
| Order\_name | Public | String |
| Order\_price | Public | Integer |
| Order\_quantity | Public | Integer |

Tabel 3. 22 Ordered Items

### Message Class

Class Name : Message

|  |  |  |
| --- | --- | --- |
| **Operation Name** | **Visibility**  **(private, public)** | **Information** |
| SendMessage(msg) | Public | To send the confirm page |
| **Attribute Name** | **Visibility**  **(private, public)** | **Type** |
| orderID | Public | String |
| msg | Public | String |

Tabel 3. 23 Message Class

### Customers Homepage Class

Class Name : Customers homepage

|  |  |  |
| --- | --- | --- |
| **Operation Name** | **Visibility**  **(private, public)** | **Information** |
| inputName(string) | Public | The list of menu |
| inputTableNumber(string) | Private | The list of price |
| addQuantity(int) | Public | To add the quantity |
| minQuantity(int) | Public | The minimum of quantity |
| getTotal(int) | Public | The list of total menu |
| getMenu(array) | Public | The list og the menu |
| **Attribute Name** | **Visibility**  **(private, public)** | **Type** |
| Name | Public | String |
| Table\_number | Public | Integer |

Tabel 3. 24 Customers Homepage

### Customers Class

Class Name : Customers

|  |  |  |
| --- | --- | --- |
| **Operation Name** | **Visibility**  **(private, public)** | **Information** |
| inputName() | Private | To add name cust |
| inputTableNumber() | Private | To add no table cust |
| **Attribute Name** | **Visibility**  **(private, public)** | **Type** |
| Name | Public | String |
| Table\_number | Public | Integer |

Tabel 3. 25 Customers Class

### Customers Confirm Page Class

Class Name : Customers confirm page

|  |  |  |
| --- | --- | --- |
| **Operation Name** | **Visibility**  **(private, public)** | **Information** |
| Confirm(orderID) | Private | To confirm the menu |
| Modify() | Private | To modify the menu |
| **Attribute Name** | **Visibility**  **(private, public)** | **Type** |
| Order | Public | Array |
| Total | Public | Integer |

Tabel 3. 26 Customers Confirm Page

## Class Diagram

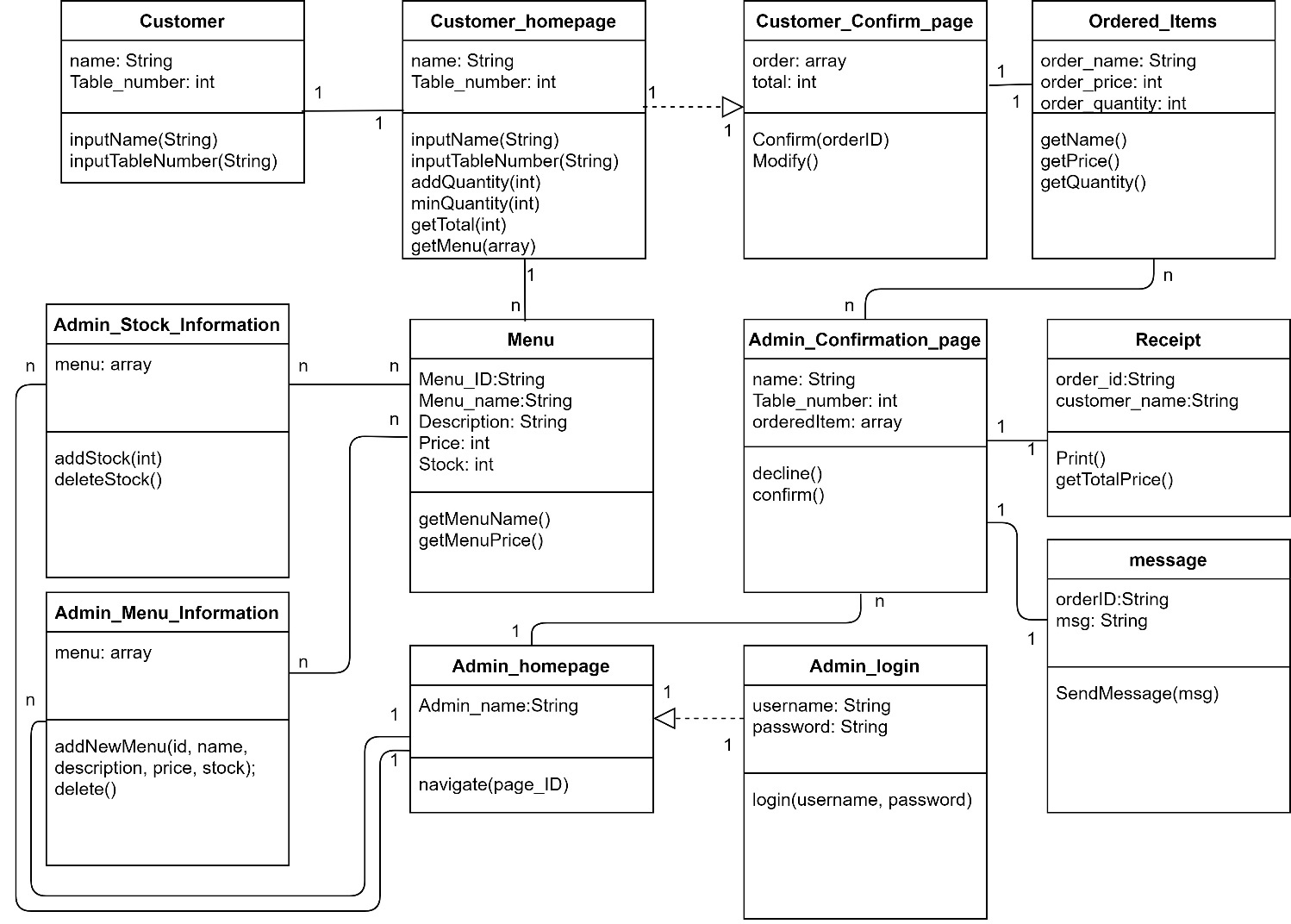


Figure 3. 28 Class Diagram

## Algorithm / Query

### *Add Quantity*

Class Name : Customer Homepage

Operation Name : Add quantity

Algorithm : (Algo-C001)

Add(int index){

Int x = ordered\_item[index];

x++;

ordered\_item[index] = x;

}

Query : -

|  |  |  |
| --- | --- | --- |
| No Query | Query | Information |
| - | - | - |

Tabel 3. 27 Add Quantity

### *Minus Quantity*

Class Name : Customer Homepage

Operation Name : Minus quantity

Algorithm : (Algo-C002)

Minus(int index){

Int x = ordered\_item[index];

X = x-1;

ordered\_item[index] = x;

}

Query :-

|  |  |  |
| --- | --- | --- |
| No Query | Query | Information |
| - | - | - |

Tabel 3. 28 Minus Quantity

### *Get menu*

Class Name : Customer Homepage

Operation Name : Get menu

Algorithm : (Algo-C003)

getMenu{

http.get(“server\_address\_here”);

response = json.decode(response.body);

menuArray = response;

}

Query :

|  |  |  |
| --- | --- | --- |
| No Query | Query | Information |
| Q-001 | Select menu\_name, description, price, image from menu | Used to fetch information of the menu |

Tabel 3. 29 Get Menu

## Interface Design

### Interface : 001 – Customers Home Page

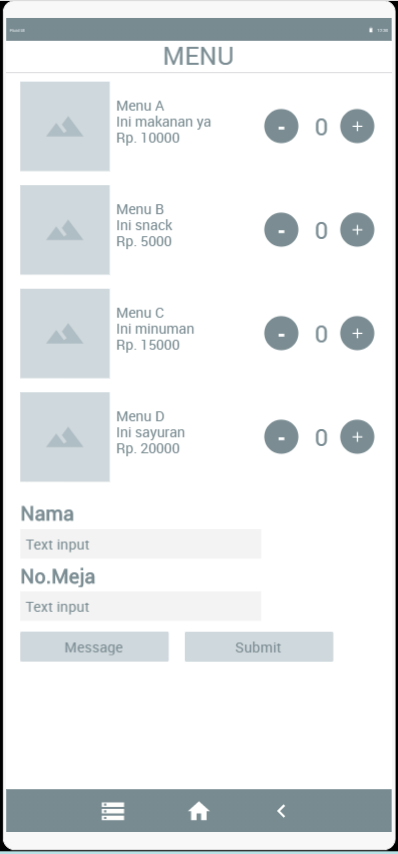


Figure 3. 29 Customers Home Page

|  |  |  |  |
| --- | --- | --- | --- |
| **Id\_Object** | **Type** | **Name** | **Information** |
| InputField1 | Input | Nama | Filled with the string of name |
| InputField2 | Input | No.Meja | Filled with the String of table number |
| Button1 | Button | Submit | If the button clicked, the data from Menu page will be saved temporarily at the buffer |
| Button2 | Button | Message | To see the message from admin |
| Button3 | Button | - | To add the amount of menu that will be order |
| Button4 | Button | + | To reduce the amount of menu that will be order |

Tabel 3. 30 Description Customers Home Page

### Interface : 002 – Customers Confirm Page

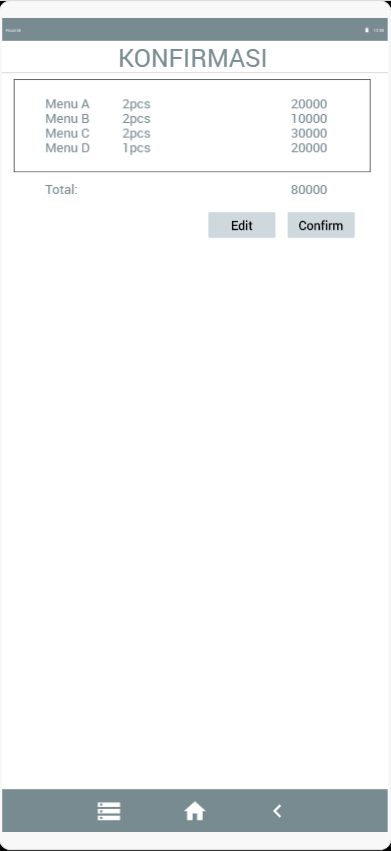


Figure 3. 30 Customers Confirm Page

|  |  |  |  |
| --- | --- | --- | --- |
| **Id\_Object** | **Type** | **Name** | **Information** |
| Button1 | Button | Edit | If the button clicked, Custimer can change the menu that customer fill before |
| Button2 | Button | Konfirmasi | If clicked then the order will be send to admin to be processed |

Tabel 3. 31 Description Customers Confirm Page

### Interface : 003 – Admin Homepage

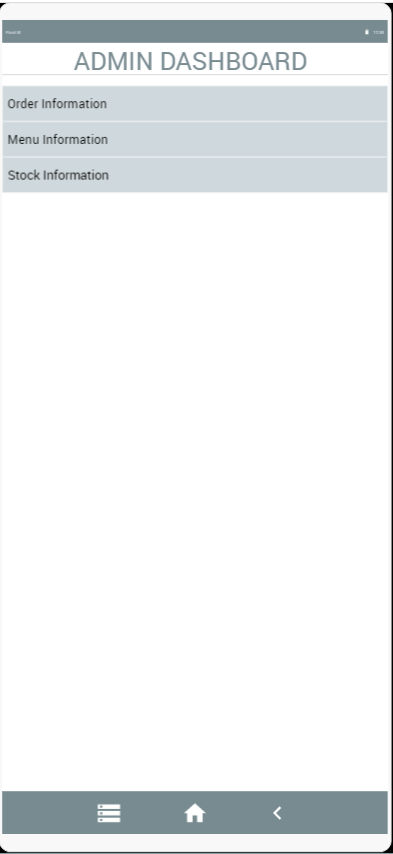


Figure 3. 31 Admin Homepage

|  |  |  |  |
| --- | --- | --- | --- |
| **Id\_Object** | **Type** | **Name** | **Information** |
| Button1 | Button | Pesanan | If the button clicked, that will be show all of Customer data that will be order |
| Button2 | Button | Informasi Menu | If the button clicked, that will be show all of information about Menu. |
| Button3 | Button | Informasi Stock | If the button clicked, that will be show all of information about Stock. |

Tabel 3. 32 Description Admin Homepage

### Interface : 004 – Admin Order Page

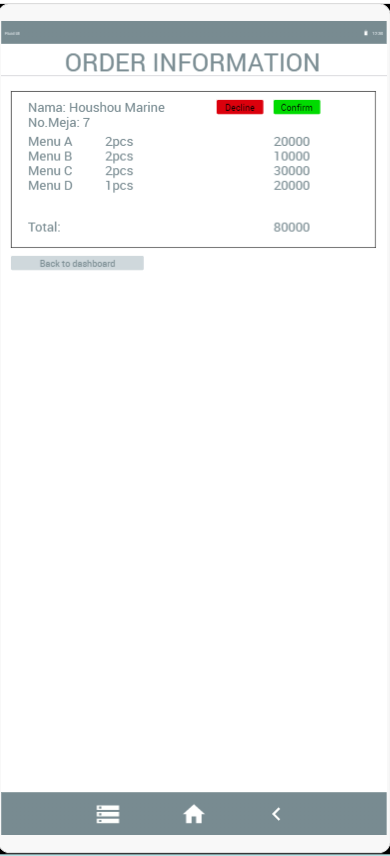


Figure 3. 32 Admin Order Page

|  |  |  |  |
| --- | --- | --- | --- |
| **Id\_Object** | **Type** | **Name** | **Information** |
| Button1 | Button | Konfirmasi dan cetak kwitansi | If the button clicked, It will be Confirm and printed all of the Information Order of the Customer, and customer will be notified that the order is accepted. |
| Button2 | Button | Batalkan dan kirim pesan | If the button clicked, It will cancel the order and send a message to inform the customer |
| Button3 | Button | Kembali ke dasbor | If the button clicked, it will redirect back to the dashboard page |

Tabel 3. 33 Description Admin Order Page

### Interface : 005 – Admin Menu Information Page



Figure 3. 33 Admin Menu Information Page

|  |  |  |  |
| --- | --- | --- | --- |
| **Id\_Object** | **Type** | **Name** | **Information** |
| Button1 | Button | Tambah Menu | If the button clicked, it will add new menu |
| Button2 | Button | X | If the button clicked, it will delete a certain menu |
| Button3 | Button | Kembali ke Menu | If the button clicked, it will redirect back to the dashboard page |

Tabel 3. 34 Description Admin Menu Information Page

### Interface : 006 – Admin Stock Information Page

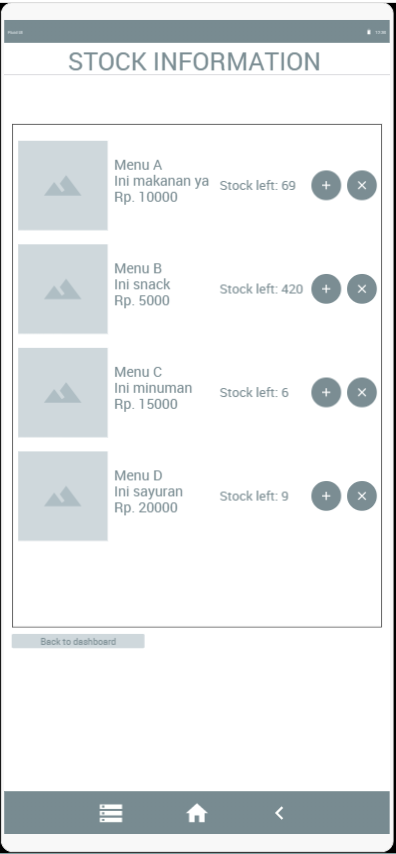
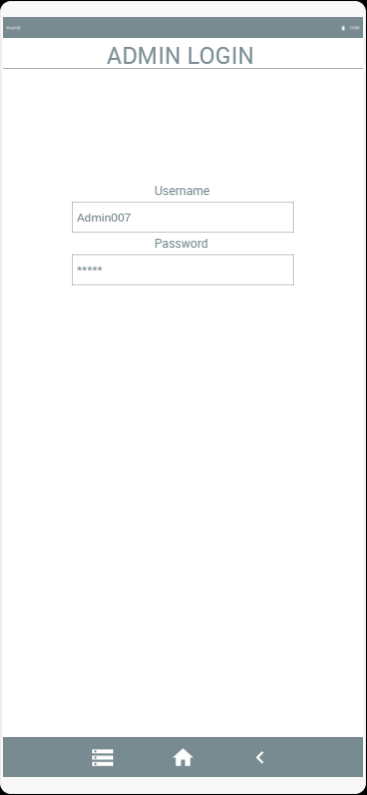


Figure 3. 34 Admin Stock Information Page

|  |  |  |  |
| --- | --- | --- | --- |
| **Id\_Object** | **Type** | **Name** | **Information** |
| Button1 | Button | Tambah | If the button clicked, it will add Stock of Menu |
| Button2 | Button | Hapus | If the button clicked, it will delete Stock of Menu |
| Button3 | Button | Kembali ke Dashbor | If the button clicked, it will redirect back to the dashboard page |

Tabel 3. 35 Description Admin Stock Info Page

### Interface : 007 – Admin Login Page



Login

Figure 3. 35 Admin Login Page

|  |  |  |  |
| --- | --- | --- | --- |
| **Id\_Object** | **Type** | **Name** | **Information** |
| InputField1 | Input | Username | Field with the string name |
| InputField2 | Input | Password | Field with the string password |
| Button1 | Button | Login | If the button clicked, it take back to Admin Page |

Tabel 3. 36 Description Admin Login Page

## Design of Class Persistence Representations

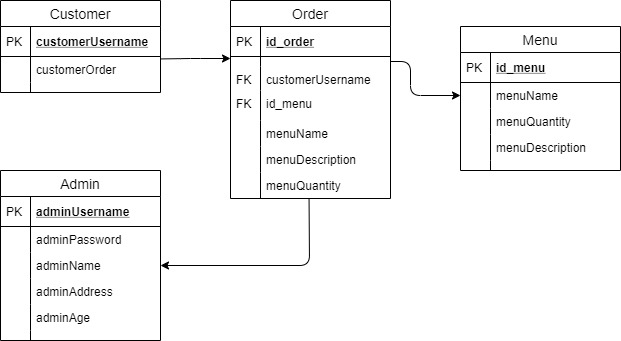


Figure 3. 36 Class Persistence Representations

# Frown Matrix

|  |  |  |
| --- | --- | --- |
| **Requirement** | **Use Case** | **Class** |
| FR-01 | Input Order | Menu, Homepage, Ordered\_item |
| FR-02 | Modify Order | Confirm\_page, ordered\_item |
| FR-03 | Confirm Order | Confirm\_page, ordered\_item |
| FR-04 | Print Receipt | Admin\_confirm\_page, Ordered\_item |
| FR-05 | Notify Customer | Admin\_confirm\_page, ordered\_item, decline\_message |
| FR-06 | Admin Confirm Order | Admin\_confirm\_page, ordered\_item |
| FR-07 | Check Menu | Admin\_menu\_page, menu |
| FR-08 | Input Menu | Admin\_menu\_page, menu |
| FR-09 | Delete Menu | Admin\_menu\_page, menu |
| FR-10 | Check Stock | Admin\_stock\_page, menu |
| FR-11 | Input Stock | Admin\_stock\_page, menu |
| FR-12 | Delete Stock | Admin\_stock\_page, menu |
| FR-13 | Admin Login | Admin\_login,menu |

Table 4. 1 Frown Matrix

# 