



*The Energy University*

UNIVERSITI TENAGA NASIONAL – PUTRAJAYA CAMPUS

COLLEGE OF COMPUTING AND INFORMATICS

DATABASE 1 – CISB214 – SECTION 1F

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DATABASE MINI PROJECT

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## 1.0 SHOP BACKGROUND

### Minimalist.hood



Minimalist.hood is a small online jewellery shop selling bracelets and custom made necklaces through Instagram as their main business platform. The owner of this small business is Nur Rahimati Ain, who is also a first year Bachelor of Computer Science student. She started this business during the first Movement Control Order (MCO) period as a side gig. The shop was founded in March 2020, and marketed towards local customers. The delivery of the product will be made using J&T courier service that usually takes 1 to 3 business days to arrive at customers' doorstep. To ensure the products arrive safely, all of the jewellery products are packed in robust and secure hard boxes

with bubble wrappings to provide cushion. We offer our customers more than 10 designs of ready made bracelets, and custom made stainless steel necklaces. A special service is also available for those who want the jewelry to be sent as a gift to someone special.

Minimalist.hood are recognized for their affordability, yet stunning designs and are suitable for those who wish to give their loved ones a quality gift with a small budget. A simple and meaningful gift of a jewelry can uplift one's day is Minimalist.hood's belief and as for now, they never failed to share and spread the love.

Check minimalist.hood on Instagram today !

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## **2.0 SYSTEM SCOPE**

Minimalist.hood are planning to automatize their currently manual-paper based database system to record all the data concerning their customers, agents, items, and orders.

### **OBJECTIVE OF PROJECT**

- The system will gather all the databases required for the business's productivity.
- The automated system will reduce the workload of agents to keep track of the inventory, invoicing, and ensure orders are filled and arrived safely to the customers.
- The system also aims to recognize their customers' buying patterns together with the hot selling item so they can carefully plan their advertising according to customers' needs.

### **TOOLS AND REQUIREMENTS OF PROJECT**

The automated system will be using Microsoft Access as its software and DBMS as the database storage.

### **SYSTEM MILESTONE**

**Proposal of System ----- 08 / 03 / 2021**

**Draft of Report ----- 25 / 03 / 2021**

**Final System Report ----- 23 / 04 / 2021**

**Project Presentation ----- 28 / 04 / 2021**

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## FUNCTIONALITY OF SYSTEM

Minimalist.hood demands a system that can cater to its business requirements. Such requirements include storing and organizing information regarding agents, inventory, orders and customers. Hence, a total of four tables have been created. Agents table stores information of all agents. Furthermore, the inventory table keeps the information including the price and stock availability of all active products. Next, the orders table stores information of every purchase while the customers table on the other hand keeps a list of all customers that had purchased from minimalist.hood.

Besides the tables mentioned, this system also allows users to add new, edit and delete existing data to and from all tables. In addition, this system is capable of filtering and sorting data based on users' requirements. This system also has the ability to run customized queries to produce a report for users as well as an invoice for customers. Another additional feature of this system is that it includes a product catalog page that displays the available items including a promotion functionality to ease sales agents to quickly screenshot the available items for potential customers.

## DATABASE ACCESS PERMISSION AND SECURITY

The database system is encrypted with a password making it only accessible by the administrators and sales agents only. Agents can only access customers, orders and a portion of inventory tables whereas administrators can access agents and inventory tables only. The database administrator on the other hand will be able to access all tables for maintenance purposes.

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## **3.0 SYSTEM USER**

This database system is created for organizing information related to the business conducts of minimalist.hood. The system will be used by three categories of users which are the agents, administrators and database administrators.

At the home page, it will display two options which are administrators and agents. In the administrators page, there are several functionality available which includes the adding and terminating agents along with editing information about existing agents. Besides that, administrators are also able to add new, edit and discontinue products from the inventory table.

Besides the administrators, agents will have two functionalities together with a special feature that accesses a portion of the inventory table. The two main functionalities are agents will have the ability to add new customers into the customer table and add orders into the orders table. The special feature mentioned earlier is that agents can access some part of the inventory table as reference of product availability.

The last user is the database administrator which is responsible for maintaining the security, integrity and performance of the database system. Other than that, database administrators also will diagnose and troubleshoot any database errors that might happen in the future.

## 4.0 ENTITY RELATIONSHIP DIAGRAM

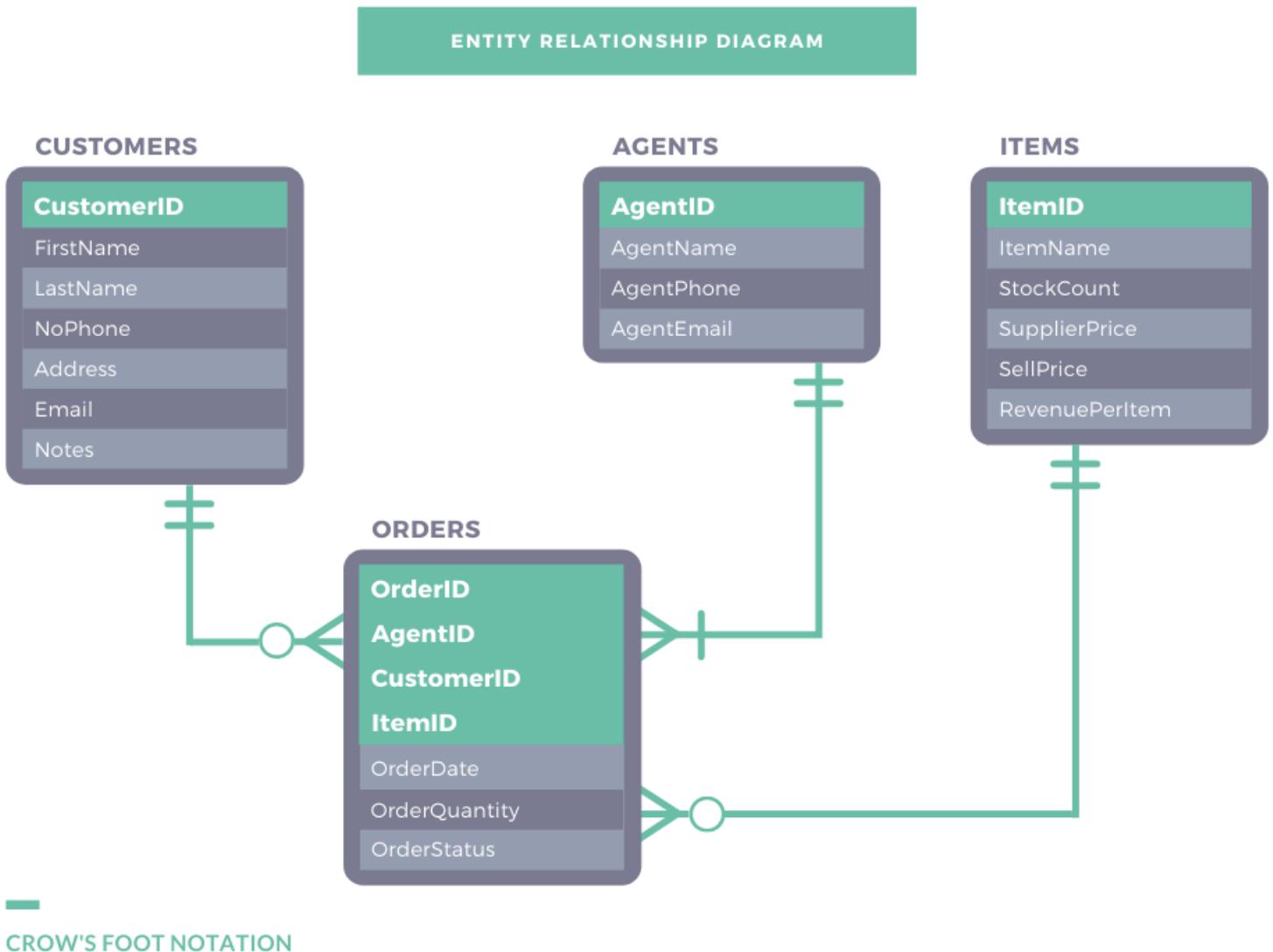


Diagram 1 - Shows The ERD

## 5.0 DATA DICTIONARY

**Table 1 - Shows The Data Dictionary**

Table	Attribute	Description	Data Type	Data Format	Constraint
Customers	CustomerID	Primary Key	AutoNumber(4)	\C000	Not Null
	FirstName	Customer's first name	Varchar2(20)	-	Not Null
	LastName	Customer's last name	Varchar2(20)	-	Null
	NoPhone	Customer's phone number	Varchar(11)	000\00000009;0:_	Not Null
	Address	Customer's address	Varchar(20)	-	Not Null
	Email	Customer's email	Varchar2(25)	-	Null
	Notes	Customer's remark	Varchar2(20)	-	Null
Agent	AgentID	Primary Key	AutoNumber(4)	\A000	Not Null
	AgentName	Agent's name	Varchar2(20)	-	Not Null
	AgentPhone	Agent's phone number	Varchar(11)	000\00000009;0:_	Not Null
	AgentEmail	Agent's email	Varchar2(25)	-	Not Null

**Table 1 - Data Dictionary Continued**

Table	Attribute	Description	Data Type	Data Format	Constraint
Item	ItemID	Primary Key	AutoNumber(4)	\P000	Not Null
	ItemName	Item's name	Varchar2(25)	-	Not Null
	StockCount	Stock's count	Number(4)	099;1;_	Not Null
	SupplierPrice	Supplier's price	Number(3,2)	"RM"0.00	Not Null
	SellPrice	Sell price	Number(3,2)	"RM"0.00	Not Null
	RevenuePerItem	Revenue	Number(4,2)	"RM"0.00	Not Null
Orders	OrderID	Primary Key	AutoNumber(5)	\B0001	Not Null
	AgentID	Primary Key	Number(4)	-	Not Null
	CustomerID	Primary Key	Number(4)	-	Not Null
	OrderDate	Order's date	Date	DD-MM-YY	Not Null
	ItemID	Primary Key	Number(4)	-	Not Null
	OrderQuantity	Order's quantity	Number(4)	099;1;_	Not Null
	OrderStatus	Order finished	Yes/No	-	Not Null

---

## 6.0 TABLE RECORDS

### Customers Table

CustomerID	FirstName	LastName	NoPhone	Address	Email	Notes
C001	Izzati Huda	Naza Badi	014-5584545	Kuala Lumpur	afrinazul@gmail.com	Friendly!
C002	Nadia	Borhan	019-4962778	Selangor	n.borhan@yahoo.com	Orders a LOT!
C003	Deveena	Selvarajan	013-5557070	Selangor	dee1995.s@gmail.com	Fast Replies!
C004	Siti Nadhirah	Adnan	016-5895727	Bangi	nad.adnanz@gmail.com	Review products!
C005	Liyana	Mohamad Fadzil	010-9913639	Perlis	liyanafadx@gmail.com	Frequent Cust!

### Agents Table

AgentID	AgentName	AgentPhone	AgentEmail
A001	Muhammad Daniel	011-25605027	Daniel707N@gmail.com
A002	Zafar Muhammad	018-9420117	zforntego@gmail.com
A003	Nur Rahimati	018-2938900	nurraxoxox@gmail.com
A004	Athilah	017-3224388	adam.tilah@gmail.com
A005	Muhammad Faizal	016-5895645	faizal.01@gmail.com
A006	Izzatul	019-8787767	izzaz67@gmail.com

---

## Items Table

ItemID	ItemName	StockCount	SupplierPrice	SellPrice	RevenuePerItem
P001	Weave Red Flower	21	RM2.17	RM10.00	RM7.83
P002	2 Pcs Whale Purple	18	RM11.11	RM15.00	RM3.89
P003	Silver Dazzle Darling	36	RM3.02	RM10.00	RM6.98
P004	Ivy Swan	13	RM5.66	RM15.00	RM9.34
P005	Pink Crystal Baleine	15	RM7.99	RM18.00	RM10.01

## Orders Table

OrderID	AgentID	CustomerID	OrderDate	ItemID	OrderQuantity	OrderStatus
B001	A002	C001	03-Mar-21	P001	2	/
B002	A002	C002	05-Mar-21	P003	3	/
B003	A001	C003	08-Mar-21	P005	1	
B004	A003	C004	14-Mar-21	P001	1	
B005	A004	C005	17-Mar-21	P004	2	

---

## 7.0 QUERIES

### Create Table

#### CREATE TABLE CUSTOMERS

```
(    CustomerID  NUMBER(4)          NOT NULL,  
        FirstName  VARCHAR2(20)      NOT NULL,  
        LastName   VARCHAR2(20),  
        NoPhone    VARCHAR(11)        NOT NULL,  
        Address    VARCHAR(20)        NOT NULL,  
        Email      VARCHAR2(25)  
        Notes      VARCHAR2(20)
```

```
CONSTRAINT cust_custid_pk PRIMARY KEY (CustomerID),
```

```
CONSTRAINT cust_email_uk UNIQUE (Email)
```

```
);
```

---

### **CREATE TABLE AGENTS**

```
(    AgentID      NUMBER(4)          NOT NULL,  
        AgentName    VARCHAR2(20)       NOT NULL,  
        AgentPhone   VARCHAR(11)        NOT NULL,  
        AgentEmail   VARCHAR(11)        NOT NULL,  
  
        CONSTRAINT ag_agid_pk PRIMARY KEY (AgentID),  
        CONSTRAINT ag_email_uk UNIQUE (Email)  
);
```

### **CREATE TABLE ITEMS**

```
(    ItemID      NUMBER(4)          NOT NULL,  
        ItemName    VARCHAR2(20)       NOT NULL,  
        StockCount   NUMBER(4)          NOT NULL,  
        SupplierPrice NUMBER(3,2)       NOT NULL,  
        SellPrice    NUMBER(3,2)       NOT NULL,  
        RevenuePerItem NUMBER(3,2)      NOT NULL,  
  
        CONSTRAINT it_itid_pk PRIMARY KEY (ItemID),  
        CONSTRAINT it_stockcount_ck CHECK (StockCount) >= 0  
);
```

---

## **CREATE TABLE ORDERS**

```
(    OrderID      NUMBER(4)      NOT NULL,  
    AgentID      NUMBER(4)      NOT NULL,  
    CustomerID   NUMBER(4)      NOT NULL,  
    OrderDate    DATETIME      NOT NULL,  
    ItemID       NUMBER(4)      NOT NULL,  
    OrderQuantity NUMBER(4)      NOT NULL,  
    OrderStatus   YES/NO        NOT NULL,  
  
CONSTRAINT or_orid_pk PRIMARY KEY (OrderID),  
CONSTRAINT or_orqty_ck CHECK (OrderQuantity > 0)  
);
```

---

## Insert Table

### INSERT INTO CUSTOMERS

(CustomerID, FirstName, LastName, NoPhone, Address, Email, Notes)

VALUES (&CustomerID, '&FirstName', '&LastName', '&NoPhone', '&Address', '&Email', '&Notes')  
);

### INSERT INTO AGENTS

(AgentID, AgentName, AgentPhone, AgentEmail)

VALUES (&AgentID, '&AgentName', '&AgentPhone', '&AgentEmail');

### INSERT INTO ITEMS

(ItemID, ItemName, StockCount, SupplierPrice, SellPrice, RevenuePerItem)

VALUES (&ItemID, '&ItemName', '&StockCount', '&SupplierPrice', '&SellPrice', '&RevenuePerItem');

### INSERT INTO ORDERS

(OrderID, AgentID, CustomerID, OrderDate, ItemID, OrderQuantity, OrderStatus)

VALUES (&OrderID, '&AgentName', '&CustomerID', '&OrderDate', '&ItemID', '&OrderQuantity', '&OrderStatus');

---

## Display Table

```
SELECT *  
FROM Customers;
```

```
SELECT *  
FROM Agents;
```

```
SELECT *  
FROM Items;
```

```
SELECT *  
FROM Orders;
```

---

## 8.0 SYSTEM INTERFACE AND USER MANUAL

### Glossary of Terms

1. All the fields with (\*) are compulsory.
2. Press Save Button to save the record.

A light blue rounded rectangular button with the word "Save" in black text.

3. Press the Arrow Button to go to the previous or next record respectively.



4. Press X Button to exit the tab page.

A light blue rounded rectangular button with a white "X" symbol.

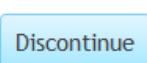
5. Press New Button to add a new record.

A light blue rounded rectangular button with the word "New" in black text.

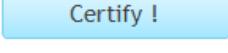
6. Press Terminate Button to terminate the existence record.

A light blue rounded rectangular button with the word "Terminate" in black text.

7. Press Discontinue Button to delete the existence record.

A light blue rounded rectangular button with the word "Discontinue" in black text.

8. Press Certify Button to certify Orders Report

A light blue rounded rectangular button with the text "Certify !" in black.

9. Press Print Button to print the current page.



## 10. Filling in Agent Details

Agent Details

AgentID: A001

AgentName: Muhammad Daniel \*

AgentPhone: 0112560502 \*

AgentEmail: daniel707@gmail.com \*

New Save Terminate

Agent Details can only be generated from **Admin Site**. To generate record of an agent, you need to specify following details :

### **AgentID**

A unique ID number for each agent with the format of “A001” is automatically assigned.

### **AgentName**

Insert agent's full name.

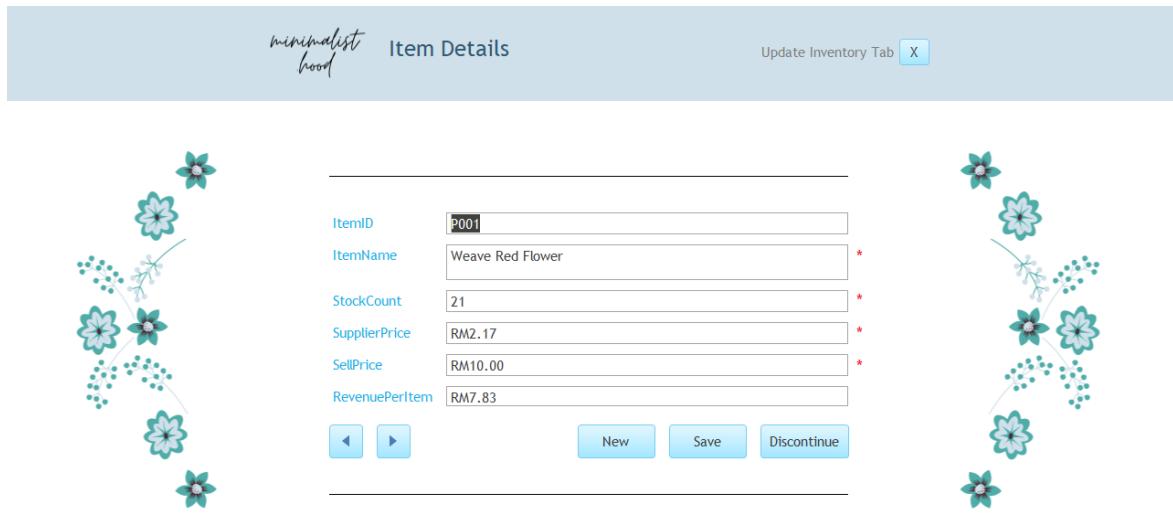
### **AgentPhone**

Insert agent's 10 or 11 digits of phone number without (-) for company use.

### **AgentEmail**

Insert valid agent's email. Eg [xyz123@gmail.com](mailto:xyz123@gmail.com).

## 11. Filling in Item Details



The screenshot shows a user interface titled "Item Details" with a "minimalthood" header. The form contains the following fields:

ItemID	P001
ItemName	Weave Red Flower *
StockCount	21 *
SupplierPrice	RM2.17 *
SellPrice	RM10.00 *
RevenuePerItem	RM7.83

Buttons at the bottom include "New", "Save", and "Discontinue". There are decorative flower icons on the left and right sides of the form.

Item Details can only be generated from **Admin Site**. To generate record of item details, you need to specify following details :

### **ItemID**

A unique ID number for each item with the format of “P001” is automatically assigned.

### **ItemName**

Insert the item's full name.

### **StockCount**

Insert the total number of current stock counts. StockCount must be equal or more than 0.

### **SupplierPrice**

Insert the price of the item that was bought from the supplier, in Malaysian currency.

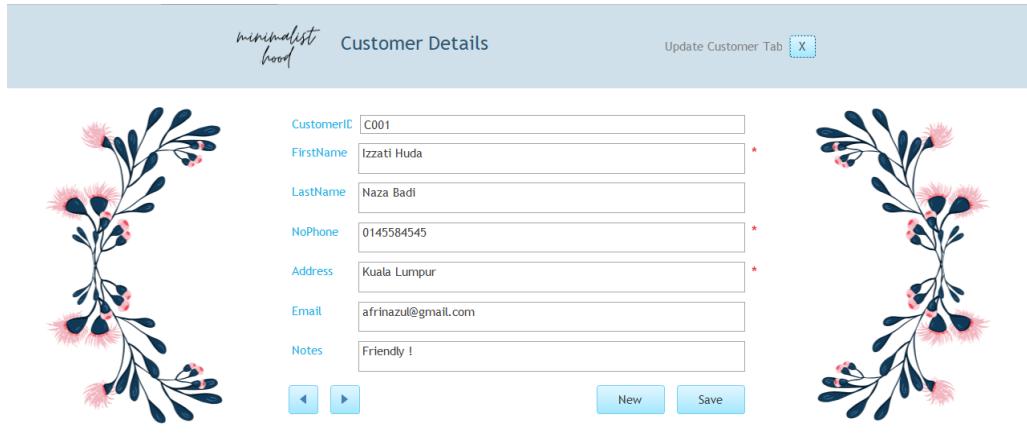
### **SellPrice**

Insert the current price that has been approved, in Malaysian currency.

### **RevenuePerItem**

This is auto-generated once you have entered the supplier price and sell price.

## 12. Fill in Customer Details



The image shows a software interface titled "Customer Details". At the top right is a button labeled "Update Customer Tab" with a small "X" icon. The main area contains fields for CustomerID (C001), FirstName (Izzati Huda), LastName (Naza Badi), NoPhone (0145584545), Address (Kuala Lumpur), Email (afrinazul@gmail.com), and Notes (Friendly!). There are also "New" and "Save" buttons at the bottom. The form is framed by decorative floral illustrations on both sides.

CustomerID	C001
FirstName	Izzati Huda
LastName	Naza Badi
NoPhone	0145584545
Address	Kuala Lumpur
Email	afrinazul@gmail.com
Notes	Friendly !

New Save

Customer Details can only be generated in [Agent Site](#). To generate record of customer details, you need to specify following details :

### **CustomerID**

A unique ID number for each customer with the format of “C001” is automatically assigned

### **FirstName**

Insert customer's first name.

### **Last Name**

Insert customer's last name. This is optional.

### **NoPhone**

Insert 10 or 11 digits of customer's phone number without (-) for company use.

### **Address**

Insert full customer address for postage purposes.

### **Email**

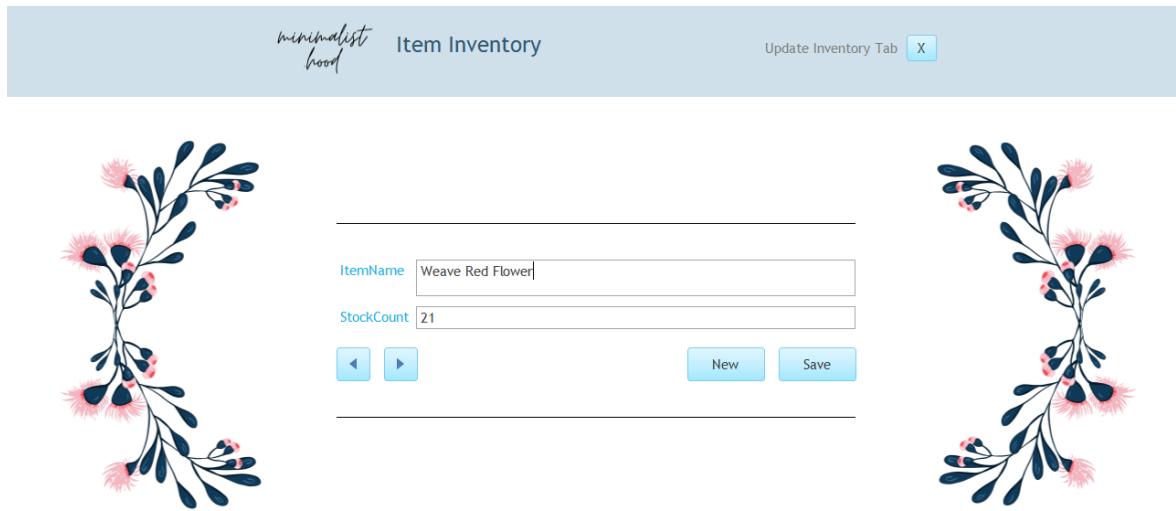
Insert valid customer's email eg. [xyz123@gmail.com](mailto:xyz123@gmail.com).

### **Notes**

Insert additional notes about the customer. This is optional.

---

13. Fill in Item Inventory.



Item Inventory can only be generated in **Agent Site** (optional). To generate record of item inventory, you need to specify following details :

**ItemName**

Insert the name of the Item.

**StockCount**

Insert the current number of item stocks.

#### 14. Fill in Orders Table

The screenshot shows a form titled "Orders Table" with the following fields:

OrderID	B0001
AgentID	A002
CustomerID	C001
OrderDate	03-Mar-21
ItemID	P001
OrderQuantity	2
OrderStatus	<input checked="" type="checkbox"/>

At the bottom of the form are two buttons: "New" and "Save".

Orders Table can only be generated in **Agent Site**. To generate record of orders table, you need to specify following details :

##### **OrderID**

A unique ID number for each order with the format of “B0001” is automatically assigned.

##### **AgentID**

Insert AgentID of the agent that the customer is dealing with.

##### **CustomerID**

Insert CustomerID of the customer who has ordered.

##### **Order Date**

Insert the date of the item that was ordered which is formatted with “dd-mm-yy”.

##### **ItemID**

Insert ItemID of the item that the customer ordered.

##### **OrderQuantity**

Insert the quantity of the item that was ordered.

##### **OrderStatus**

Agent has to tick this box if the order has been filled.

## 15. View Orders Report

Orders Report						
OrderID	AgentID	CustomerID	OrderDate	ItemID	OrderQuantity	OrderStatus
B0001	A002	C001	03-Mar-21	P001	2	<input checked="" type="checkbox"/>
B0002	A002	C002	05-Mar-21	P003	3	<input checked="" type="checkbox"/>
B0003	A001	C003	08-Mar-21	P005	1	<input type="checkbox"/>
B0004	A003	C004	14-Mar-21	P001	1	<input type="checkbox"/>
B0005	A004	C005	17-Mar-21	P004	2	<input type="checkbox"/>
5						
<a href="#">Certify !</a>						

Orders Report is generated automatically by the information keyed in by the Agent and can only be accessed in [Agent Site](#).

Orders Report displays all order details including the OrderID, AgentID, CustomerID, OrderDate, ItemID, OrderQuantity and OrderStatus.

Orders Report can be filtered to search for specific OrderID, AgentID, CustomerID, ItemID and even by OrderDate.

Agent can double check the information, “Certify！”, and print the results to be sent to the warehouse for shipping purposes.

## 16. View Invoice.

The screenshots show a software interface for generating invoices. The top header includes the logo 'minimalist hood' and the word 'Invoice'. The date and time are listed as 'Thursday, 22 April, 2021' and '2:17:15 PM' with a close button ('X').

**Customer Details:**

CustomerID	C001	OrderID	B0001
FirstName	Izzati Huda	OrderDate	03-Mar-21
NoPhone	014-5584545		
Address	Kuala Lumpur		

**Order Details:**

Bil	ItemName	SellPrice	OrderQuantity	Subtotal
1	Weave Red Flower	RM10.00	2	RM20

**Postage and Total:**

Postage	RM10
Total	<b>RM30</b>

---

**Filtered Order Details:**

Bil	ItemName	SellPrice	OrderQuantity	Subtotal
1	Weave Red Flower	RM10.00	1	RM10

**Postage and Total:**

Postage	RM10
Total	<b>RM20</b>

---

**Second Filtered Order Details:**

Bil	ItemName	SellPrice	OrderQuantity	Subtotal
1	Ivy Swan	RM15.00	2	RM30

**Postage and Total:**

Postage	RM10
Total	<b>RM40</b>

**Signatures:**

*Signature: nurra w <3*

*I have enough jewelry  
said no girl ever ✨*

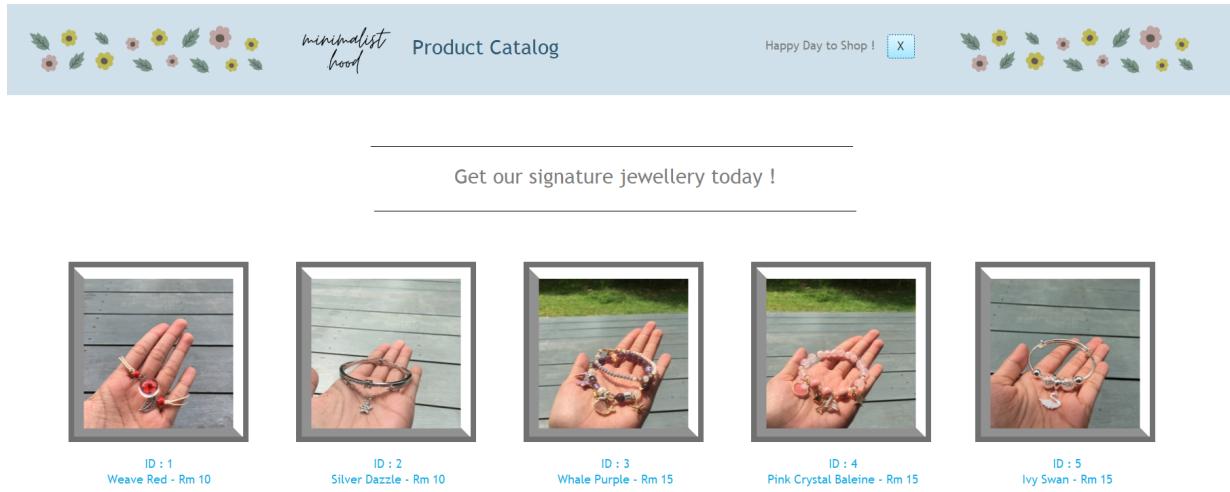
Invoice Report is generated automatically by the information keyed in by the Agent and can only be generated in **Agent Site**.

The Invoice Report displays all the customer details, order details and item details.

The Invoice Report can be filtered to search for specific OrderID, CustomerID, OrderDate and even by customer's name.

Agent can double check the information, and print the results to be sent to the customer for billing purposes.

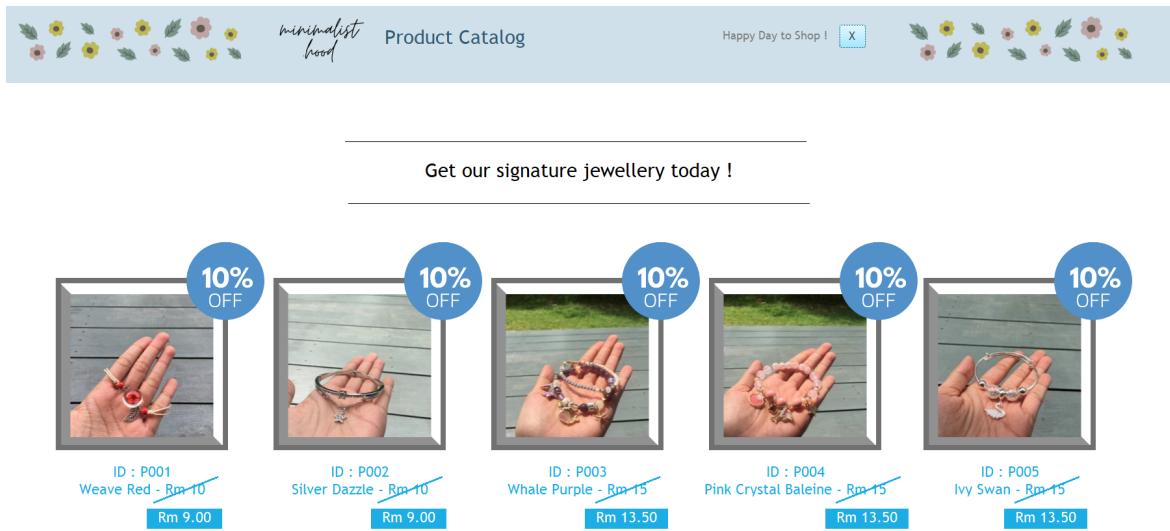
## 17. View Product Catalog



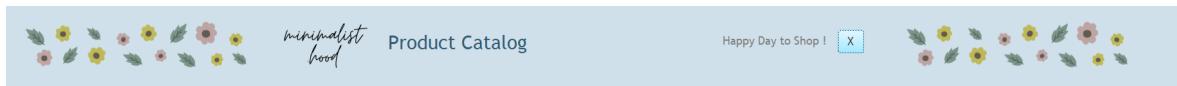
Product Catalog can only be accessed in the [Catalog Site](#). It displays all stocks that are available with the ItemID, ItemName and SellPrice.

On the Product Catalog, Users (Agents or Admins), can apply discounts to the items displayed, either 10%, 30% or 50% as shown below.

### 10% Discount



## 30% Discount



Get our signature jewellery today !

**30% OFF**

& FREE SHIPPING  
APPLIED AT  
CHECKOUT



ID : P001  
Weave Red - Rm 10



ID : P002  
Silver Dazzle - Rm 10



ID : P003  
Whale Purple - Rm 15

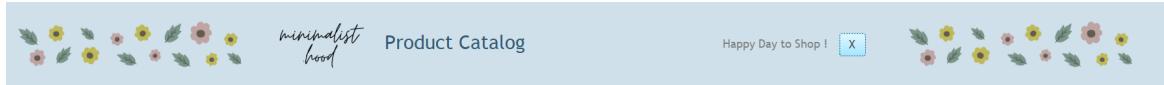


ID : P004  
Pink Crystal Baleine - Rm 15



ID : P005  
Ivy Swan - Rm 15

## 50% Discount



Get our signature jewellery today !

Get Discount :

**50%  
OFF**

FOR MIN. PURCHASE OF RM50  
**26-30 MAY**  
\*CAPPED AT RM 50



ID : P001  
Weave Red - Rm 10



ID : P002  
Silver Dazzle - Rm 10



ID : P003  
Whale Purple - Rm 15



ID : P004  
Pink Crystal Baleine - Rm 15



ID : P005  
Ivy Swan - Rm 15