

Avance Final de Proyecto

Semana: 10

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Teoría de Bases de Datos I

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1. Introducción

En el vertiginoso mundo de los bienes raíces, la eficiencia y la organización son elementos esenciales para el éxito. En respuesta a esta necesidad, presentamos el proyecto final de Teoría de Bases de Datos I: una solución integral diseñada para optimizar las operaciones de una oficina de bienes raíces enfocada en el mercado residencial.

Este proyecto se centra en el desarrollo de una aplicación web que brinda soporte a las interacciones entre agentes, compradores, vendedores y las propiedades mismas. Conscientes de la importancia de una gestión eficaz, hemos diseñado una base de datos sólida y funcional, capaz de satisfacer las demandas específicas de esta industria dinámica.

La oficina de bienes raíces para la cual se ha desarrollado este sistema se destaca por su enfoque en viviendas, lo que implica una diversidad de transacciones y un flujo constante de información. Además, considerando el contexto de una administración con limitados conocimientos informáticos, nos hemos esforzado por ofrecer una interfaz intuitiva y fácil de usar, que permita una adopción rápida y sin complicaciones.

A través de este proyecto, no solo hemos creado una infraestructura robusta para la gestión de datos, sino que también hemos desarrollado una serie de consultas SQL que ilustran la eficacia y la versatilidad del sistema propuesto. Con la entrega de este proyecto, buscamos no solo cumplir con los requisitos establecidos, sino también superar las expectativas y brindar una solución integral que contribuya al éxito continuo de la oficina de bienes raíces.

2. Especificación

La aplicación consiste en las operaciones de una oficina de bienes raíces. La oficina necesita realizar un seguimiento de los agentes, compradores, vendedores, propiedades en el mercado y propiedades vendidas recientemente. Esta oficina se centra en viviendas más que en bienes raíces comerciales. La administración de esta agencia inmobiliaria no tiene muchos conocimientos de informática. Se le pide que diseñe la base de datos, la complete con datos de muestra (la administración no le permitirá realizar pruebas con datos en vivo debido a preocupaciones de privacidad) y escriba varias consultas SQL para demostrar el sistema. La oficina de bienes raíces está solicitando aproximadamente 50 propuestas, que evaluará a partir del 12 de abril de 2024.

3. Documentación y sistema

3.1. Diseño lógico del modelo relacional (DDL) en PostgreSQL

3.1.1. Creación de Tablas

```
CREATE TABLE AGENTS (  
    IdentityNumber CHAR(13),  
    Name VARCHAR(50) NOT NULL,  
    Address VARCHAR(150) NOT NULL,  
    PhoneNumber INTEGER NOT NULL,  
    OfficePhone INTEGER NOT NULL,  
    PRIMARY KEY (IdentityNumber),  
    CHECK (PhoneNumber >= 10000000 AND PhoneNumber <= 99999999),  
    CHECK (OfficePhone >= 10000000 AND OfficePhone <= 99999999)  
);
```

```
CREATE TABLE SELLERS (  
    IdentityNumber CHAR(13),  
    Name VARCHAR(50) NOT NULL,  
    Address VARCHAR(150) NOT NULL,  
    PhoneNumber INTEGER NOT NULL,  
    PRIMARY KEY (IdentityNumber),  
    CHECK (PhoneNumber >= 10000000 AND PhoneNumber <= 99999999)  
);
```

```
CREATE TABLE BUYERS (  
    IdentityNumber CHAR(13),  
    Name VARCHAR(50) NOT NULL,  
    Address VARCHAR(150) NOT NULL,  
    PhoneNumber INTEGER NOT NULL,  
    PRIMARY KEY (IdentityNumber),  
    CHECK (PhoneNumber >= 10000000 AND PhoneNumber <= 99999999)
```

);

```
CREATE TABLE PROPERTIESONMARKET (  
    PropertyId SERIAL,  
    Name VARCHAR(50) NOT NULL,  
    City VARCHAR(20) NOT NULL,  
    Address VARCHAR(150) NOT NULL,  
    PhoneNumber INTEGER NOT NULL,  
    BedroomCount INTEGER NOT NULL,  
    Features VARCHAR(150) NOT NULL,  
    Price REAL NOT NULL,  
    PublicationDate DATE NOT NULL,  
    AgentIdentityNumber CHAR(13) NOT NULL,  
    SellerIdentityNumber CHAR(13) NOT NULL,  
    image VARCHAR(255) NOT NULL,  
    PRIMARY KEY (PropertyId),  
    CONSTRAINT FK_AGENTS_MARKET FOREIGN KEY (AgentIdentityNumber)  
REFERENCES AGENTS (IdentityNumber) ON DELETE CASCADE ON UPDATE CASCADE,  
    CONSTRAINT FK_SELLERS_MARKET FOREIGN KEY (SellerIdentityNumber)  
REFERENCES SELLERS (IdentityNumber) ON DELETE CASCADE ON UPDATE CASCADE,  
    CHECK (PhoneNumber >= 10000000 AND PhoneNumber <= 99999999)  
);
```

```
CREATE TABLE SOLDPROPERTIES (  
    PropertyId SERIAL,  
    Name VARCHAR(50) NOT NULL,  
    City VARCHAR(20) NOT NULL,  
    Address VARCHAR(150) NOT NULL,  
    PhoneNumber INTEGER NOT NULL,  
    BedroomCount INTEGER NOT NULL,  
    Features VARCHAR(150) NOT NULL,  
    Price REAL NOT NULL,  
    SalePrice REAL NOT NULL,
```

```

PublicationDate DATE NOT NULL,
SaleDate DATE NOT NULL,
AgentIdentityNumber CHAR(13) NOT NULL,
SellerIdentityNumber CHAR(13) NOT NULL,
BuyerIdentityNumber CHAR(13) NOT NULL,
SaleCommission REAL NOT NULL,
image VARCHAR(255) NOT NULL,
PRIMARY KEY (PropertyId),
CONSTRAINT FK_AGENTS_SOLD FOREIGN KEY (AgentIdentityNumber)
REFERENCES AGENTS (IdentityNumber) ON DELETE CASCADE ON UPDATE
CASCADE,
CONSTRAINT FK_SELLERS_SOLD FOREIGN KEY (SellerIdentityNumber)
REFERENCES SELLERS (IdentityNumber) ON DELETE CASCADE ON UPDATE
CASCADE,
CONSTRAINT FK_BUYERS_SOLD FOREIGN KEY (BuyerIdentityNumber)
REFERENCES BUYERS (IdentityNumber) ON DELETE CASCADE ON UPDATE
CASCADE,
CHECK (PhoneNumber >= 10000000 AND PhoneNumber <= 99999999),
CHECK (PublicationDate < SaleDate)
);

```

```

CREATE TABLE USERS (
IdentityNumber CHAR(13) PRIMARY KEY,
Username VARCHAR(20) UNIQUE,
Password VARCHAR(20) NOT NULL,
isAdmin BOOLEAN NOT NULL,
isSeller BOOLEAN NOT NULL,
isBuyer BOOLEAN NOT NULL,
isAgent BOOLEAN NOT NULL
);

```

```

CREATE TABLE BITACORA (
id_bitacora serial primary key,

```

```
    action VARCHAR(150) NOT NULL,  
    username varchar(20) NOT NULL,  
    date date NOT NULL,  
    time time NOT NULL  
);
```

3.1.2. Procedimiento Almacenados (CRUDs)

```
CREATE OR REPLACE PROCEDURE public.pdeleteagent(  
    IN in_identitynumber character)  
LANGUAGE 'plpgsql'  
AS $BODY$  
BEGIN  
    DELETE FROM agents  
        WHERE identitynumber = in_IdentityNumber;  
END;  
$BODY$;  
ALTER PROCEDURE public.pdeleteagent(character)  
    OWNER TO fer;
```

```
CREATE OR REPLACE PROCEDURE public.pdeletepom(  
    IN in_propertyid integer)  
LANGUAGE 'plpgsql'  
AS $BODY$  
BEGIN  
    DELETE FROM PropertiesOnMarket  
        WHERE propertyid = in_PropertyID;  
END;  
$BODY$;  
ALTER PROCEDURE public.pdeletepom(integer)  
    OWNER TO fer;
```



```
CREATE OR REPLACE PROCEDURE public.pdeleteseller(  
    IN in_identitynumber character)  
LANGUAGE 'plpgsql'  
AS $BODY$  
BEGIN  
    DELETE FROM sellers  
        WHERE identitynumber = in_IdentityNumber;  
END;  
$BODY$;  
ALTER PROCEDURE public.pdeleteseller(character)  
    OWNER TO fer;
```

```
CREATE OR REPLACE PROCEDURE public.pdeletesp(  
    IN in_propertyid integer)  
LANGUAGE 'plpgsql'  
AS $BODY$  
BEGIN  
    DELETE FROM SoldProperties  
        WHERE propertyid = in_PropertyID;  
END;  
$BODY$;  
ALTER PROCEDURE public.pdeletesp(integer)  
    OWNER TO fer;
```

```
CREATE OR REPLACE PROCEDURE public.pinsertagent(  
    IN identitynumber character,  
    IN name character varying,  
    IN address character varying,
```

```

        IN phonenumber integer,
        IN officephone integer)
LANGUAGE 'plpgsql'
AS $BODY$
BEGIN
    INSERT INTO agents (IdentityNumber, Name, Address, PhoneNumber, OfficePhone)
    VALUES (IdentityNumber, Name, Address, PhoneNumber, OfficePhone);
END;
$BODY$;
ALTER PROCEDURE public.pinsertagent(character, character varying, character varying, integer,
integer)
    OWNER TO fer;

```

```

CREATE OR REPLACE PROCEDURE public.pinsertpom(
    IN name character varying,
    IN city character varying,
    IN address character varying,
    IN phonenumber integer,
    IN bedroomcount integer,
    IN features character varying,
    IN price real,
    IN publicationdate date,
    IN agentidentitynumber character,
    IN selleridentitynumber character,
    IN image character varying)
LANGUAGE 'plpgsql'
AS $BODY$
BEGIN
    INSERT INTO PropertiesOnMarket (name, city, address, phonenumber, bedroomcount, features,
price,publicationdate, agentidentitynumber, selleridentitynumber, image)
    VALUES (name, city, address, phonenumber, bedroomcount, features, price,publicationdate,
agentidentitynumber, selleridentitynumber, image);

```

END;

\$BODY\$;

ALTER PROCEDURE public.pinsertpom(character varying, character varying, character varying,
integer, integer, character varying, real, date, character, character, character varying)

OWNER TO fer;

CREATE OR REPLACE PROCEDURE public.pinsertseller(

IN identitynumber character,

IN name character varying,

IN address character varying,

IN phonenummer integer)

LANGUAGE 'plpgsql'

AS \$BODY\$

BEGIN

INSERT INTO sellers (IdentityNumber, Name, Address, PhoneNumber)

VALUES (IdentityNumber, Name, Address, PhoneNumber);

END;

\$BODY\$;

ALTER PROCEDURE public.pinsertseller(character, character varying, character varying, integer)

OWNER TO fer;

CREATE OR REPLACE PROCEDURE public.pinsertsp(

IN p_propertyId integer,

IN name character varying,

IN city character varying,

IN address character varying,

IN phonenummer integer,

IN bedroomcount integer,

IN features character varying,

IN price real,

IN saleprice real,

```

        IN publicationdate date,
        IN saledate date,
        IN agentidentitynumber character,
        IN selleridentitynumber character,
        IN buyeridentitynumber character,
        IN salecommission real,
        IN image character varying)

LANGUAGE 'plpgsql'

AS $BODY$

BEGIN

    INSERT INTO SoldProperties (name, city, address, phonenumber, bedroomcount, features, price,
saleprice, publicationdate, saledate, agentidentitynumber, selleridentitynumber, buyeridentitynumber,
salecommission, image)

    VALUES (name, city, address, phonenumber, bedroomcount, features, price, saleprice,
publicationdate, saledate, agentidentitynumber, selleridentitynumber, buyeridentitynumber,
salecommission, image);

    CALL pdeletepom(p_propertyId);

END;

$BODY$;

ALTER PROCEDURE public.pinsertsp(integer, character varying, character varying, character
varying, integer, integer, character varying, real, real, date, date, character, character, character, real,
character varying)

    OWNER TO fer;

CREATE OR REPLACE PROCEDURE public.pmodifyagent(

    IN in_identitynumber character,
    IN in_name character varying,
    IN in_address character varying,
    IN in_phonenumber integer,
    IN in_officephone integer)

LANGUAGE 'plpgsql'

AS $BODY$

BEGIN

    UPDATE agents

```

SET

name = in_Name,

address = in_Address,

phoneNumber = in_PhoneNumber,

officephone = in_OfficePhone

WHERE identitynumber = in_IdentityNumber;

END;

\$BODY\$;

ALTER PROCEDURE public.pmodifyagent(character, character varying, character varying, integer, integer)

OWNER TO fer;

CREATE OR REPLACE PROCEDURE public.pmodifypom(

IN in_propertyid integer,

IN in_name character varying,

IN in_city character varying,

IN in_address character varying,

IN in_phonenumber integer,

IN in_bedroomcount integer,

IN in_features character varying,

IN in_price real,

IN in_publicationdate date,

IN in_agentidentitynumber character,

IN in_selleridentitynumber character,

IN in_image character varying)

LANGUAGE 'plpgsql'

AS \$BODY\$

BEGIN

UPDATE PropertiesOnMarket

SET

name = in_name,

city = in_city,

```

        address = in_address,
        phoneNumber = in_phonenumber,
        bedroomcount = in_bedroomcount,
        features = in_features,
        price = in_price,
        publicationdate = in_publicationdate,
        agentidentitynumber = in_agentidentitynumber,
        selleridentitynumber = in_selleridentitynumber,
        image = in_image
    WHERE propertyid = in_propertyid;
END;
$BODY$;
ALTER PROCEDURE public.pmodifypom(integer, character varying, character varying, character
varying, integer, integer, character varying, real,date, character, character, character varying)
    OWNER TO fer;

```

```

CREATE OR REPLACE PROCEDURE public.pmodifyseller(
    IN in_identitynumber character,
    IN in_name character varying,
    IN in_address character varying,
    IN in_phonenumber integer)
LANGUAGE 'plpgsql'
AS $BODY$
BEGIN
    UPDATE sellers
    SET
        name = in_name,
        address = in_address,
        phoneNumber = in_phonenumber
    WHERE identitynumber = in_identitynumber;
END;
$BODY$;

```

```
ALTER PROCEDURE public.pmodifyseller(character, character varying, character varying, integer)
    OWNER TO fer;
```

```
CREATE OR REPLACE PROCEDURE public.pmodifysp(
    IN in_propertyid integer,
    IN in_name character varying,
    IN in_city character varying,
    IN in_address character varying,
    IN in_phonenumber integer,
    IN in_bedroomcount integer,
    IN in_features character varying,
    IN in_price real,
    IN in_saleprice real,
    IN in_publicationdate date,
    IN in_saledate date,
    IN in_agentidentitynumber character,
    IN in_selleridentitynumber character,
    IN in_buyeridentitynumber character,
    IN in_salecommission real,
    IN in_image character varying)
```

```
LANGUAGE 'plpgsql'
```

```
AS $BODY$
```

```
BEGIN
```

```
    UPDATE SoldProperties
```

```
    SET
```

```
        name = in_name,
```

```
        city = in_city,
```

```
        address = in_address,
```

```
        phoneNumber = in_phonenumber,
```

```
        bedroomcount = in_bedroomcount,
```

```
        features = in_features,
```

```
        price = in_price,
```

```

        saleprice = in_saleprice,
        publicationdate = in_publicationdate,
        saledate = in_saledate,
        agentidentitynumber = in_agentidentitynumber,
        selleridentitynumber = in_selleridentitynumber,
        buyeridentitynumber = in_buyeridentitynumber,
        salecommission = in_salecommission,
        image = in_image

    WHERE propertyid = in_propertyid;

END;

$BODY$;

ALTER PROCEDURE public.pmodifysp(integer, character varying, character varying, character
varying, integer, integer, character varying, real, real,date, date, character, character, character, real,
character varying)

    OWNER TO fer;

CREATE OR REPLACE PROCEDURE public.pinsertbuyer(

    IN identitynumber character,
    IN name character varying,
    IN address character varying,
    IN phonenumber integer)

LANGUAGE 'plpgsql'

AS $BODY$

BEGIN

    INSERT INTO buyers (IdentityNumber, Name, Address, PhoneNumber)

    VALUES (IdentityNumber, Name, Address, PhoneNumber);

END;

$BODY$;

ALTER PROCEDURE public.pinsertbuyer(character, character varying, character varying, integer)

    OWNER TO fer;

CREATE OR REPLACE PROCEDURE public.pdeletebuyer(

    IN in_identitynumber character)

```



```

LANGUAGE 'plpgsql'
AS $BODY$
BEGIN
    DELETE FROM buyers
        WHERE identitynumber = in_IdentityNumber;
END;
$BODY$;
ALTER PROCEDURE public.pdeletebuyer(character)
    OWNER TO fer;

CREATE OR REPLACE PROCEDURE public.pmodifybuyer(
    IN in_identitynumber character,
    IN in_name character varying,
    IN in_address character varying,
    IN in_phonenumber integer)
LANGUAGE 'plpgsql'
AS $BODY$
BEGIN
    UPDATE buyers
    SET
        name = in_name,
        address = in_address,
        phoneNumber = in_phonenumber
    WHERE identitynumber = in_identitynumber;
END;
$BODY$;
ALTER PROCEDURE public.pmodifybuyer(character, character varying, character varying, integer)
    OWNER TO fer;

```

3.1.3. Vistas/Consultas

1. Cantidad de ventas por agente.

```
CREATE OR REPLACE VIEW public.vsalesagent
AS
SELECT ag.identitynumber,
       ag.name,
       count(sp.agentidentitynumber) AS amount_of_sales_per_agent
FROM agents ag
     LEFT JOIN soldproperties sp ON ag.identitynumber = sp.agentidentitynumber
GROUP BY ag.identitynumber;
```

```
ALTER TABLE public.vsalesagent
OWNER TO fer;
```

2. Cantidad de ventas por vendedor.

```
CREATE OR REPLACE VIEW public.vsalesseller
AS
SELECT se.identitynumber,
       se.name,
       count(sp.selleridentitynumber) AS amount_of_sales_per_seller
FROM sellers se
     LEFT JOIN soldproperties sp ON se.identitynumber = sp.selleridentitynumber
GROUP BY se.identitynumber;
```

```
ALTER TABLE public.vsalesseller
OWNER TO fer;
```

3. Cantidad de compras por comprador.

```
CREATE OR REPLACE VIEW public.vbuyerurchases
AS
SELECT bu.identitynumber,
       bu.name,
       count(sp.buyeridentitynumber) AS amount_of_sales_per_buyer
FROM buyers bu
```

```
LEFT JOIN soldproperties sp ON bu.identitynumber = sp.buyeridentitynumber  
GROUP BY bu.identitynumber;
```

```
ALTER TABLE public.vbuyerpurchases  
OWNER TO fer;
```

4. Ventas por ubicación.

```
CREATE OR REPLACE VIEW public.vcitysales  
AS  
SELECT city,  
       count(*) AS count  
FROM soldproperties sp  
GROUP BY city;
```

```
ALTER TABLE public.vcitysales  
OWNER TO fer;
```

5. Ventas por precio de propiedad.

```
CREATE OR REPLACE VIEW public.vsalesprice  
AS  
SELECT saleprice,  
       count(*) AS count  
FROM soldproperties sp  
GROUP BY saleprice;
```

```
ALTER TABLE public.vsalesprice  
OWNER TO fer;
```

6. Ventas de propiedades por características (por ejemplo, cantidad de habitaciones, si tiene piscina, etc.).

```
CREATE OR REPLACE VIEW public.vsalesfeature  
AS  
SELECT bedroomcount,
```

```

propertyid,
name,
CASE
    WHEN lower(features::text) ~~ '%have pool%':text THEN 'Yes':text
    ELSE 'No':text
END AS have_pool
FROM soldproperties
ORDER BY bedroomcount;

```

```

ALTER TABLE public.vsalesfeature
OWNER TO fer;

```

7. Agente que vendió la mayor cantidad de propiedades en el año por valor total.

```

CREATE OR REPLACE FUNCTION public.fbestsellingagent(
    useryear integer)

    RETURNS TABLE(name character varying, identitynumber character, sale_year numeric,
total_sale real)

    LANGUAGE 'plpgsql'

    COST 100

    VOLATILE PARALLEL UNSAFE

    ROWS 1000

AS $BODY$
BEGIN
    RETURN QUERY
        SELECT vBestSellingAgent.name, vBestSellingAgent.identitynumber,
vBestSellingAgent.saleyear, vBestSellingAgent.total_sale
        FROM vBestSellingAgent
        WHERE useryear = saleyear
        LIMIT 1;
END;
$BODY$;

```

```
ALTER FUNCTION public.fbestsellingagent(integer)
```

```
OWNER TO fer;
```

```
CREATE OR REPLACE VIEW public.vbestsellingagent
```

```
AS
```

```
SELECT agents.name,
```

```
agents.identitynumber,
```

```
EXTRACT(year FROM sp.saledate) AS saleyear,
```

```
sum(sp.saleprice) AS total_sale
```

```
FROM agents
```

```
JOIN SoldProperties sp ON agents.identitynumber = sp.agentidentitynumber
```

```
GROUP BY agents.identitynumber, (EXTRACT(year FROM sp.saledate))
```

```
ORDER BY (EXTRACT(year FROM sp.saledate)), (sum(sp.saleprice)) DESC;
```

```
ALTER TABLE public.vbestsellingagent
```

```
OWNER TO fer;
```

8. Para cada agente, calcule el precio de venta promedio de las propiedades vendidas en el año y el tiempo promedio que la propiedad estuvo en el mercado.

```
CREATE OR REPLACE FUNCTION public.fagentsperformance(
```

```
IN useryear integer
```

```
)
```

```
RETURNS TABLE (
```

```
name character varying (50),
```

```
identitynumber character(13),
```

```
sale_year numeric,
```

```
average_selling_price double precision,
```

```
average_time_on_market numeric
```

```
) AS $BODY$
```

```
BEGIN
```

RETURN QUERY

```
SELECT vAgentsPerformance.name, vAgentsPerformance.identitynumber,  
vAgentsPerformance.saleyear, vAgentsPerformance.average_selling_price,  
vAgentsPerformance.average_time_on_market
```

```
FROM vAgentsPerformance
```

```
WHERE useryear = saleyear;
```

END;

\$BODY\$

LANGUAGE 'plpgsql';

ALTER FUNCTION public.fagentsperformance(integer)

OWNER TO fer;

CREATE OR REPLACE VIEW public.vagentsperformance

AS

```
SELECT agents.name,
```

```
agents.identitynumber,
```

```
EXTRACT(year FROM sp.saledate) AS saleyear,
```

```
avg(sp.saleprice) AS average_selling_price,
```

```
avg(sp.saledate - sp.publicationdate) AS average_time_on_market
```

```
FROM agents
```

```
JOIN SoldProperties sp ON agents.identitynumber = sp.agentidentitynumber
```

```
GROUP BY agents.identitynumber, (EXTRACT(year FROM sp.saledate))
```

```
ORDER BY (EXTRACT(year FROM sp.saledate)), (sum(sp.saleprice));
```

ALTER TABLE public.vagentsperformance

OWNER TO fer;

3.1.4. Otras vistas

1. Todas las propiedades en el mercado que tiene un agente

CREATE OR REPLACE VIEW public.vallpomAgent

AS

```

SELECT pom.propertyid,
       pom.name,
       pom.address,
       pom.city,
       pom.phonenumber,
       pom.bedroomcount,
       pom.features,
       pom.price,
       to_char(pom.publicationdate::timestamp with time zone, 'YYYY-MM-DD'::text) AS
publicationdate,
       image,
       ag.name as agentName,
       ag.OfficePhone as agentNumber
FROM PropertiesOnMarket pom
INNER JOIN agents ag
ON ag.IdentityNumber= pom.AgentIdentityNumber;

ALTER TABLE public.vallpomAgent
OWNER TO fer;

```

2. Enseña todas las propiedades en el mercado

```

CREATE OR REPLACE VIEW public.vallpom
AS
SELECT propertyid,
       name,
       address,
       city,
       phonenumber,
       bedroomcount,
       features,
       price,
       to_char(publicationdate::timestamp with time zone, 'YYYY-MM-DD'::text) AS publicationdate,

```

```
agentidentitynumber,  
selleridentitynumber,  
image  
FROM PropertiesOnMarket;
```

```
ALTER TABLE public.vallpom  
OWNER TO fer;
```

3. Enseña todas las propiedades vendidas

```
CREATE OR REPLACE VIEW public.vallsp  
AS  
SELECT propertyid,  
name,  
address,  
city,  
phonenumber,  
bedroomcount,  
features,  
price,  
saleprice,  
to_char(publicationdate::timestamp with time zone, 'YYYY-MM-DD'::text) AS publicationdate,  
to_char(saledate::timestamp with time zone, 'YYYY-MM-DD'::text) AS saledate,  
agentidentitynumber,  
selleridentitynumber,  
buyeridentitynumber,  
salecommission,  
image  
FROM soldproperties;  
  
ALTER TABLE public.vallsp  
OWNER TO fer;
```


4. Enseña todos los compradores

```
CREATE OR REPLACE VIEW public.vallbuyers
```

```
AS
```

```
SELECT identitynumber,
```

```
    name,
```

```
    address,
```

```
    phonenumber
```

```
FROM buyers;
```

```
ALTER TABLE public.vallbuyers
```

```
    OWNER TO fer;
```

5. Enseña todos los agentes

```
CREATE OR REPLACE VIEW public.vallagents
```

```
AS
```

```
SELECT identitynumber,
```

```
    name,
```

```
    address,
```

```
    phonenumber,
```

```
    officephone
```

```
FROM agents;
```

```
ALTER TABLE public.vallagents
```

```
    OWNER TO fer;
```

6. Enseña todos los vendedores

```
CREATE OR REPLACE VIEW public.vallsellers
```

```
AS
```

```
SELECT identitynumber,
```

```
    name,
```

```
    address,
```

```
    phonenumber
```

FROM sellers;

ALTER TABLE public.vallsellers

OWNER TO fer;

7. Enseña la bitácora

CREATE OR REPLACE VIEW public.vallbinnacle

AS

SELECT bi.id_bitacora,

bi.action,

bi.username,

to_char(bi.date::timestamp with time zone, 'YYYY-MM-DD'::text) AS date,

bi."time"

FROM bitacora as bi;

ALTER TABLE public.vallbinnacle

OWNER TO fer;

3.1.5. Funciones

1. Enseña las propiedades en el mercado que tiene un agente

CREATE OR REPLACE FUNCTION public.fPropMarketPerAgent(

userid character)

RETURNS TABLE(propertyid integer, name character varying, address character varying, city character varying, phonenumber integer, bedroomcount integer, features character varying, price real, publicationdate text, image character varying, agentname character varying, agentNumber integer)

LANGUAGE 'plpgsql'

COST 100

VOLATILE PARALLEL UNSAFE

ROWS 1000

AS \$BODY\$

BEGIN

```

RETURN QUERY
SELECT
    pom.propertyid,
    pom.name,
    pom.address,
    pom.city,
    pom.phonenumber,
    pom.bedroomcount,
    pom.features,
    pom.price,
    to_char(pom.publicationdate::timestamp with time zone, 'YYYY-MM-DD'::text) AS
publicationdate,
    pom.image,
    ag.name as agentname,
    ag.OfficePhone as agentNumber
FROM PropertiesOnMarket pom
INNER JOIN agents ag
ON pom.AgentIdentityNumber = ag.IdentityNumber
WHERE pom.AgentIdentityNumber = userid;
END;
$BODY$;

```

```

ALTER FUNCTION public.fPropMarketPerAgent(character)
OWNER TO fer;

```

2. Enseña las propiedades en el mercado que tiene un vendedor

```

CREATE OR REPLACE FUNCTION public.fPropMarketPerSeller(
    userid character)

RETURNS TABLE(propertyid integer, name character varying, address character varying, city
character varying, phonenumber integer, bedroomcount integer, features character varying, price real,
publicationdate text, image character varying, agentname character varying, agentNumber integer)

LANGUAGE 'plpgsql'

COST 100

```

VOLATILE PARALLEL UNSAFE

ROWS 1000

AS \$BODY\$

BEGIN

RETURN QUERY

SELECT

 pom.propertyid,

 pom.name,

 pom.address,

 pom.city,

 pom.phonenumber,

 pom.bedroomcount,

 pom.features,

 pom.price,

 to_char(pom.publicationdate::timestamp with time zone, 'YYYY-MM-DD'::text) AS
publicationdate,

 pom.image,

 ag.name as agentname,

 ag.OfficePhone as agentNumber

FROM PropertiesOnMarket pom

INNER JOIN agents ag

ON pom.AgentIdentityNumber = ag.IdentityNumber

WHERE pom.SellerIdentityNumber = userid;

END;

\$BODY\$;

ALTER FUNCTION public.fPropMarketPerSeller(character)

OWNER TO fer;

3. Enseña las propiedades vendidas que tiene un agente

CREATE OR REPLACE FUNCTION public.fpropsellsperAgent(

userid character)

RETURNS TABLE(propertyid integer, name character varying, address character varying, city character varying, phonenumber integer, bedroomcount integer, features character varying, price real, saleprice real, publicationdate text, saledate text, salecommission real, image character varying)

LANGUAGE 'plpgsql'

COST 100

VOLATILE PARALLEL UNSAFE

ROWS 1000

AS \$BODY\$

BEGIN

RETURN QUERY

SELECT

SoldProperties.propertyid,

SoldProperties.name,

SoldProperties.address,

SoldProperties.city,

SoldProperties.phonenumber,

SoldProperties.bedroomcount,

SoldProperties.features,

SoldProperties.price,

SoldProperties.saleprice,

to_char(SoldProperties.publicationdate::timestamp with time zone, 'YYYY-MM-DD'::text) AS
publicationdate,

to_char(SoldProperties.saledate::timestamp with time zone, 'YYYY-MM-DD'::text) AS saledate,

SoldProperties.salecommission,

SoldProperties.image

FROM SoldProperties

WHERE SoldProperties.AgentIdentityNumber = userid;

END;

\$BODY\$;

ALTER FUNCTION public.fpropsellsperAgent(character)

OWNER TO fer;

4. Enseña las propiedades vendidas que tiene un vendedor

```
CREATE OR REPLACE FUNCTION public.fpropsellsperseller(  
    userid character)  
  
    RETURNS TABLE(propertyid integer, name character varying, address character varying, city  
character varying, phonenumber integer, bedroomcount integer, features character varying, price real,  
saleprice real, publicationdate text, saledate text, salecommission real, image character varying)  
  
    LANGUAGE 'plpgsql'  
  
    COST 100  
  
    VOLATILE PARALLEL UNSAFE  
  
    ROWS 1000  
  
AS $BODY$  
BEGIN  
    RETURN QUERY  
    SELECT  
        SoldProperties.propertyid,  
        SoldProperties.name,  
        SoldProperties.address,  
        SoldProperties.city,  
        SoldProperties.phonenumber,  
        SoldProperties.bedroomcount,  
        SoldProperties.features,  
        SoldProperties.price,  
        SoldProperties.saleprice,  
        to_char(SoldProperties.publicationdate::timestamp with time zone, 'YYYY-MM-DD'::text) AS  
publicationdate,  
        to_char(SoldProperties.saledate::timestamp with time zone, 'YYYY-MM-DD'::text) AS saledate,  
        SoldProperties.salecommission,  
        SoldProperties.image  
    FROM SoldProperties  
    WHERE SoldProperties.SellerIdentityNumber = userid;
```

END;

\$BODY\$;

ALTER FUNCTION public.fpropsellsperseller(character)

OWNER TO fer;

3.1.6. Triggers

1. Function trigger para el CRUD de agente

Create function agentData()returns Trigger

as

\$\$

Declare

Usuario varchar(20) := current_setting('myapp.username');

Fecha date := current_date;

Tiempo time := current_time;

begin

if TG_OP= 'INSERT' then

insert into "bitacora"(action, username, date, time) values(('Se creo el agente: '||new.name||' con id '||new.identitynumber),Usuario, Fecha, Tiempo);

elsif TG_OP = 'UPDATE' then

insert into "bitacora"(action, username, date, time) values(('Se modifiko el agente: '||old.name||' con id '||old.identitynumber),Usuario, Fecha, Tiempo);

elseif TG_OP = 'DELETE' then

insert into "bitacora"(action, username, date, time) values(('Se elimino el agente: '||old.name||' con id '||old.identitynumber),Usuario, Fecha, Tiempo);

end if;

return new;

end

\$\$

Language plpgsql;

Create trigger TagentUpdate AFTER update on agents

for each row

execute procedure agentData();

Create trigger TagentInsert after insert on agents

for each row

execute procedure agentData();

Create trigger TagentDelete after delete on agents

for each row

execute procedure agentData();

2. Function trigger para el CRUD de Propiedades en el Mercado

Create function POMData()returns Trigger

as

\$\$

Declare

Usuario varchar(20) := current_setting('myapp.username');

Fecha date := current_date;

Tiempo time := current_time;

begin

if TG_OP= 'INSERT' then

insert into "bitacora"(action, username, date, time) values(('Se creo una nueva propiedad en mercado
con id: '||new.propertyid),Usuario, Fecha, Tiempo);


```

elsif TG_OP = 'UPDATE' then

insert into "bitacora"(action, username, date, time) values(('Se modifiko la propiedad(en mercado):
'||old.propertyid),Usuario, Fecha, Tiempo);

elseif TG_OP = 'DELETE' then

insert into "bitacora"(action, username, date, time) values(('Se elimino la propiedad(en mercado):
'||old.propertyid),Usuario, Fecha, Tiempo);

end if;

return new;

end

$$

Language plpgsql;

```

```

Create trigger TPOMUpdate AFTER update on PropertiesOnMarket
for each row
execute procedure POMData();

```

```

Create trigger TPOMInsert after insert on PropertiesOnMarket
for each row
execute procedure POMData();

```

```

Create trigger TPOMDelete after delete on PropertiesOnMarket
for each row
execute procedure POMData();

```

3. Function trigger para el CRUD de Propiedades Vendidas

```

Create function SPData()returns Trigger
as
$$
Declare
Usuario varchar(20) := current_setting('myapp.username');

```

Fecha date := current_date;

Tiempo time := current_Time;

begin

if TG_OP= 'INSERT' then

insert into "bitacora"(action, username, date, time) values(('Se creo una nueva propiedad vendida con id: '||new.propertyid),Usuario, Fecha, Tiempo);

elsif TG_OP = 'UPDATE' then

insert into "bitacora"(action, username, date, time) values(('Se modifiko la propiedad(vendida): '||old.propertyid),Usuario, Fecha, Tiempo);

elseif TG_OP = 'DELETE' then

insert into "bitacora"(action, username, date, time) values(('Se elimino la propiedad(vendida): '||old.propertyid),Usuario, Fecha, Tiempo);

end if;

return new;

end

\$\$

Language plpgsql;

Create trigger TSPUpdate AFTER update on SoldProperties

for each row

execute procedure SPData();

Create trigger TSPInsert after insert on SoldProperties

for each row

execute procedure SPData();

Create trigger TSPDelete after delete on SoldProperties

```
for each row
execute procedure SPData();
```

4. Function trigger para el CRUD del comprador

```
CREATE FUNCTION buyersData()RETURNS TRIGGER
AS
$$
DECLARE
Usuario varchar(20) := current_setting('myapp.username');
Fecha date := current_date;
Tiempo time := current_time;

BEGIN

IF TG_OP= 'INSERT' THEN

INSERT INTO "bitacora"(action, username, date, time) VALUES(('Se creo el comprador:
'||new.name||' con id '||new.identitynumber),Usuario, Fecha, Tiempo);


ELSIF TG_OP = 'UPDATE' THEN

INSERT INTO "bitacora"(action, username, date, time) VALUES(('Se modifiko el comprador:
'||old.name||' con id '||old.identitynumber),Usuario, Fecha, Tiempo);


ELSEIF TG_OP = 'DELETE' THEN

INSERT INTO "bitacora"(action, username, date, time) VALUES(('Se elimino el comprador:
'||old.name||' con id '||old.identitynumber),Usuario, Fecha, Tiempo);

END IF;

RETURN NEW;

END
$$
LANGUAGE plpgsql;

CREATE TRIGGER tbuyerInsert AFTER INSERT ON buyers
```

FOR EACH ROW

EXECUTE PROCEDURE buyersData();

CREATE TRIGGER tbuyerUpdate AFTER UPDATE ON buyers

FOR EACH ROW

EXECUTE PROCEDURE buyersData();

CREATE TRIGGER tbuyerDelete AFTER DELETE ON buyers

FOR EACH ROW

EXECUTE PROCEDURE buyersData();

5. Function trigger para el CRUD de vendedores

CREATE FUNCTION sellersData()RETURNS TRIGGER

AS

\$\$

DECLARE

Usuario varchar(20) := current_setting('myapp.username');

Fecha date := current_date;

Tiempo time := current_time;

BEGIN

IF TG_OP= 'INSERT' THEN

INSERT INTO "bitacora"(action, username, date, time) VALUES(('Se creo el vendedor:
'||new.name||' con id '||new.identitynumber),Usuario, Fecha, Tiempo);

ELSIF TG_OP = 'UPDATE' THEN

INSERT INTO "bitacora"(action, username, date, time) VALUES(('Se modifico el vendedor:
'||old.name||' con id '||old.identitynumber),Usuario, Fecha, Tiempo);

ELSEIF TG_OP = 'DELETE' THEN

INSERT INTO "bitacora"(action, username, date, time) VALUES(('Se elimino el vendedor:
'||old.name||' con id '||old.identitynumber),Usuario, Fecha, Tiempo);

END IF;

RETURN NEW;

END

\$\$

LANGUAGE plpgsql;

CREATE TRIGGER tsellerInsert AFTER INSERT ON sellers

FOR EACH ROW

EXECUTE PROCEDURE sellersData();

CREATE TRIGGER tsellerUpdate AFTER UPDATE ON sellers

FOR EACH ROW

EXECUTE PROCEDURE sellersData();

CREATE TRIGGER tsellerDelete AFTER DELETE ON sellers

FOR EACH ROW

EXECUTE PROCEDURE sellersData();

4. Anexos

4.1. Manual del Usuario

Requerimientos:

1. Clonar el repositorio de Github (https://github.com/fercast711/final_project_db1.git)
2. Abrir el código con Visual Studio Code
3. Verificar la conexión a la base de datos local y la base datos en AWS en el .env
4. Ctrl+J para abrir una terminal y levantar el Backend con los comandos: cd backend -> npm i -> npm run dev
5. Ctrl+J para abrir una nueva terminal y levantar el Frontend con los comandos: cd frontend -> npm i -> npm run dev
6. Ingresar al link generado al levantar el Frontend (Debería ser similar a este: <http://localhost:5173/>)

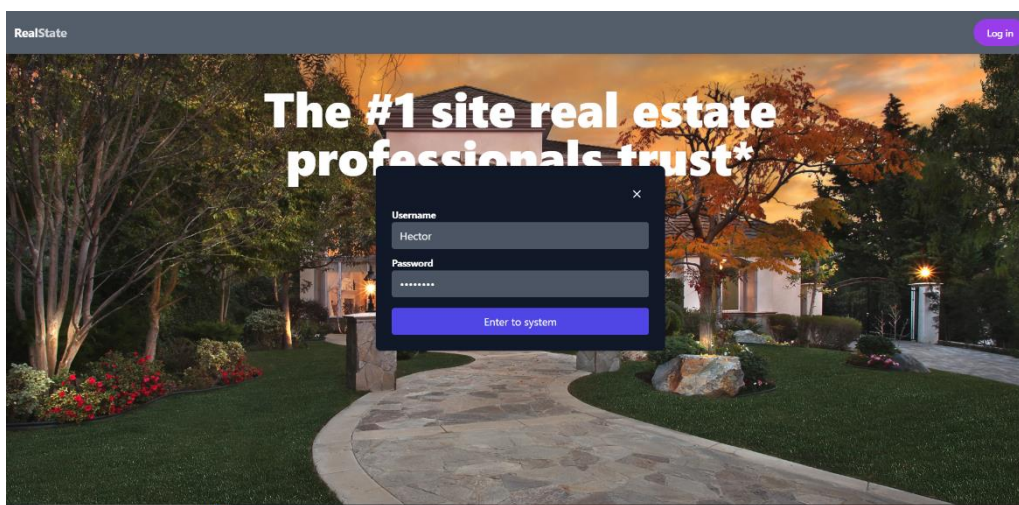
4.1.1. Rol de Administrador

Login Admin:

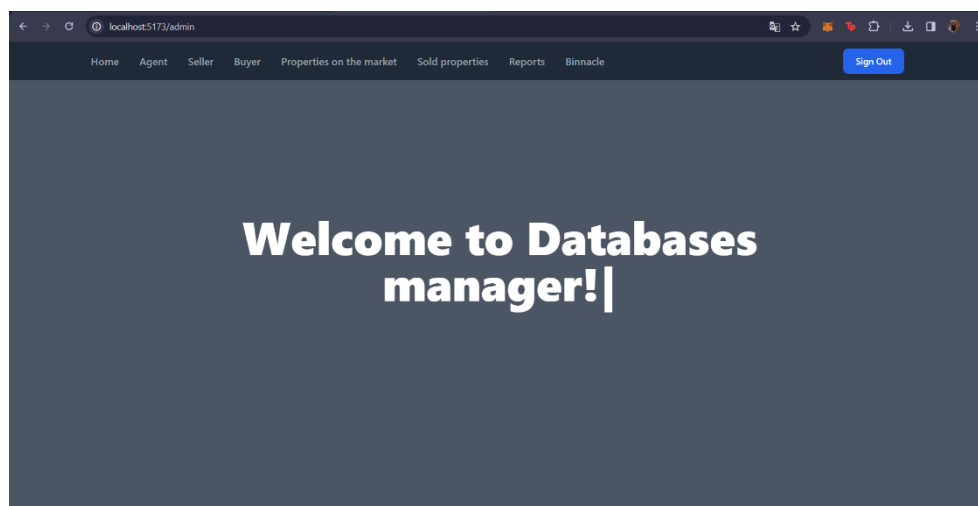
Ingresa al link: <http://localhost:5173/>

Pasos:

1. Click en el botón “Log In”
2. Ingresar su nombre usuario, en este caso el de los administradores (Hector, fercast, Tatiana o Andrea)
3. Ingresar la contraseña “12345678”
4. Click en el botón “Enter to System”

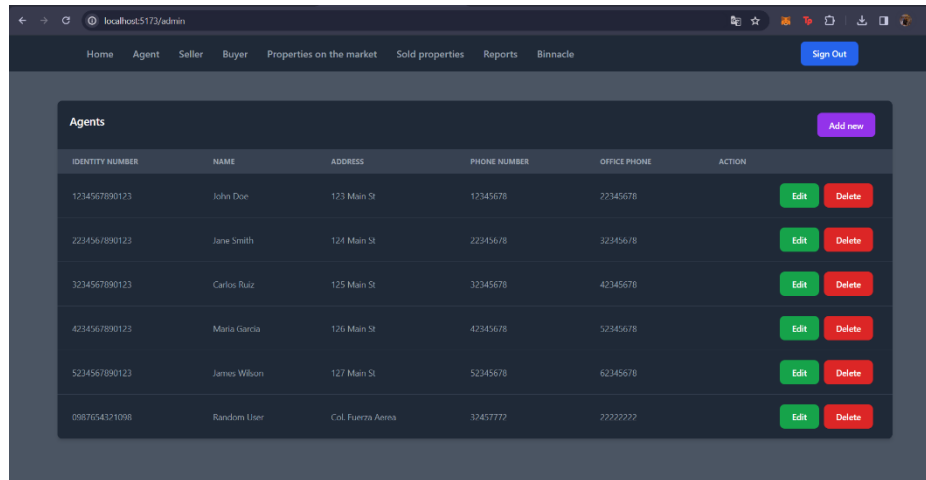


Pantalla Home:



CRUD Agents:

Click en el botón “Agent”



The screenshot shows a web application interface with a navigation bar at the top containing links: Home, Agent, Seller, Buyer, Properties on the market, Sold properties, Reports, and Binnacle. A 'Sign Out' button is on the right. The main content area is titled 'Agents' and features a table with the following data:

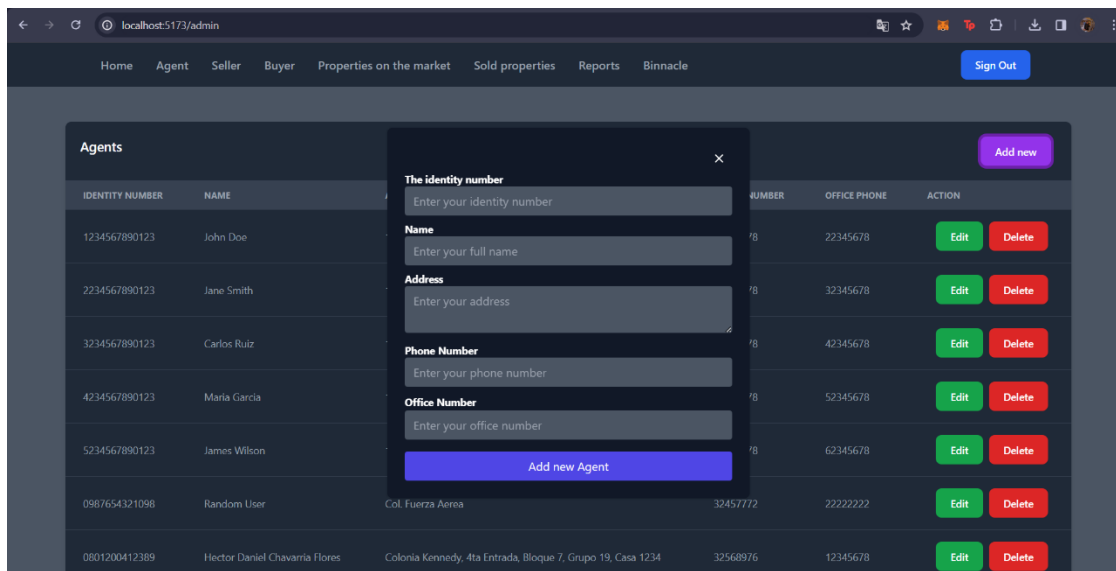
| IDENTITY NUMBER | NAME | ADDRESS | PHONE NUMBER | OFFICE PHONE | ACTION |
|-----------------|--------------|-------------------|--------------|--------------|---|
| 1234567890123 | John Doe | 123 Main St | 12345678 | 22345678 | <button>Edit</button> <button>Delete</button> |
| 2234567890123 | Jane Smith | 124 Main St | 22345678 | 32345678 | <button>Edit</button> <button>Delete</button> |
| 3234567890123 | Carlos Ruiz | 125 Main St | 32345678 | 42345678 | <button>Edit</button> <button>Delete</button> |
| 4234567890123 | Maria Garcia | 126 Main St | 42345678 | 52345678 | <button>Edit</button> <button>Delete</button> |
| 5234567890123 | James Wilson | 127 Main St | 52345678 | 62345678 | <button>Edit</button> <button>Delete</button> |
| 0987654321098 | Random User | Col. Fuerza Aerea | 32457772 | 22222222 | <button>Edit</button> <button>Delete</button> |

An 'Add new' button is located in the top right corner of the table area.

Ingresar un nuevo agente:

Pasos:

1. Click en el botón morado “Add new”
2. Ingresar el número de identidad del agente
3. Ingresar el nombre completo del agente
4. Ingresar la dirección detallada del agente
5. Ingresar el número de teléfono del agente
6. Ingresar el número de oficina del agente
7. Click en el botón azul “Add new Agent”



The screenshot shows the same 'Agents' table as before, but with a modal form open in the center. The modal is titled 'The identity number' and contains the following fields:

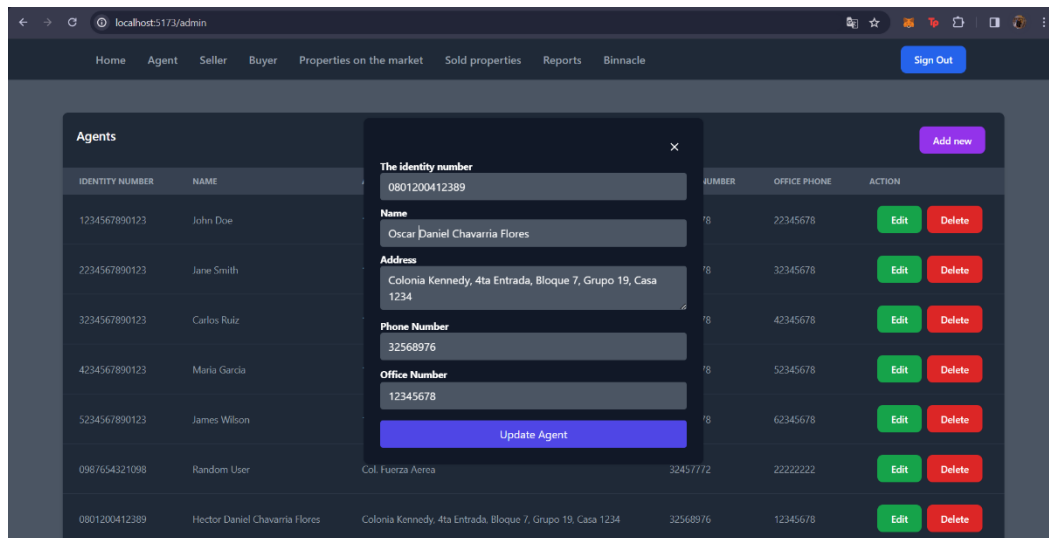
- The identity number**: Enter your identity number
- Name**: Enter your full name
- Address**: Enter your address
- Phone Number**: Enter your phone number
- Office Number**: Enter your office number

At the bottom of the modal is a blue button labeled 'Add new Agent'.

Editar la información de un agente:

Pasos:

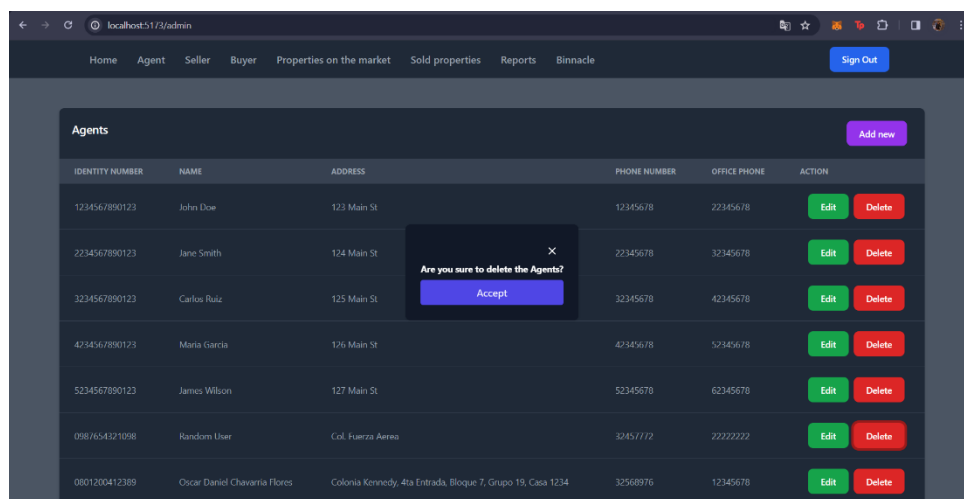
1. Click en el botón verde “Edit”
2. Editar la información necesaria
3. Click en el botón azul “Update Agent”



Eliminar un agente:

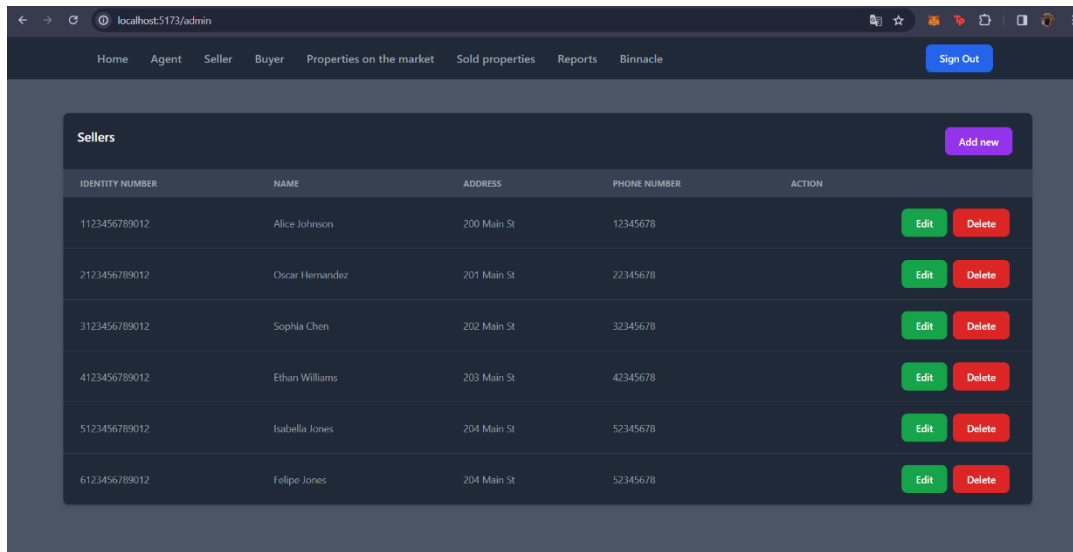
Pasos:

1. Click en el botón rojo “Delete”
2. Click en el botón azul “Accept” si está de acuerdo en que se elimine ese agente



CRUD Seller:

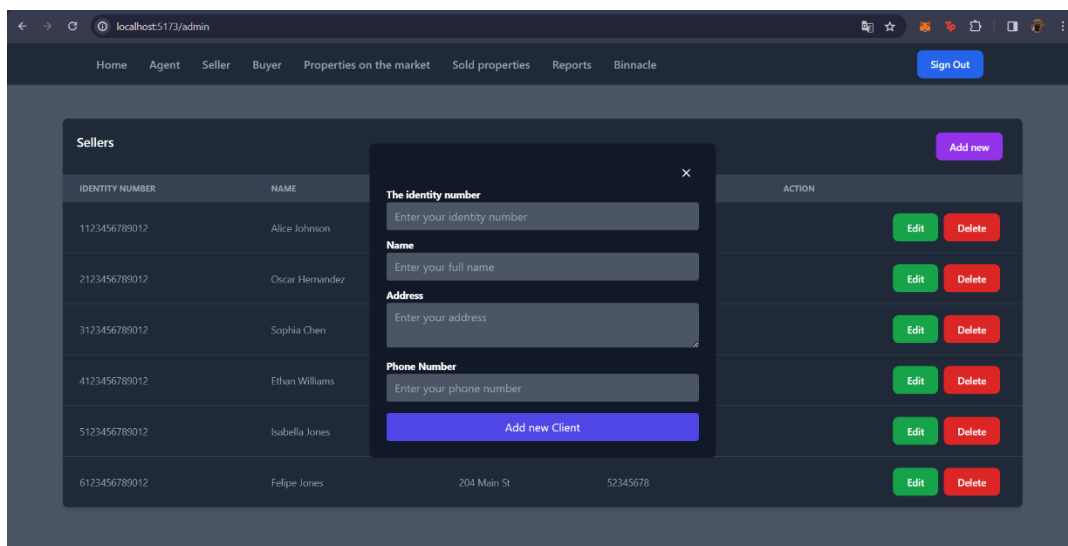
Click en el botón “Seller”



Ingresar un nuevo vendedor:

Pasos:

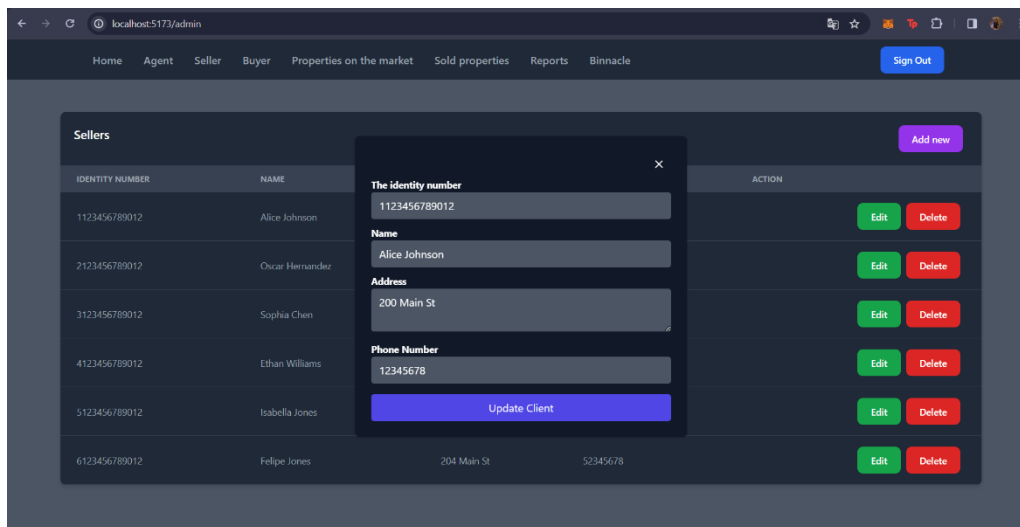
1. Click en el botón morado “Add new”
2. Ingresar el número de identidad del vendedor
3. Ingresar el nombre completo del vendedor
4. Ingresar la dirección detallada del vendedor
5. Ingresar el número de teléfono del vendedor
6. Click en el botón azul “Add new Client”



Editar la información de un vendedor:

Pasos:

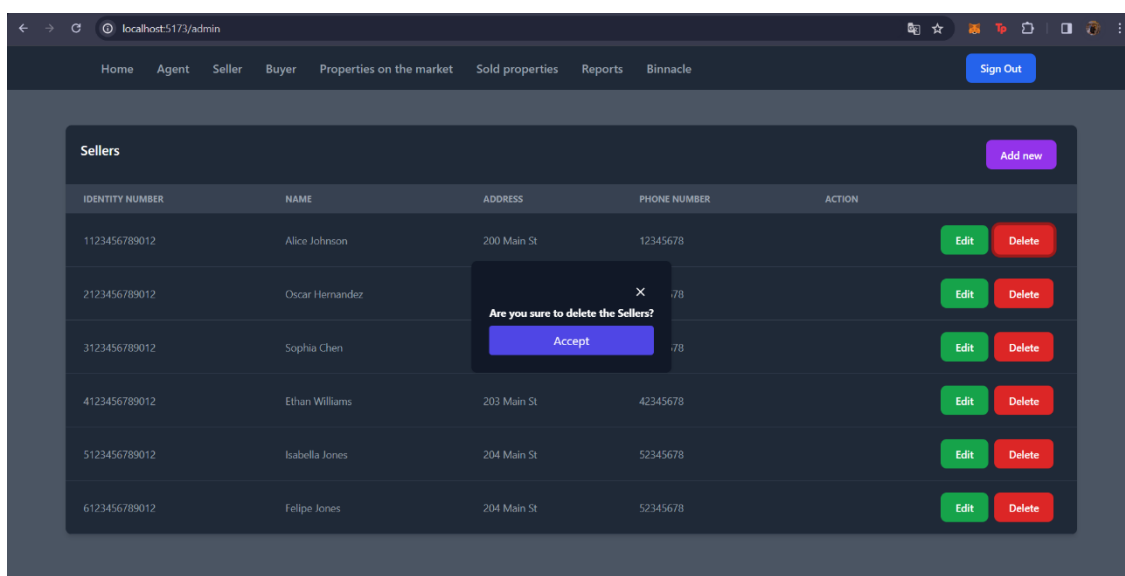
1. Click en el botón verde “Edit”
2. Editar la información necesaria
3. Click en el botón azul “Update Client”



Eliminar un vendedor:

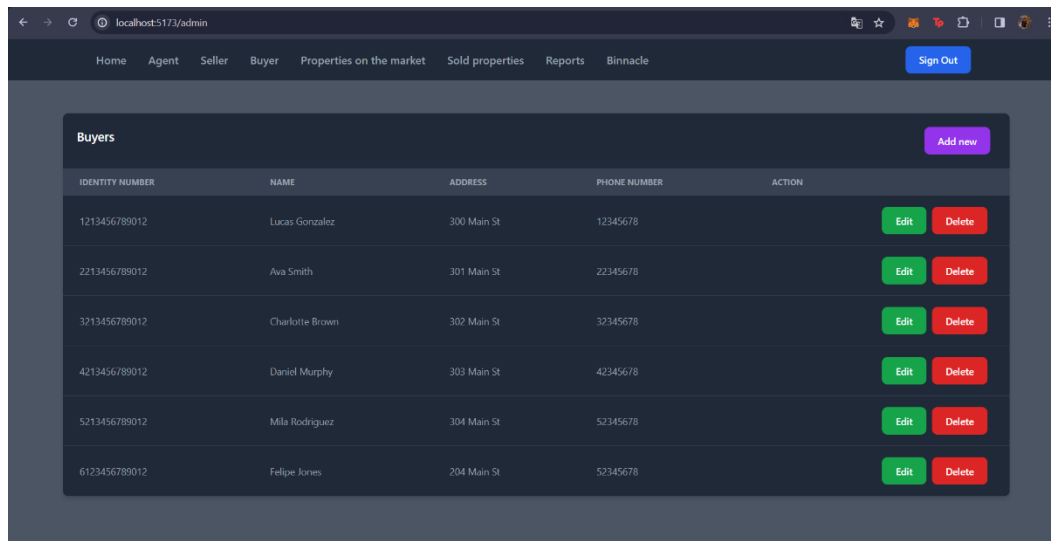
Pasos:

1. Click en el botón rojo “Delete”
2. Click en el botón azul “Accept” si está de acuerdo en que se elimine ese vendedor



CRUD Buyer:

Click en el botón “Buyer”



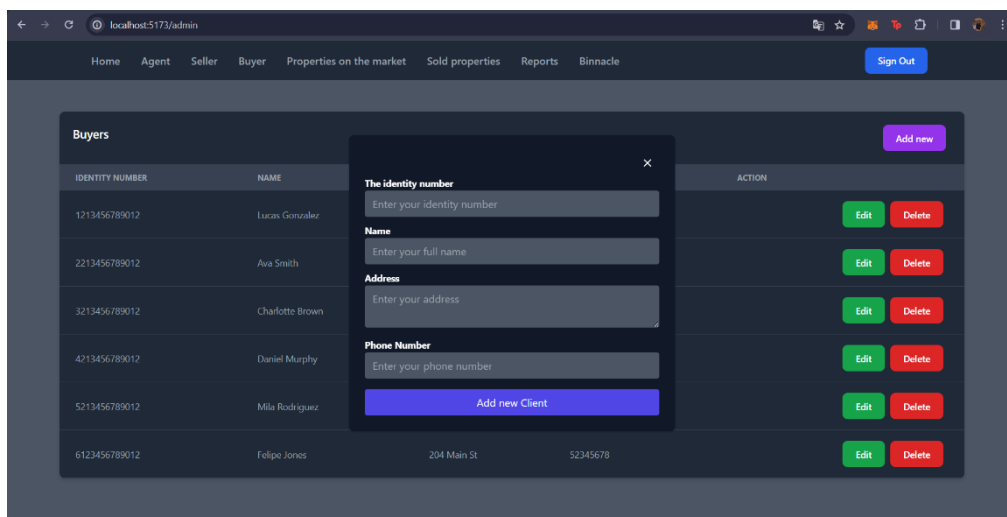
The screenshot shows a web application interface for managing buyers. At the top, there is a navigation bar with links: Home, Agent, Seller, Buyer, Properties on the market, Sold properties, Reports, and Binnacle. A 'Sign Out' button is located on the right. Below the navigation bar, the 'Buyers' section is displayed. It features a table with columns: IDENTITY NUMBER, NAME, ADDRESS, PHONE NUMBER, and ACTION. There are six rows of data. To the right of the table, there is an 'Add new' button. Each row in the table has 'Edit' and 'Delete' buttons in the ACTION column.

| IDENTITY NUMBER | NAME | ADDRESS | PHONE NUMBER | ACTION |
|-----------------|-----------------|-------------|--------------|---|
| 1213456789012 | Lucas Gonzalez | 300 Main St | 12345678 | <button>Edit</button> <button>Delete</button> |
| 2213456789012 | Ava Smith | 301 Main St | 22345678 | <button>Edit</button> <button>Delete</button> |
| 3213456789012 | Charlotte Brown | 302 Main St | 32345678 | <button>Edit</button> <button>Delete</button> |
| 4213456789012 | Daniel Murphy | 303 Main St | 42345678 | <button>Edit</button> <button>Delete</button> |
| 5213456789012 | Mila Rodriguez | 304 Main St | 52345678 | <button>Edit</button> <button>Delete</button> |
| 6123456789012 | Felipe Jones | 204 Main St | 52345678 | <button>Edit</button> <button>Delete</button> |

Ingresar un nuevo comprador:

Pasos:

1. Click en el botón morado “Add new”
2. Ingresar el número de identidad del comprador
3. Ingresar el nombre completo del comprador
4. Ingresar la dirección detallada del comprador
5. Ingresar el número de teléfono del comprador
6. Click en el botón azul “Add new Client”

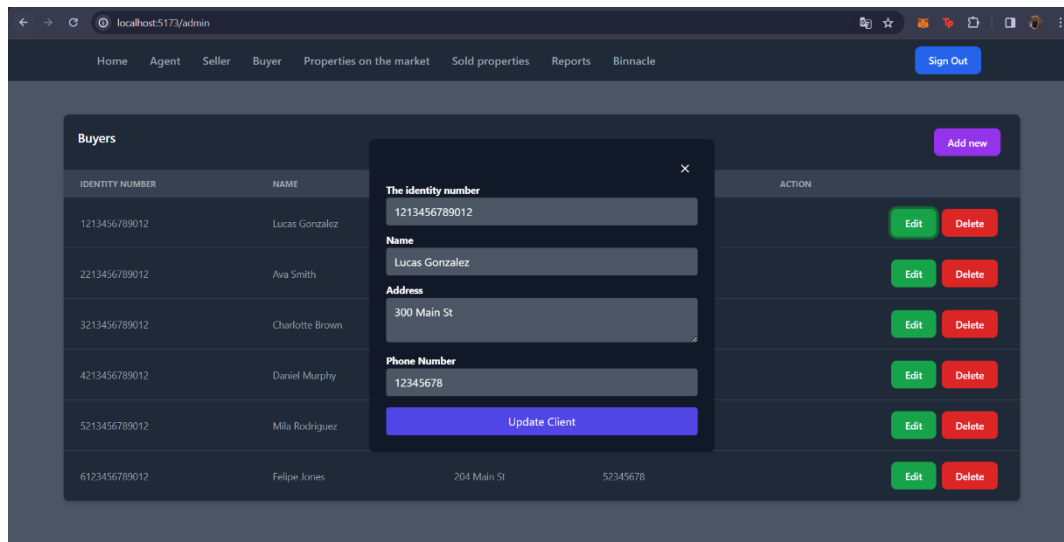


The screenshot shows the same web application interface as before, but with the 'Add new' modal open. The modal is a dark gray box with a close button (X) in the top right corner. It contains four input fields: 'The identity number' (with placeholder text 'Enter your identity number'), 'Name' (with placeholder text 'Enter your full name'), 'Address' (with placeholder text 'Enter your address'), and 'Phone Number' (with placeholder text 'Enter your phone number'). Below these fields is a blue button labeled 'Add new Client'. The background table and navigation bar are still visible.

Editar la información de un comprador:

Pasos:

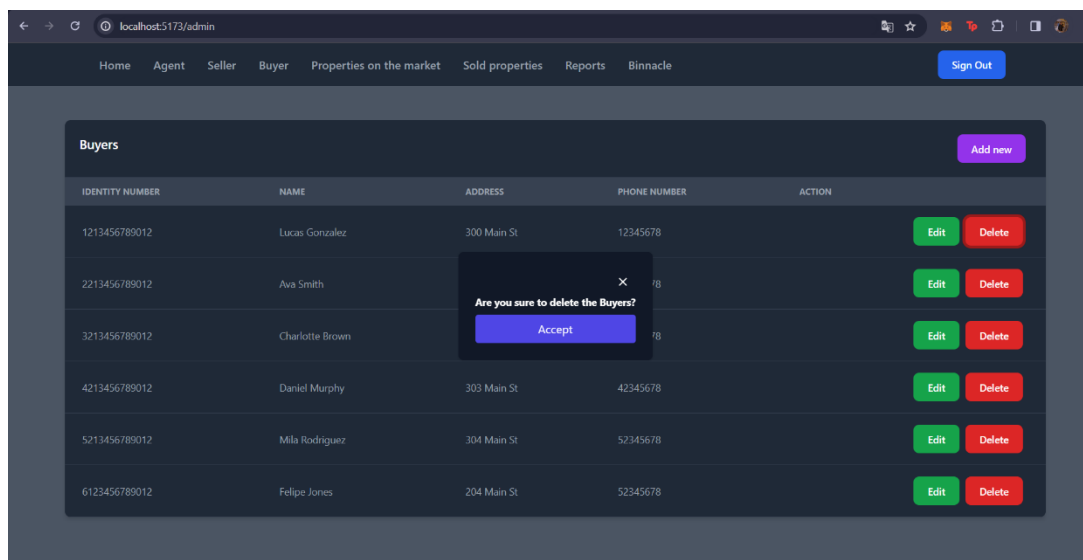
1. Click en el botón verde “Edit”
2. Editar la información necesaria
3. Click en el botón azul “Update Client”



Eliminar un comprador:

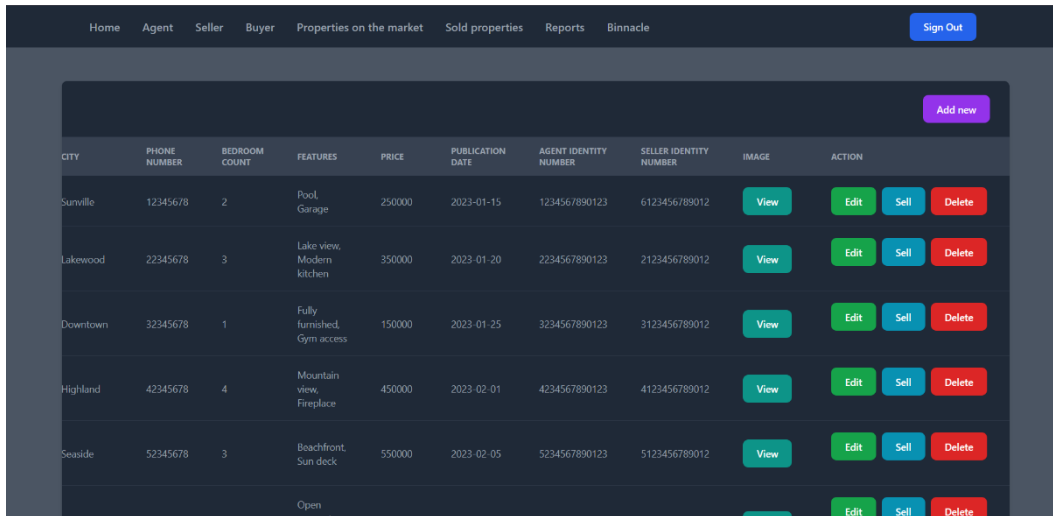
Pasos:

1. Click en el botón rojo “Delete”
2. Click en el botón azul “Accept” si está de acuerdo en que se elimine ese comprador



CRUD Propiedades en el Mercado:

Click en el botón “Properties on the market”

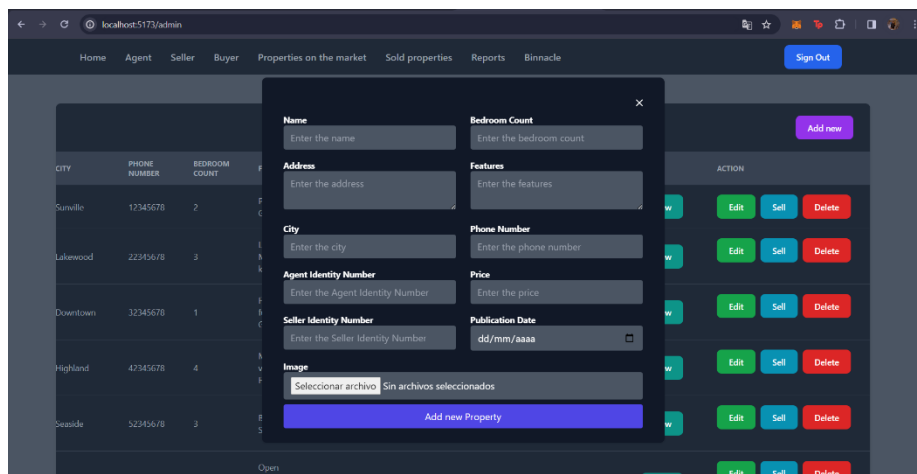


| CITY | PHONE NUMBER | BEDROOM COUNT | FEATURES | PRICE | PUBLICATION DATE | AGENT IDENTITY NUMBER | SELLER IDENTITY NUMBER | IMAGE | ACTION |
|----------|--------------|---------------|-----------------------------|--------|------------------|-----------------------|------------------------|-------|--------|
| Sunville | 12345678 | 2 | Pool, Garage | 250000 | 2023-01-15 | 1234567890123 | 6123456789012 | | |
| Lakewood | 22345678 | 3 | Lake view, Modern kitchen | 350000 | 2023-01-20 | 2234567890123 | 2123456789012 | | |
| Downtown | 32345678 | 1 | Fully furnished, Gym access | 150000 | 2023-01-25 | 3234567890123 | 3123456789012 | | |
| Highland | 42345678 | 4 | Mountain view, Fireplace | 450000 | 2023-02-01 | 4234567890123 | 4123456789012 | | |
| Seaside | 52345678 | 3 | Beachfront, Sun deck | 550000 | 2023-02-05 | 5234567890123 | 5123456789012 | | |
| Open | | | | | | | | | |

Ingresar una nueva propiedad al mercado:

Pasos:

1. Click en el botón morado “Add new”
2. Ingresar el nombre completo de la propiedad
3. Ingresar el número de habitaciones de la propiedad
4. Ingresar la dirección detallada de la propiedad
5. Ingresar las características de la propiedad
6. Ingresar la ciudad donde se encuentra la propiedad
7. Ingresar el número de teléfono de la propiedad
8. Ingresar el número de identidad del agente que lo atendió
9. Ingresar el precio de la propiedad
10. Ingresar el número de identidad del vendedor de la propiedad
11. Ingresar la fecha de publicación
12. Adjuntar una imagen de la propiedad
13. Click en el botón azul “Add new Property”



| Name | Bedroom Count |
|----------------------|----------------------|
| <input type="text"/> | <input type="text"/> |

| Address | Features |
|----------------------|----------------------|
| <input type="text"/> | <input type="text"/> |

| City | Phone Number |
|----------------------|----------------------|
| <input type="text"/> | <input type="text"/> |

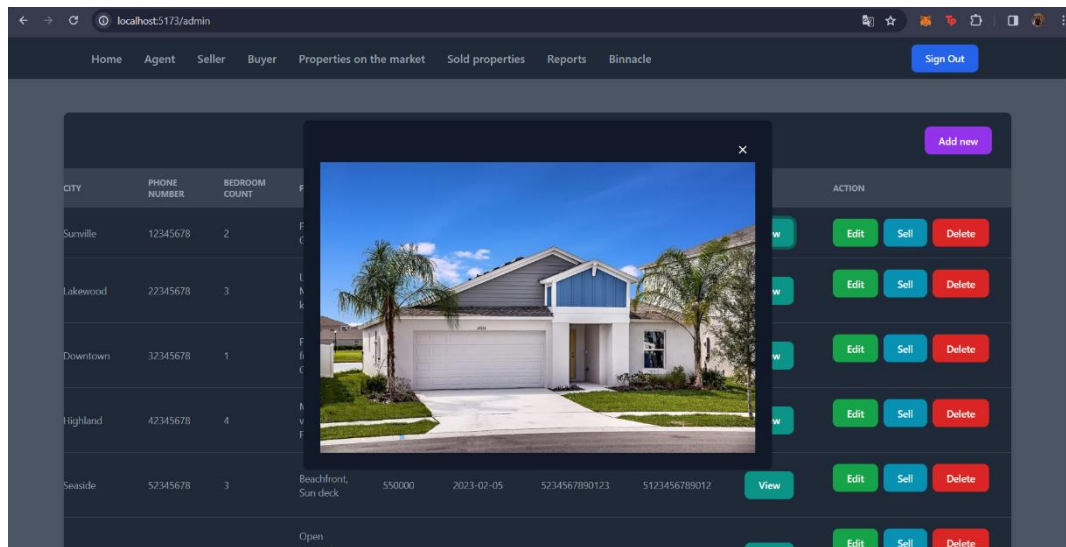
| Agent Identity Number | Price |
|-----------------------|----------------------|
| <input type="text"/> | <input type="text"/> |

| Seller Identity Number | Publication Date |
|------------------------|----------------------|
| <input type="text"/> | <input type="text"/> |

| Image |
|----------------------|
| <input type="text"/> |

Visualizar la propiedad en el mercado:

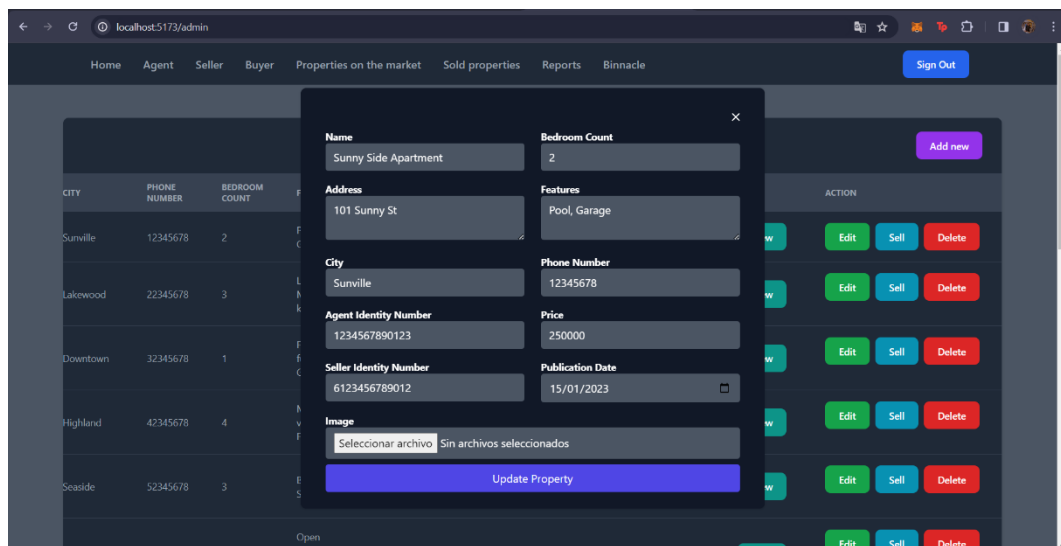
Click en el botón “View”



Editar la información de una propiedad en el mercado:

Pasos:

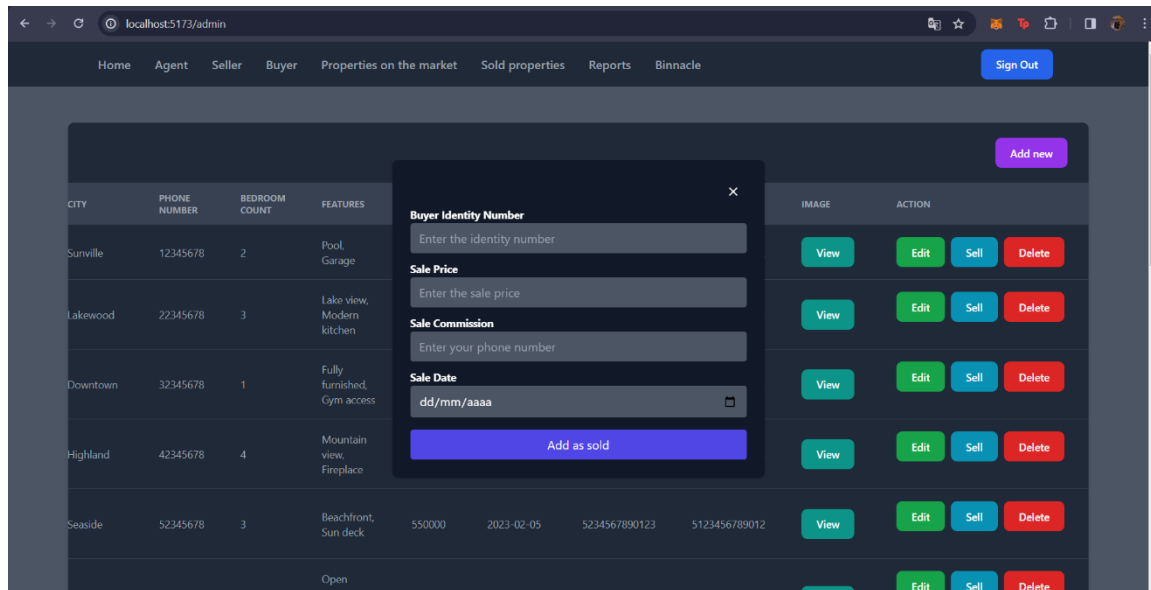
1. Click en el botón verde “Edit”
2. Editar la información necesaria
3. Click en el botón azul “Update Property”



Vender una propiedad:

Pasos:

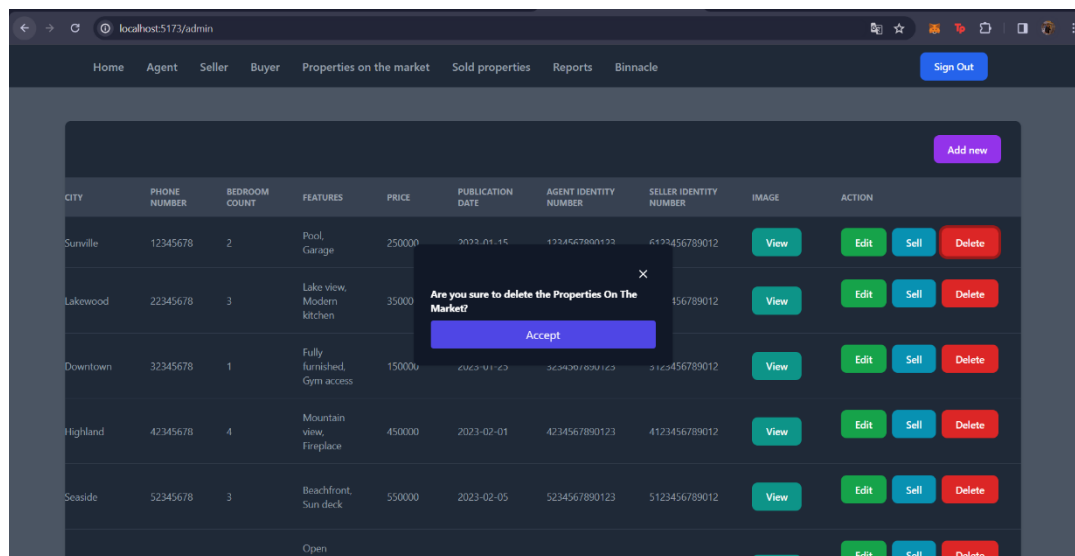
1. Click en el botón azul “Sell”
2. Ingresar el número de identidad del comprador
3. Ingresar el número de identidad del vendedor
4. Ingresar la comisión por la venta
5. Seleccionar la fecha de venta
6. Click en el botón “Add as sold”



Eliminar una propiedad en el mercado:

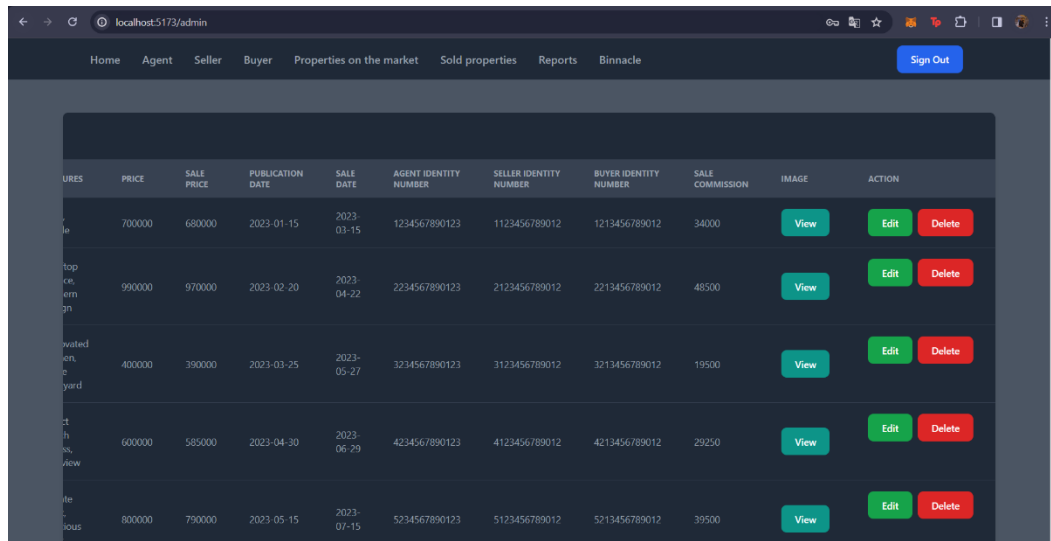
Pasos:

1. Click en el botón rojo “Delete”
2. Click en el botón azul “Accept” si está de acuerdo en que se elimine esa propiedad



CRUD Propiedades Vendidas:

Click en el botón “Sold Properties”

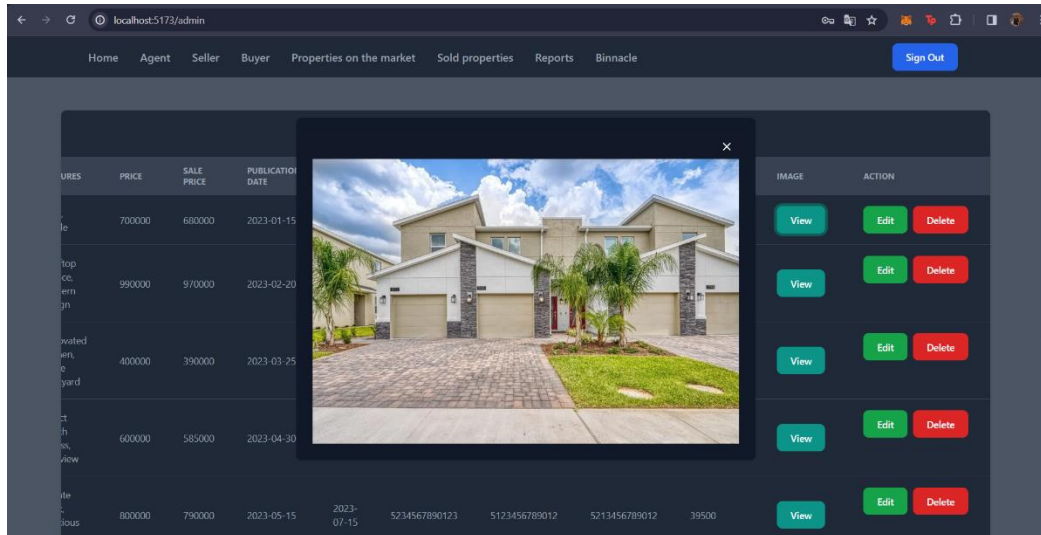


The screenshot shows a web application interface with a navigation bar at the top containing links: Home, Agent, Seller, Buyer, Properties on the market, Sold properties, Reports, and Binnacle. A 'Sign Out' button is located on the right. The main content area displays a table of sold properties. The table has columns for various details including price, sale price, dates, agent and seller identities, buyer identity, sale commission, and an image. Each row includes 'View', 'Edit', and 'Delete' buttons in the 'ACTION' column.

| PROPERTIES | PRICE | SALE PRICE | PUBLICATION DATE | SALE DATE | AGENT IDENTITY NUMBER | SELLER IDENTITY NUMBER | BUYER IDENTITY NUMBER | SALE COMMISSION | IMAGE | ACTION |
|------------|--------|------------|------------------|------------|-----------------------|------------------------|-----------------------|-----------------|-------|---|
| Property 1 | 700000 | 680000 | 2023-01-15 | 2023-03-15 | 1234567890123 | 1123456789012 | 1213456789012 | 34000 | | <button>View</button> <button>Edit</button> <button>Delete</button> |
| Property 2 | 990000 | 970000 | 2023-02-20 | 2023-04-22 | 2234567890123 | 2123456789012 | 2213456789012 | 48500 | | <button>View</button> <button>Edit</button> <button>Delete</button> |
| Property 3 | 400000 | 390000 | 2023-03-25 | 2023-05-27 | 3234567890123 | 3123456789012 | 3213456789012 | 19500 | | <button>View</button> <button>Edit</button> <button>Delete</button> |
| Property 4 | 600000 | 585000 | 2023-04-30 | 2023-06-29 | 4234567890123 | 4123456789012 | 4213456789012 | 29250 | | <button>View</button> <button>Edit</button> <button>Delete</button> |
| Property 5 | 800000 | 790000 | 2023-05-15 | 2023-07-15 | 5234567890123 | 5123456789012 | 5213456789012 | 39500 | | <button>View</button> <button>Edit</button> <button>Delete</button> |

Visualizar la propiedad vendida:

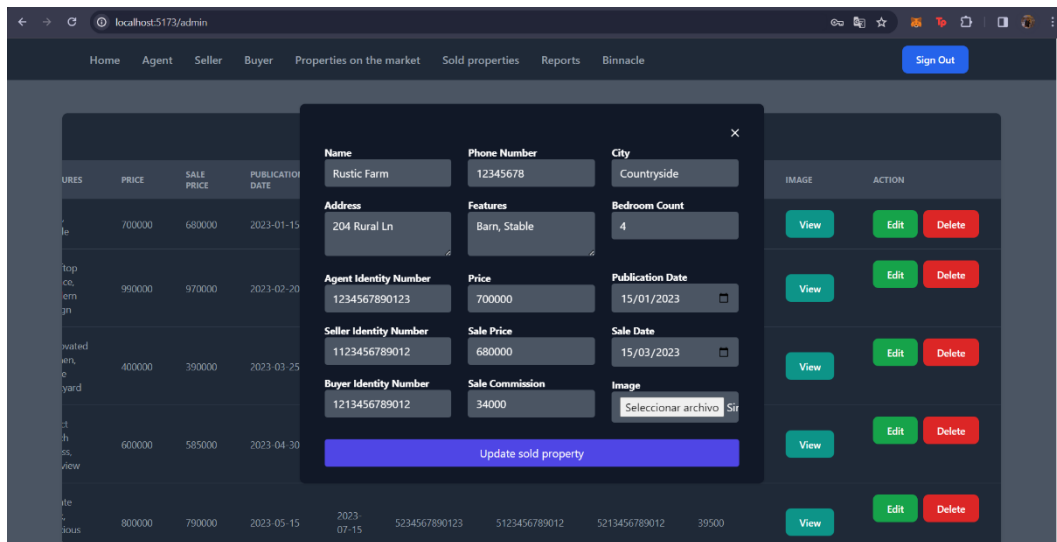
Click en el botón “View”



Editar la información de una propiedad vendida:

Pasos:

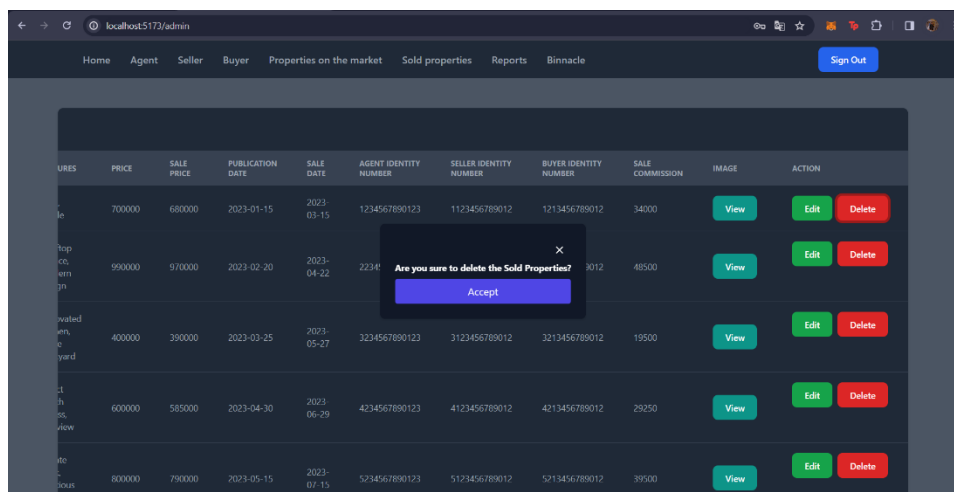
1. Click en el botón verde “Edit”
2. Editar la información necesaria
3. Click en el botón azul “Update sold property”



Eliminar una propiedad vendida:

Pasos:

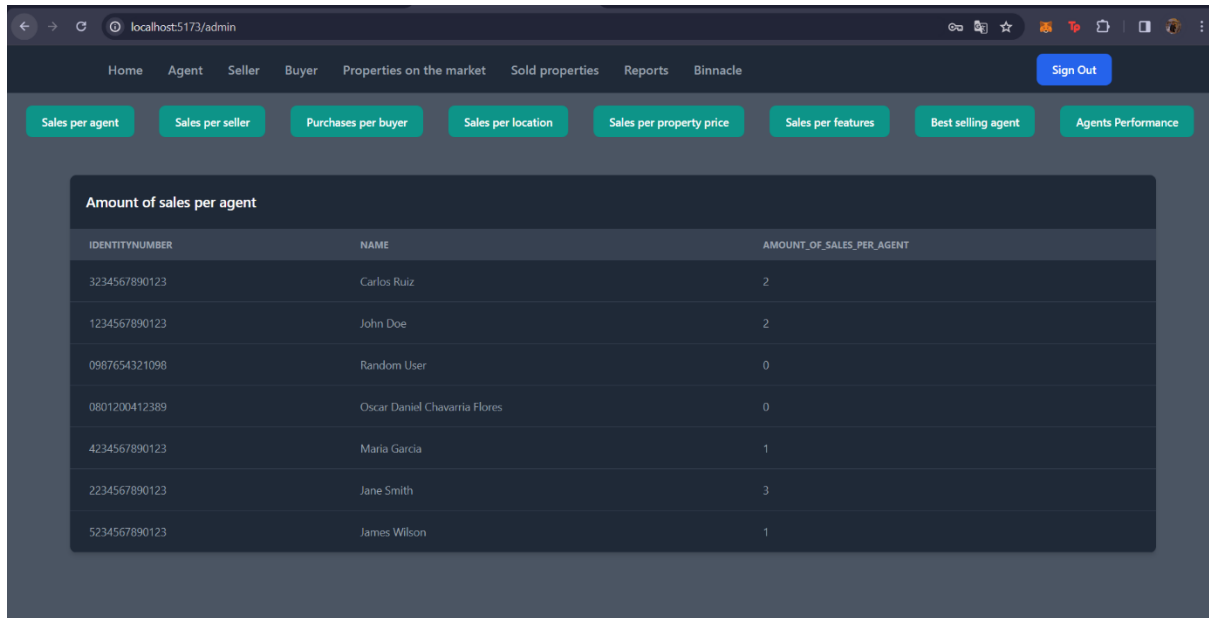
1. Click en el botón rojo “Delete”
2. Click en el botón azul “Accept” si está de acuerdo en que se elimine esa propiedad vendida



Reportes

Ventas por agente

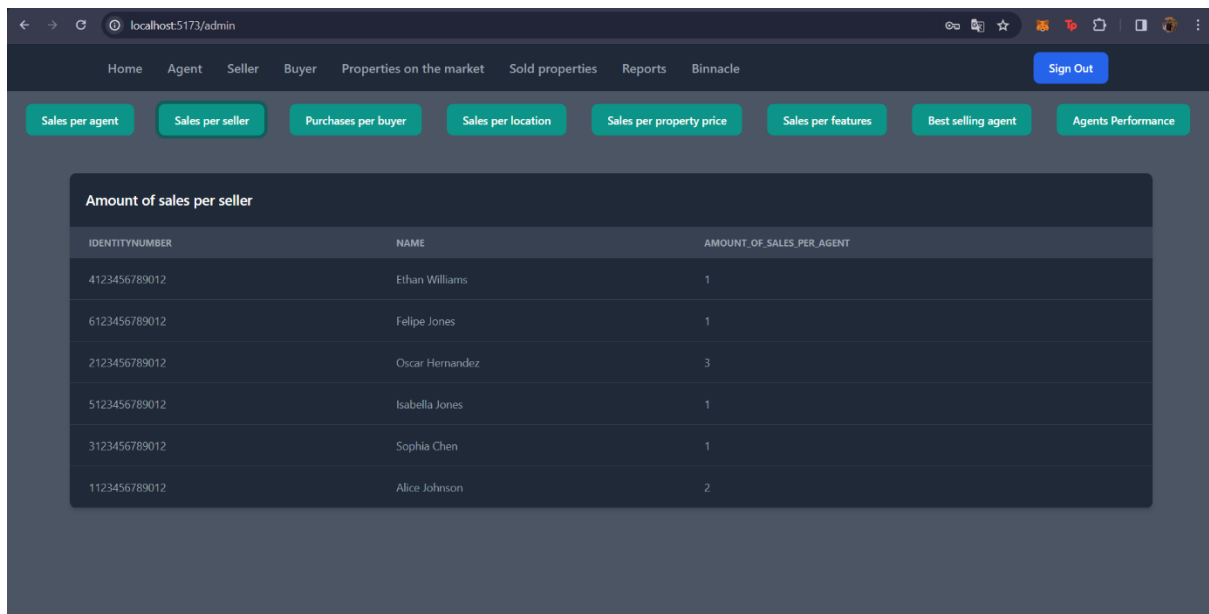
Click en el botón verde “Sales per agent”



| Amount of sales per agent | | |
|---------------------------|-------------------------------|---------------------------|
| IDENTITYNUMBER | NAME | AMOUNT_OF_SALES_PER_AGENT |
| 3234567890123 | Carlos Ruiz | 2 |
| 1234567890123 | John Doe | 2 |
| 0987654321098 | Random User | 0 |
| 0801200412389 | Oscar Daniel Chavarria Flores | 0 |
| 4234567890123 | Maria Garcia | 1 |
| 2234567890123 | Jane Smith | 3 |
| 5234567890123 | James Wilson | 1 |

Ventas por vendedor

Click en el botón verde “Sales per seller”



| Amount of sales per seller | | |
|----------------------------|-----------------|---------------------------|
| IDENTITYNUMBER | NAME | AMOUNT_OF_SALES_PER_AGENT |
| 4123456789012 | Ethan Williams | 1 |
| 6123456789012 | Felipe Jones | 1 |
| 2123456789012 | Oscar Hernandez | 3 |
| 5123456789012 | Isabella Jones | 1 |
| 3123456789012 | Sophia Chen | 1 |
| 1123456789012 | Alice Johnson | 2 |

Compras por comprador

Click en el botón verde “Purchases per buyer”

← → ↻ 🌐 localhost:5173/admin 🔍 🏠 📄 📱 🖨️ ⌵

Home Agent Seller Buyer Properties on the market Sold properties Reports Binnacle

Sign Out

Sales per agentSales per sellerPurchases per buyerSales per locationSales per property priceSales per featuresBest selling agentAgents Performance

Amount of purchases per buyer

| IDENTITYNUMBER | NAME | AMOUNT OF SALES PER AGENT |
|----------------|-----------------|---------------------------|
| 2213456789012 | Ava Smith | 2 |
| 5213456789012 | Mila Rodriguez | 2 |
| 6123456789012 | Felipe Jones | 0 |
| 4213456789012 | Daniel Murphy | 1 |
| 3213456789012 | Charlotte Brown | 2 |
| 1213456789012 | Lucas Gonzalez | 2 |

Ventas por ubicación

Click en el botón verde “Sales per location”

← → ↻ 🌐 localhost:5173/admin 🔍 🏠 📄 📱 🖨️ ⌵

Home Agent Seller Buyer Properties on the market Sold properties Reports Binnacle

Sign Out

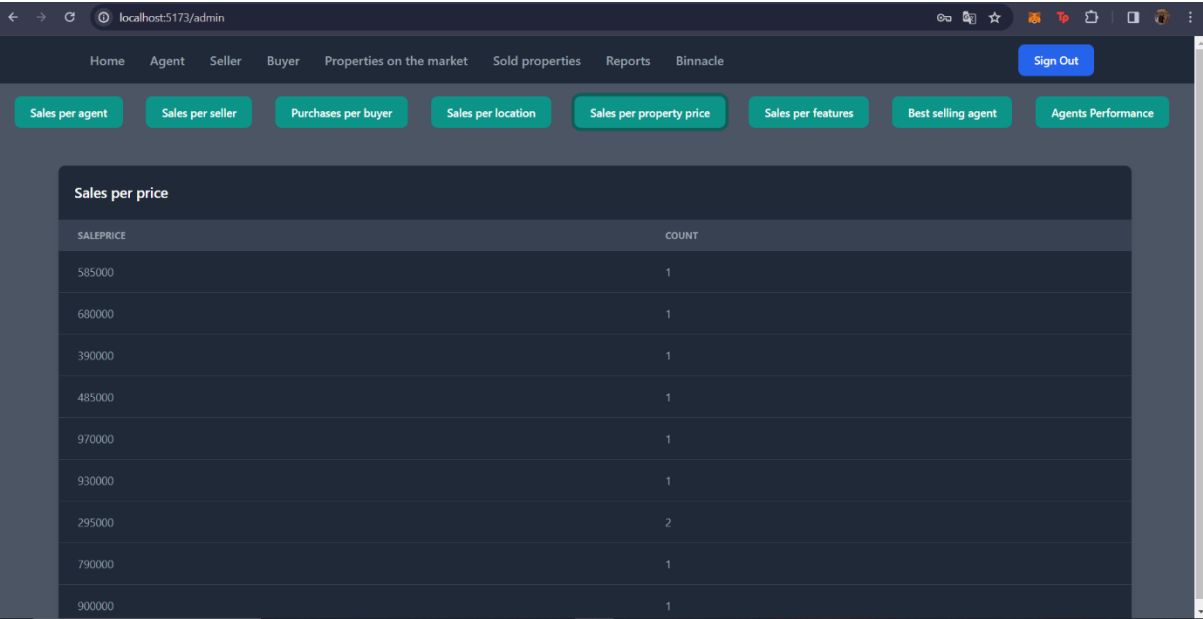
Sales per agentSales per sellerPurchases per buyerSales per locationSales per property priceSales per featuresBest selling agentAgents Performance

Sales per location

| CITY | COUNT |
|-------------|-------|
| City Center | 1 |
| Downtown | 2 |
| Countryside | 1 |
| Suburbia | 1 |
| Hillside | 1 |
| Beach City | 1 |
| Riverside | 1 |
| Oldtown | 1 |
| Sunville | 1 |

Ventas por precio de propiedad

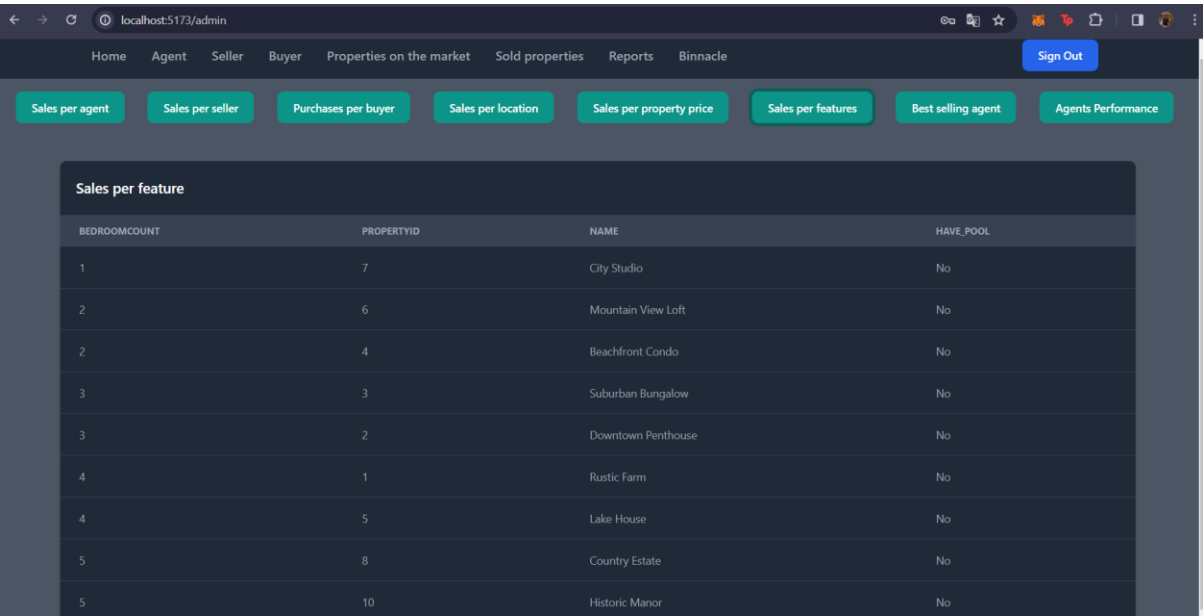
Click en el botón verde “Sales per property price”



| Sales per price | |
|-----------------|-------|
| SALEPRICE | COUNT |
| 585000 | 1 |
| 680000 | 1 |
| 390000 | 1 |
| 485000 | 1 |
| 970000 | 1 |
| 930000 | 1 |
| 295000 | 2 |
| 790000 | 1 |
| 900000 | 1 |

Ventas por características

Click en el botón verde “Sales per features”



| Sales per feature | | | |
|-------------------|------------|--------------------|-----------|
| BEDROOMCOUNT | PROPERTYID | NAME | HAVE_POOL |
| 1 | 7 | City Studio | No |
| 2 | 6 | Mountain View Loft | No |
| 2 | 4 | Beachfront Condo | No |
| 3 | 3 | Suburban Bungalow | No |
| 3 | 2 | Downtown Penthouse | No |
| 4 | 1 | Rustic Farm | No |
| 4 | 5 | Lake House | No |
| 5 | 8 | Country Estate | No |
| 5 | 10 | Historic Manor | No |

Agente que vendió la mayor cantidad de propiedades en el año por valor total

Click en el botón verde “Best selling agent” e ingresar el año que desea visualizar

← → ↻ 🌐 localhost:5173/admin 🔍 🏠 📄 🌙 🧑🏻 📱 ⋮

HomeAgentSellerBuyerProperties on the marketSold propertiesReportsBinnacleSign Out

Sales per agentSales per sellerPurchases per buyerSales per locationSales per property priceSales per featuresBest selling agentAgents Performance

Agent who sold more properties in the year2024

| NAME | IDENTITYNUMBER | SALE_YEAR | TOTAL_SALE |
|------------|----------------|-----------|------------|
| Jane Smith | 2234567890123 | 2024 | 900000 |

Rendimiento de los agentes

Click en el botón verde “Agents performance” e ingresar el año que desea visualizar

← → ↻ 🌐 localhost:5173/admin 🔍 🏠 📄 🌙 🧑🏻 📱 ⋮

HomeAgentSellerBuyerProperties on the marketSold propertiesReportsBinnacleSign Out

Sales per agentSales per sellerPurchases per buyerSales per locationSales per property priceSales per featuresBest selling agentAgents Performance

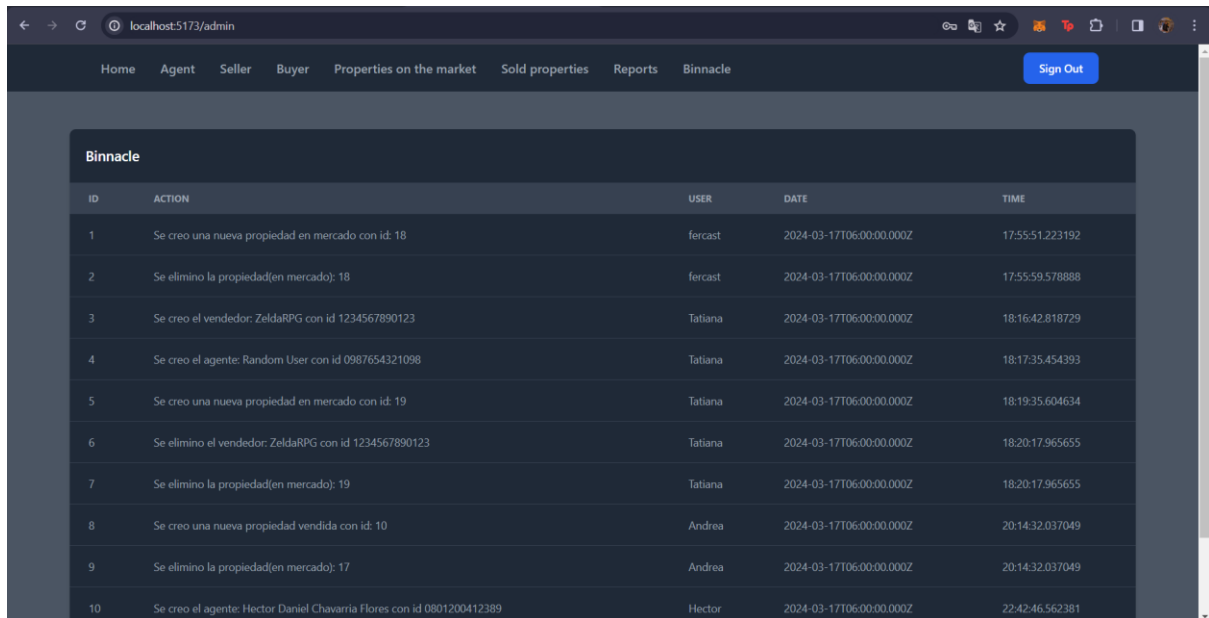
Agents performance in the year2023

| NAME | IDENTITYNUMBER | SALE_YEAR | AVERAGE_SELLING_PRICE | AVERAGE_TIME_ON_MARKET |
|--------------|----------------|-----------|-----------------------|------------------------|
| Maria Garcia | 4234567890123 | 2023 | 585000 | 60.0000000000000000 |
| James Wilson | 5234567890123 | 2023 | 790000 | 61.0000000000000000 |
| John Doe | 1234567890123 | 2023 | 582500 | 60.5000000000000000 |
| Jane Smith | 2234567890123 | 2023 | 632500 | 61.5000000000000000 |
| Carlos Ruiz | 3234567890123 | 2023 | 660000 | 62.5000000000000000 |

Bitácora

Para visualizar la bitácora de cambios en el sistema:

Click en el botón “Binnacle”



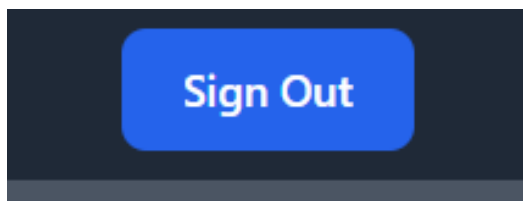
The screenshot shows a web browser at localhost:5173/admin. The navigation bar includes links for Home, Agent, Seller, Buyer, Properties on the market, Sold properties, Reports, and Binnacle. A 'Sign Out' button is in the top right. The Binnacle section displays a table of system actions.

| ID | ACTION | USER | DATE | TIME |
|----|--|---------|--------------------------|-----------------|
| 1 | Se creo una nueva propiedad en mercado con id: 18 | fercast | 2024-03-17T06:00:00.000Z | 17:55:51.223192 |
| 2 | Se elimino la propiedad(en mercado): 18 | fercast | 2024-03-17T06:00:00.000Z | 17:55:59.578888 |
| 3 | Se creo el vendedor: ZeldaRPG con id 1234567890123 | Tatiana | 2024-03-17T06:00:00.000Z | 18:16:42.818729 |
| 4 | Se creo el agente: Random User con id 0987654321098 | Tatiana | 2024-03-17T06:00:00.000Z | 18:17:35.454393 |
| 5 | Se creo una nueva propiedad en mercado con id: 19 | Tatiana | 2024-03-17T06:00:00.000Z | 18:19:35.604634 |
| 6 | Se elimino el vendedor: ZeldaRPG con id 1234567890123 | Tatiana | 2024-03-17T06:00:00.000Z | 18:20:17.965655 |
| 7 | Se elimino la propiedad(en mercado): 19 | Tatiana | 2024-03-17T06:00:00.000Z | 18:20:17.965655 |
| 8 | Se creo una nueva propiedad vendida con id: 10 | Andrea | 2024-03-17T06:00:00.000Z | 20:14:32.037049 |
| 9 | Se elimino la propiedad(en mercado): 17 | Andrea | 2024-03-17T06:00:00.000Z | 20:14:32.037049 |
| 10 | Se creo el agente: Hector Daniel Chavarria Flores con id 0801200412389 | Hector | 2024-03-17T06:00:00.000Z | 22:42:46.562381 |

Salida del sistema

Para salir del sistema:

Click en el botón azul “Sign Out”

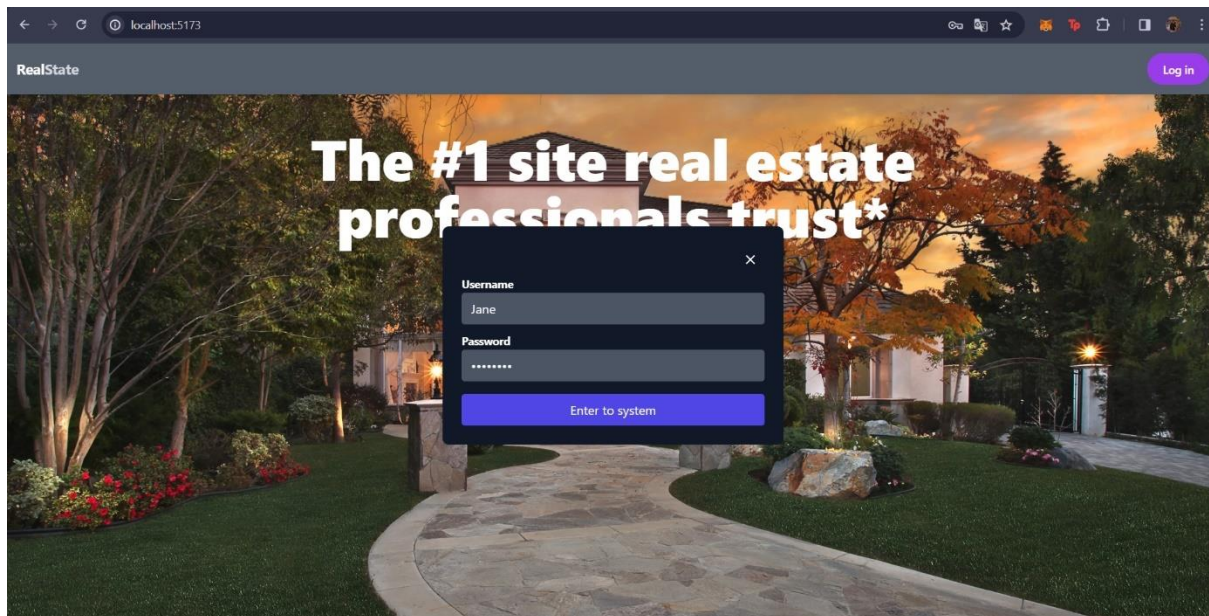


4.1.2. Rol de Agente

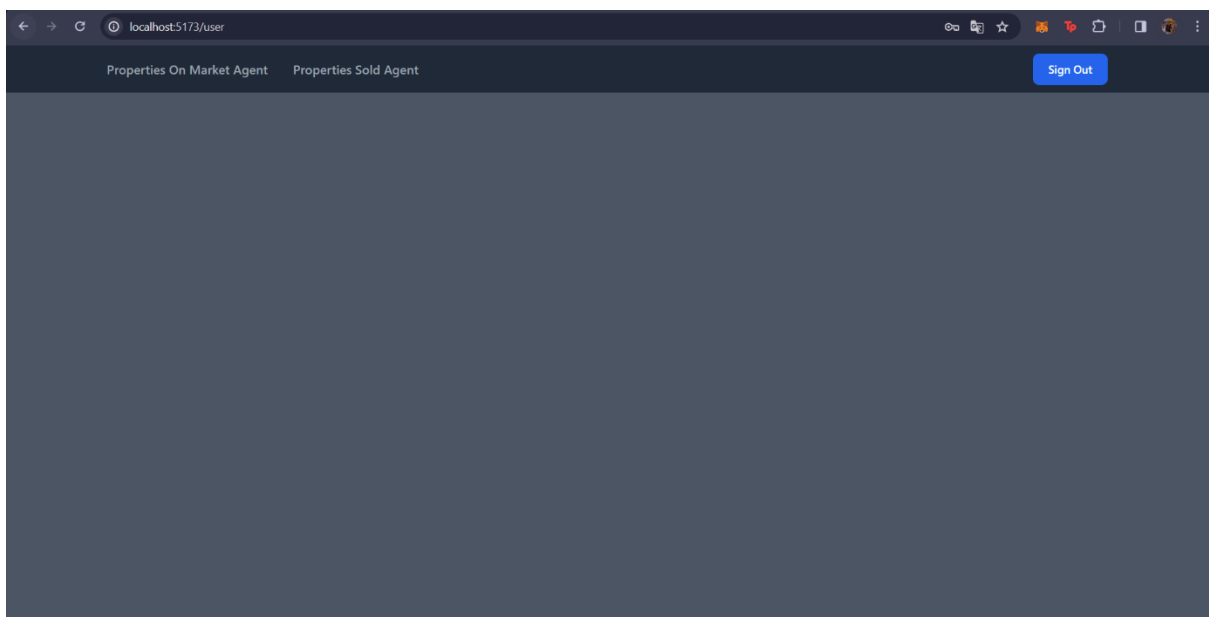
Log In Agente:

Pasos:

1. Click en el botón “Log In”
2. Ingresar su nombre usuario, en este caso el de los agentes (Jane)
3. Ingresar la contraseña “12345678”
4. Click en el botón “Enter to System”



Pantalla Home:



Pantalla de las Propiedades en el mercado:

Click en el botón “Properties on Market Agent”

The screenshot shows a web application interface for a real estate agent. The top navigation bar includes 'Properties On Market Agent' and 'Properties Sold Agent' tabs, with a 'Sign Out' button on the right. The main content area displays three property listings, each with a photo, title, features, address, contact information, and general information.

| Property Name | Features | Address | Contact to agent | General Information |
|-----------------|---------------------------|----------------|---------------------|---|
| Cozy Cottage | Lake view, Modern kitchen | 102 Lake St | Jane Smith 32345678 | Lakewood, 3, 22345678, \$ 350000, 2023-01-20 |
| Country Villa | Vast lands, Private pond | 402 Country Rd | Jane Smith 32345678 | Countryside, 4, 22345678, \$ 600000, 2023-02-15 |
| Garden Bungalow | Lush garden, Eco-friendly | 605 Green St | Jane Smith 32345678 | Greenville, 2, 22345678, \$ 360000, 2023-03-10 |

Pantalla de Propiedades vendidas:

Click en el botón “Properties Sold Agent”

The screenshot shows the same web application interface, but with the 'Properties Sold Agent' tab selected. The main content area displays three property listings, each with a photo, title, features, address, contact information, and general information.

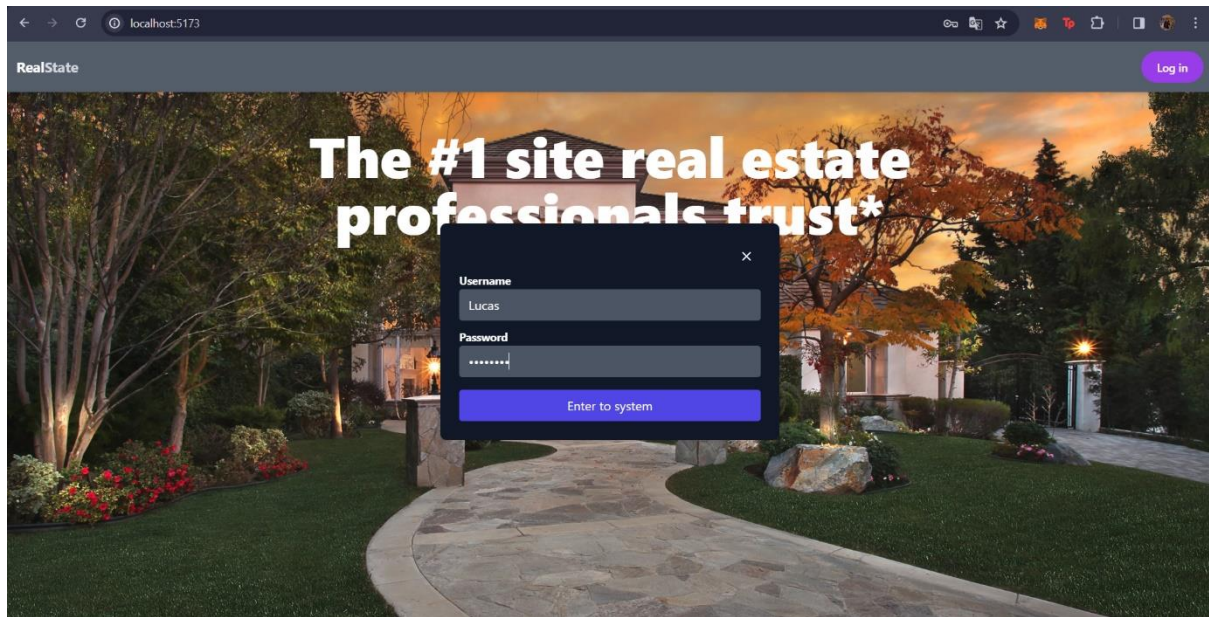
| Property Name | Features | Address | Contact to agent | General Information |
|--------------------|------------------------------------|-----------------|---------------------|--|
| Downtown Penthouse | Rooftop terrace, Modern design | 305 Urban Blvd | Jane Smith 32345678 | City Center, 3, 22345678, \$ 990000, 970000, 48500, 2023-02-20, 2023-04-22 |
| City Studio | Efficient layout, Central location | 810 Central St | Jane Smith 32345678 | Downtown, 1, 22345678, \$ 300000, 295000, 14750, 2023-07-17, 2023-09-17 |
| Historic Manor | Historic charm, Large estate | 710 Heritage St | Jane Smith 32345678 | Oldtown, 5, 22345678, \$ 900000, 900000, 300000, 2023-04-05, 2024-03-16 |

4.1.3. Rol de Comprador

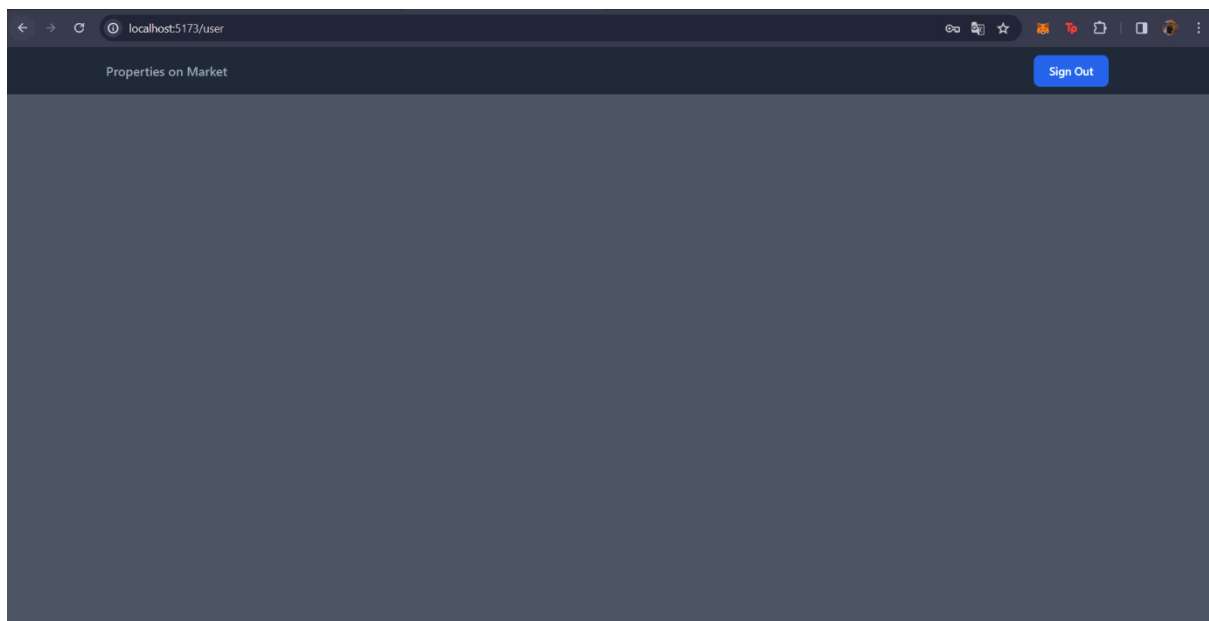
Log In Comprador:

Pasos:

1. Click en el botón “Log In”
2. Ingresar su nombre usuario, en este caso el de los compradores (Lucas)
3. Ingresar la contraseña “12345678”
4. Click en el botón “Enter to System”



Pantalla Home:




Pantalla Propiedades en el mercado:


Click en el botón “Properties on Market”

Properties on Market


Sign Out



Riverside Residence
Features: River access, Boat dock
Address: 609 River Rd
Contact to agent
John Doe 22345678
General Information
Rivertown 3 12345678
\$ 460000
2023-04-01




Penthouse
Features: Panoramic views, Luxury finishes
Address: 404 High Rise
Contact to agent
John Doe 22345678
General Information
Skyline 3 12345678
\$ 1000000
2023-03-05



Modern Loft
Features: Open concept, Industrial design
Address: 202 Urban St
Contact to agent
John Doe 22345678
General Information
Midtown 2 12345678
\$ 330000
2023-02-10


localhost:5173/user

Sunville 2 12345678
\$ 250000
2023-01-15




Cozy Cottage
Features: Lake view, Modern kitchen
Address: 102 Lake St
Contact to agent
Jane Smith 32345678
General Information
Lakewood 3 22345678
\$ 350000
2023-01-20

Greenville 2 22345678
\$ 360000
2023-03-10



Townhouse
Features: Community pool, Modern design
Address: 506 Town St
Contact to agent
Carlos Ruiz 42345678
General Information
Townsville 3 32345678
\$ 420000

Countryside 4 22345678
\$ 600000
2023-02-15



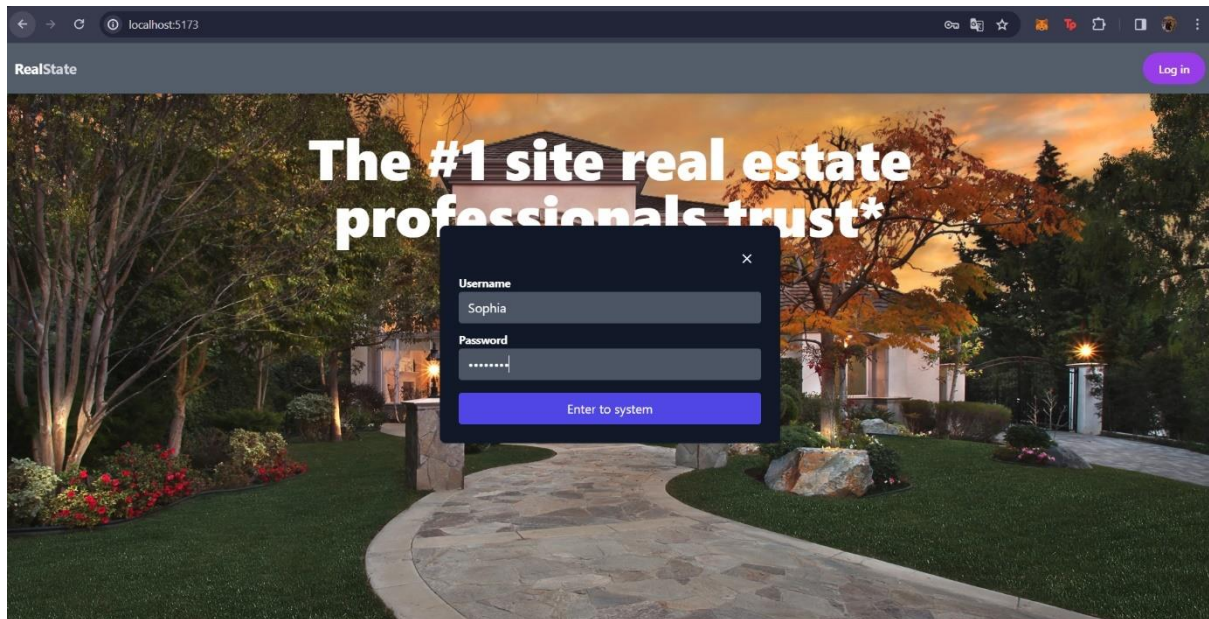
Suburban Home
Features: Family-friendly, Backyard
Address: 503 Suburb Ln
Contact to agent
Carlos Ruiz 42345678
General Information
Quietville 3 32345678
\$ 400000

4.1.4. Rol de Vendedor

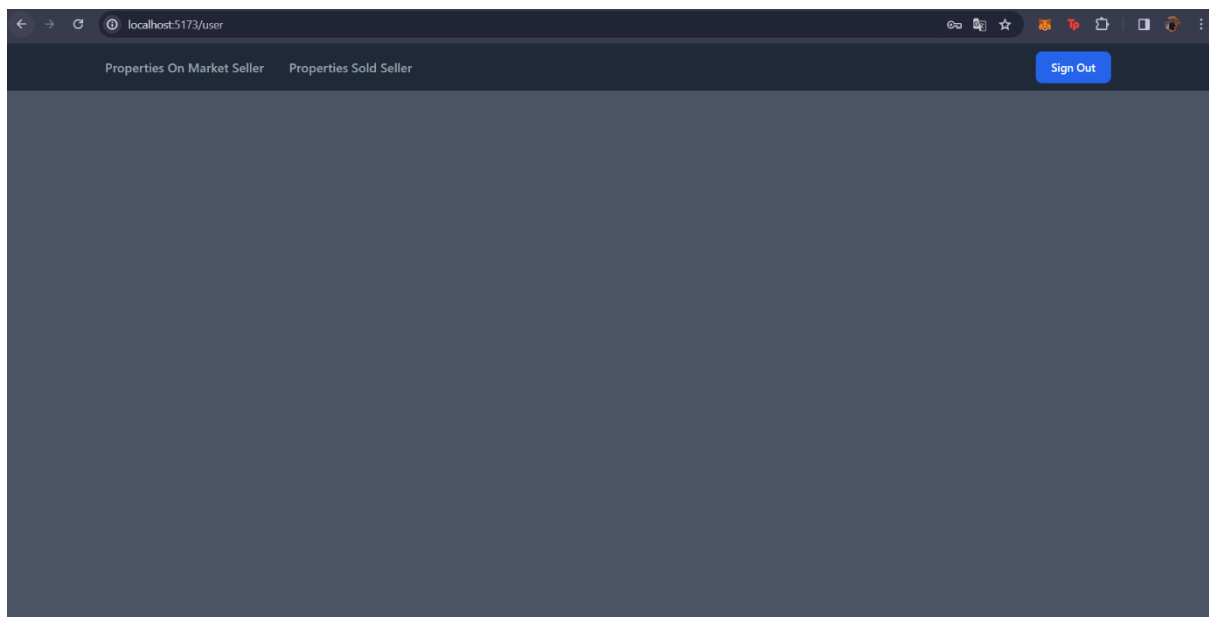
Log In Vendedor:

Pasos:

1. Click en el botón “Log In”
2. Ingresar su nombre usuario, en este caso el de los vendedores (Sophia)
3. Ingresar la contraseña “12345678”
4. Click en el botón “Enter to System”

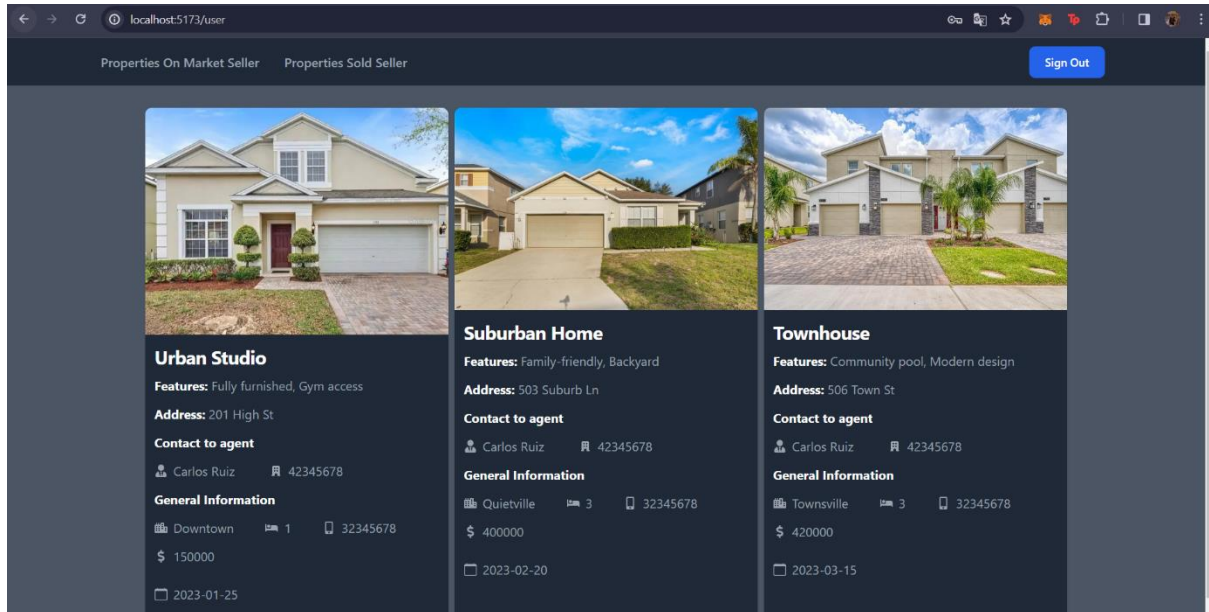


Pantalla Home:



Pantalla de las Propiedades en el mercado:

Click en el botón “Properties on Market Seller”



Pantalla de Propiedades vendidas:

Click en el botón “Properties Sold Seller”

