1. INTRODUCTION

PROJECTOVERVIEW:

There are large numbers of commercial real estate online information service providers offering a suite of commercial properties and services tailored to the national and local needs of the commercial investments industry. These online marketplaces have thousands of commercial real estate properties for sale and lease under various categories including commercial office space, industrial, single - family, multi - family, land, etc both for sale and lease as well. There purpose it to attract community of industry professionals including investors, property managers, landlords, appraisers, local and national buyers to select the properties with desired features.

PURPOSE:

The scope of MS project "Real Estate Web Application" is to enable the buyers to search for property listings online. The motive of developing this application is to design a feature rich search engine which can make the search of commercial land/properties an easy task.

2. LITERATURESURVEY

EXISTINGPROBLEM:

The existing problems that the "Central Bank Smart Contract Implementation"projectseekstoaddressinthecontextofcentral banking include Inefficiency in Financial Transactions,Lack of Transparency,Data Security and Privacy Concerns,Evolving Financial Ecosystem

REFERENCES:

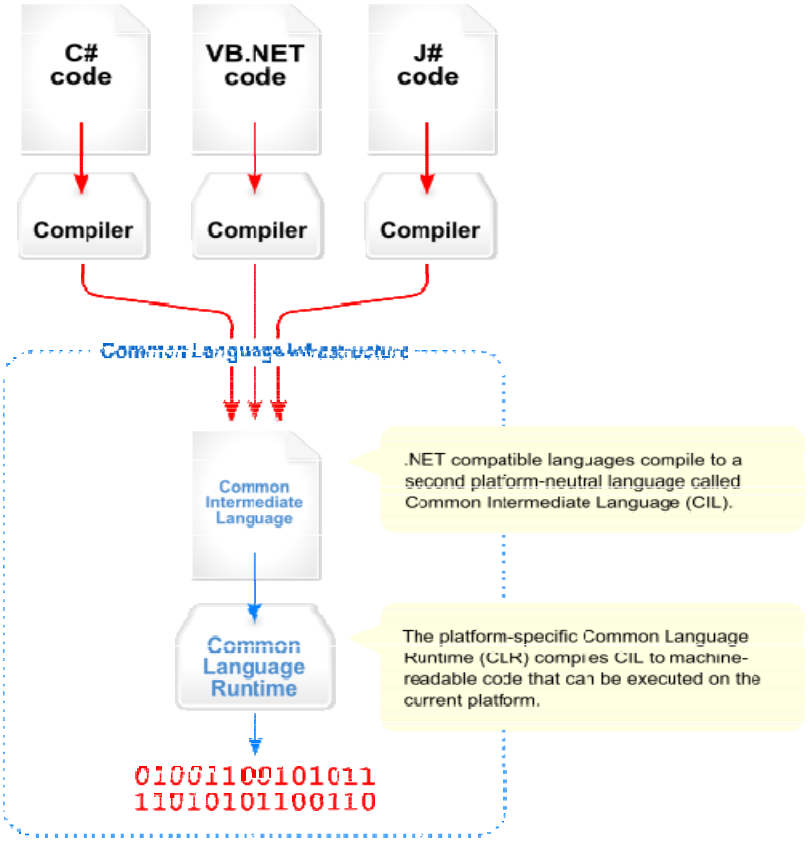
1) Bech,M.,&Garratt,R.(2020).CentralBankDigital Currencies: A Literature Review. Bank for International Settlements (BIS).

2) HE, D., & YANG, J. (2018). FINTECH IN THE DIGITAL AGE: CENTRALBANKDIGITALCURRENCYANDFINTECHINCHINA.IMFWORKING PAPER.

ProblemStatement:

The purpose of creating this Real Estate Web Application is to outcast the discrepancies in hundreds of such existing systems on the World Wide Web. One of the basic problems with the existing systems is the non-interactive environment they provide to the users. Most of the applications involved in Real Estate business use some web template to put the content specific to their company and make it communicate with the database to search the listings. These templates simply use basic web controls to do this task making the web page non-interactive. On the other hand, the motive of this Real Estate Web Application is to allow the user to play with the search tool and create different combinatorial search criterion to perform exhaustive search.

3. IDEATION&PROPOSEDSOLUTION



The Real Estate Web Application is developed on the .NET Platform using the .NET framework together with Microsoft SQL Server 2005. It is developed in the Visual Studio .NET 2005 integrated development environment. The goal of this chapter is to give an overview of th.NET Framework to show how this platform is architectured.

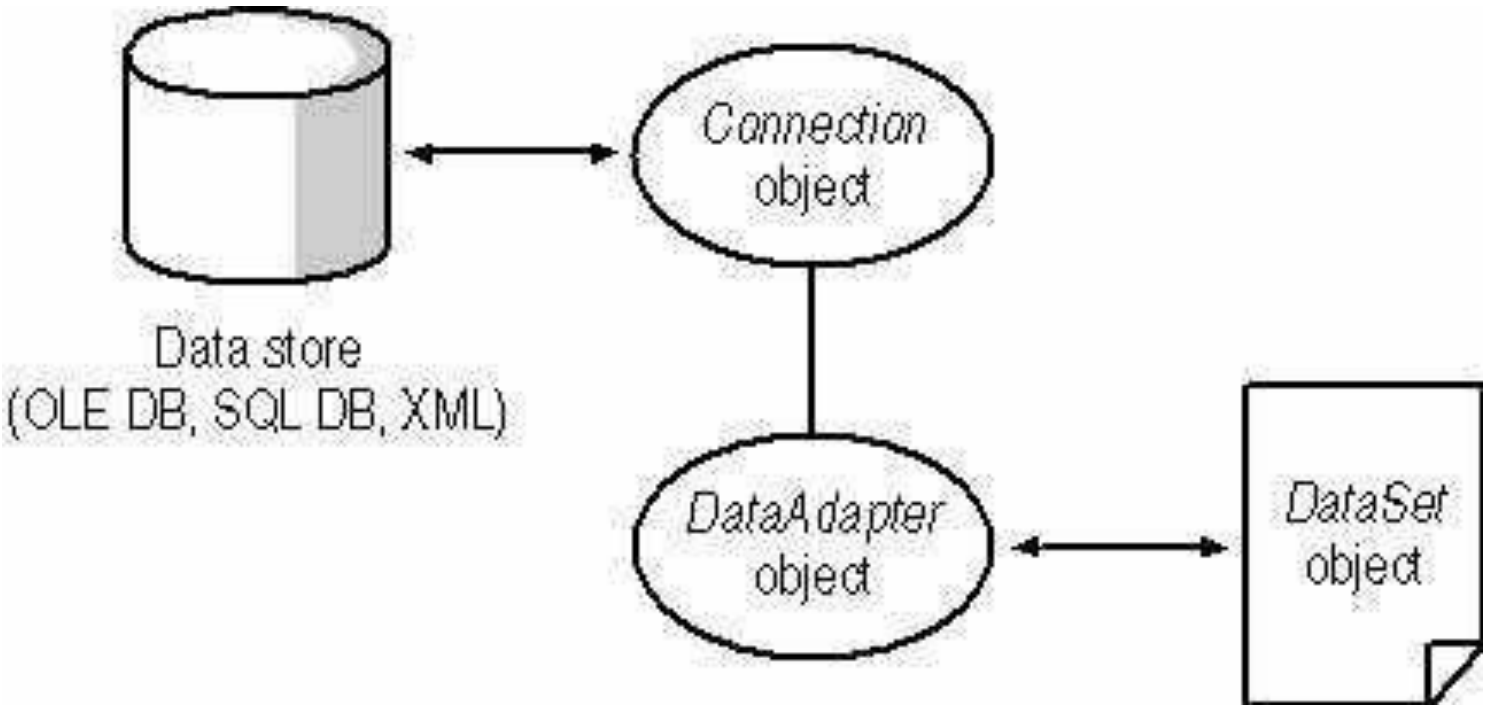
4. REQUIREMENTANALYSIS

FUNCTIONALREQUIREMENT:

The latest tools and technologies involved in building this website are: ASP.NET 2.0, Microsoft Visual Studio 2005, ADO.NET, SQL Server 2005, AJAX and Java Script.

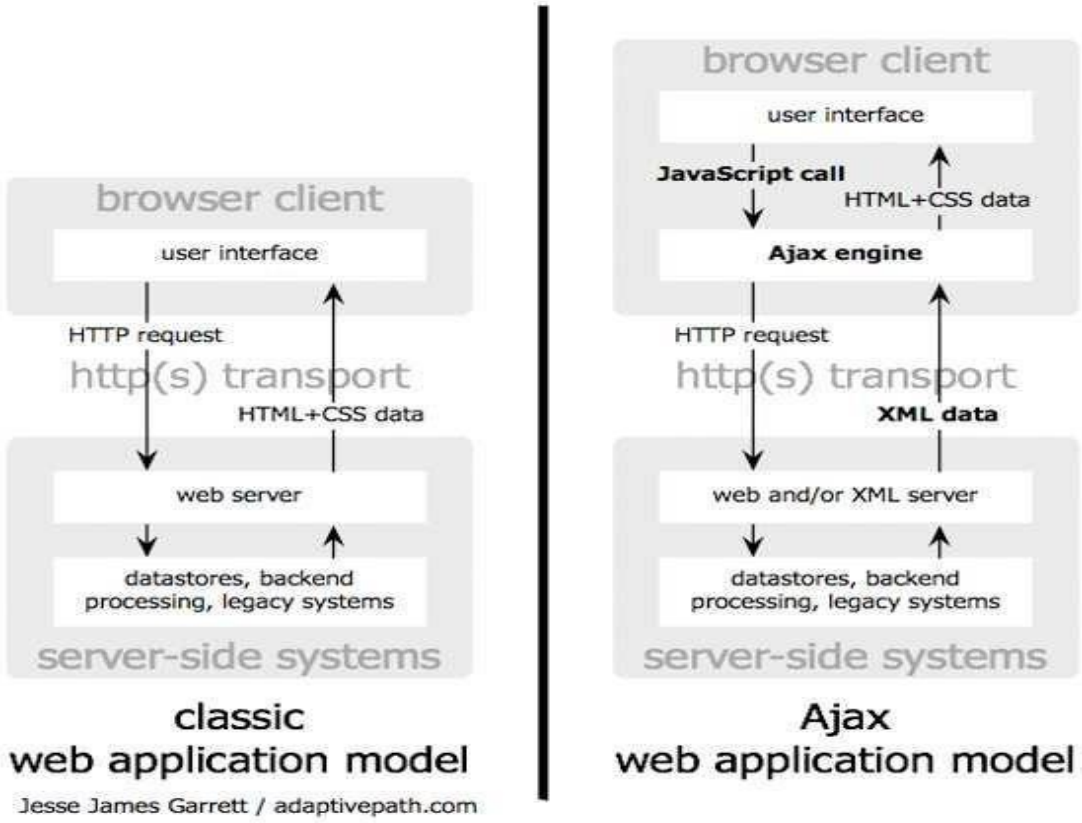
- SmartContractdevelopment
- ASP.NET 2.0
- Microsoft Visual Studio 2005
- ADO.NET
- SQL Server 2005
- AJAX and Java Script.

ADO.NE:

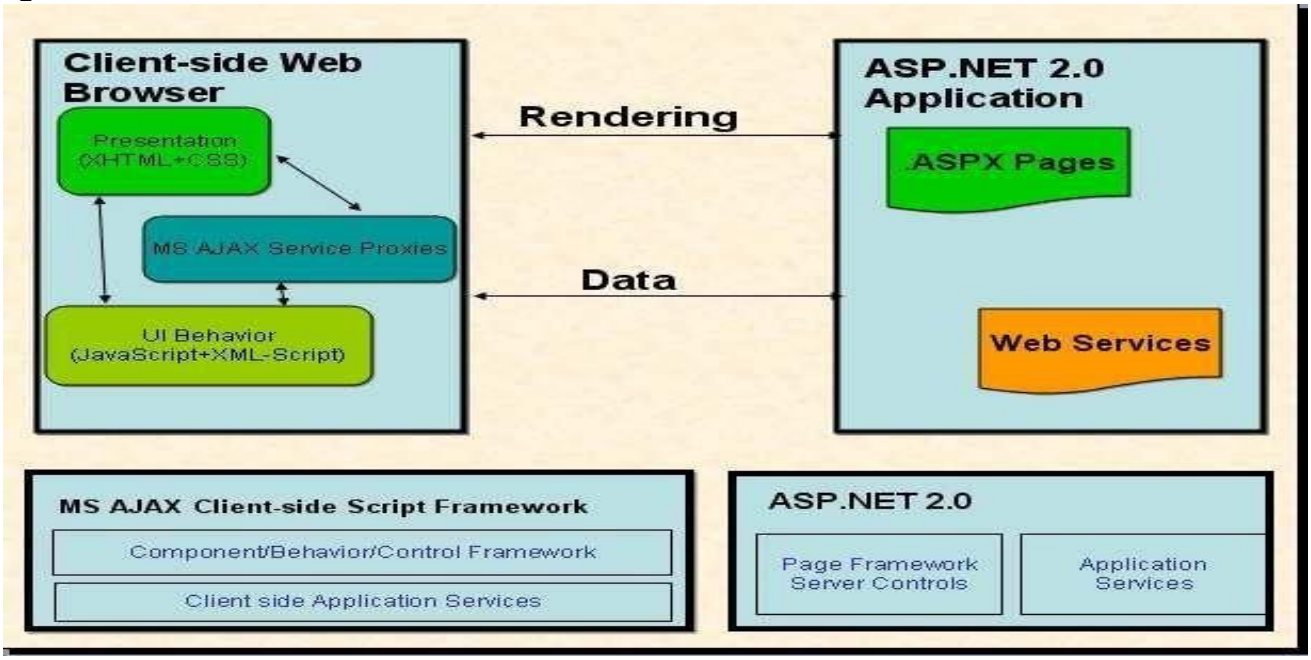


5. PROJECTDESIGN

DATAFLOWDIAGRAM&USERSTORIES:



System Architecture:



Stepstocompletethe project

Step 1:

1. Open the Zip file and

2.downloadthezipfile.Extractallzes

Step 2 :

1. Openvscodeinthelefttopselectopenfolder.Selectextractedfile and open .

2. Selecttheprojectname.solfileandcopythecode.

3. Open the remix ide platform and create a new file by givingthenameofprojectname.solandpastethecodewhich you copied from vs code

4. Clickonsolidityicompilerandclickcompiletheprojectname.sol

5. Deploythesmartcontractbyclickingonthedeployandrun transaction.

6. selectinjectedprovider-MetaMask.Inenvironment

7. Clickondeploy.AutomaticallyMetaMaskwillopenandgive confirmation. You will geta pop up click on ok.

8. IntheDeployedcontractyoucanseeoneaddresscopytheaddress.

9. Openvscodeandsearchfortheconnector.js.Incontract.js youcanpastetheaddress at the bottom of the code. In export const address.

10. Savethecode.

11. Clickonsolidityicompilerandclickcompiletheprojectname.sol

12. Deploythesmartcontractbyclickingonthedeployandrun transaction.

13. selectinjectedprovider-MetaMask.Inenvironment

14. Clickondeploy.AutomaticallyMetaMaskwillopenandgive confirmation. You will geta pop up click on ok.

15. IntheDeployedcontractyoucanseeoneaddresscopytheaddress.

16. Openvscodeandsearchfortheconnector.js.Incontract.js youcanpastetheaddress at the bottom of the code. In export const address.

17. Savethecode.

Step3:

openfileexplorer

1. Opentheextractedfileandclickonthefolder.

2. Opensrc,andsearchforutiles.

3. Youcanseethefrontendfiles.Selectallthethingsatthetop in the search bar byclicking alt+ A. Search for cmd

4. Opencmdenter

   commandsnpm

   install

   npm

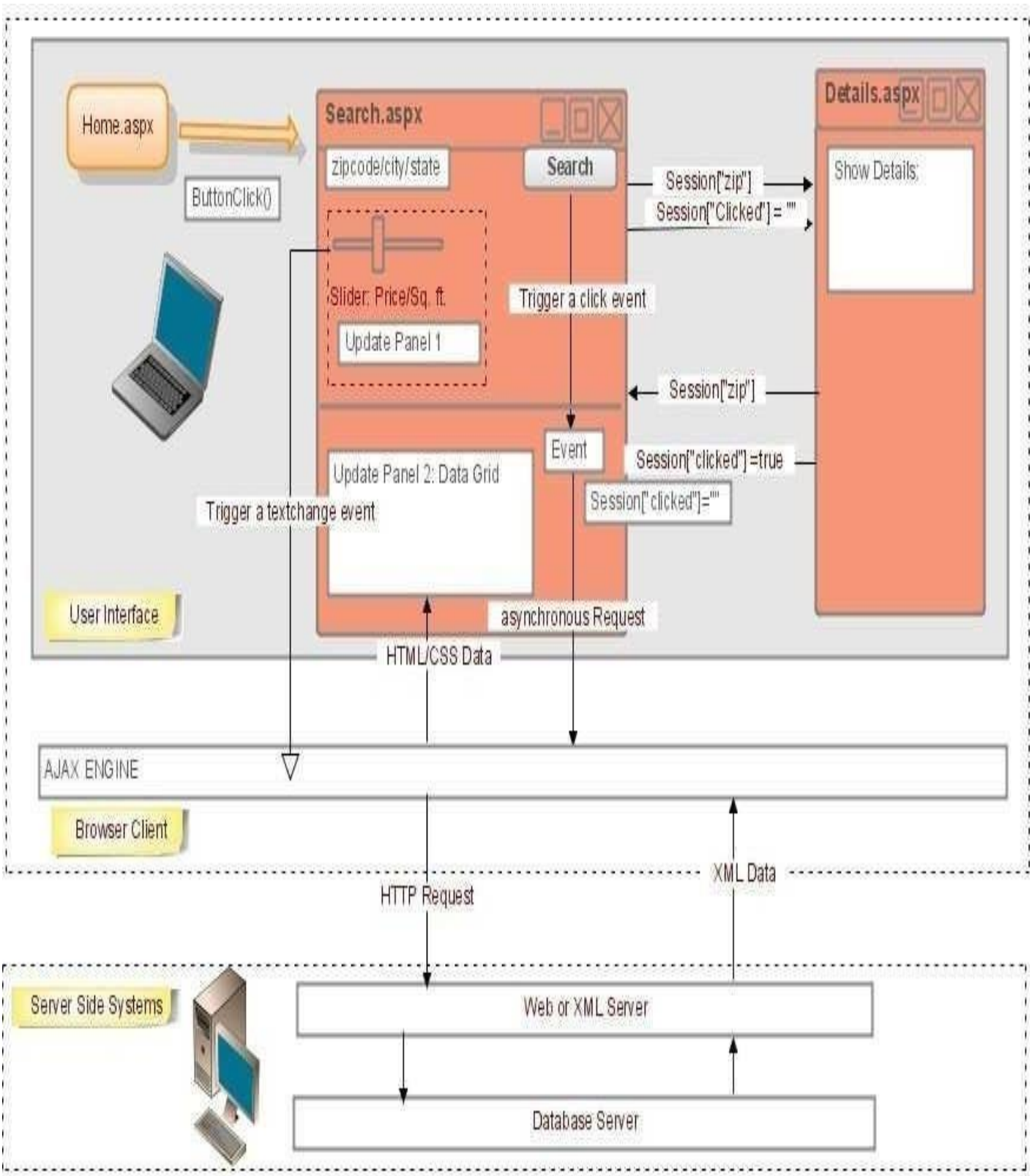
   bootstrap

   npmstart

5. Itwillinstallallthepackagesandaftercompletingitwill open {LOCALHOSTIP ADDRESS}copytheaddressandopenittochromesoyoucanseethe frontend of yourproject.

6. PROJECTPLANNING&SCHEDULING

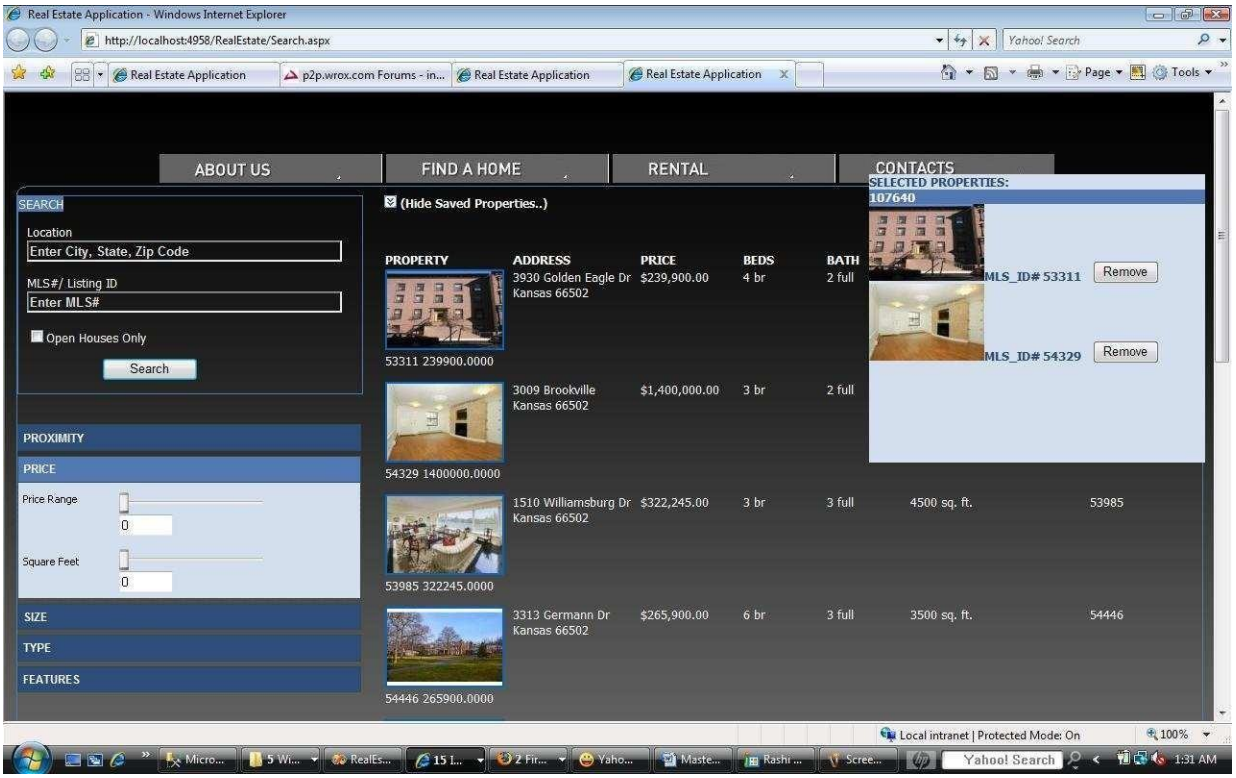
TECHNICALARCHITECTURE:

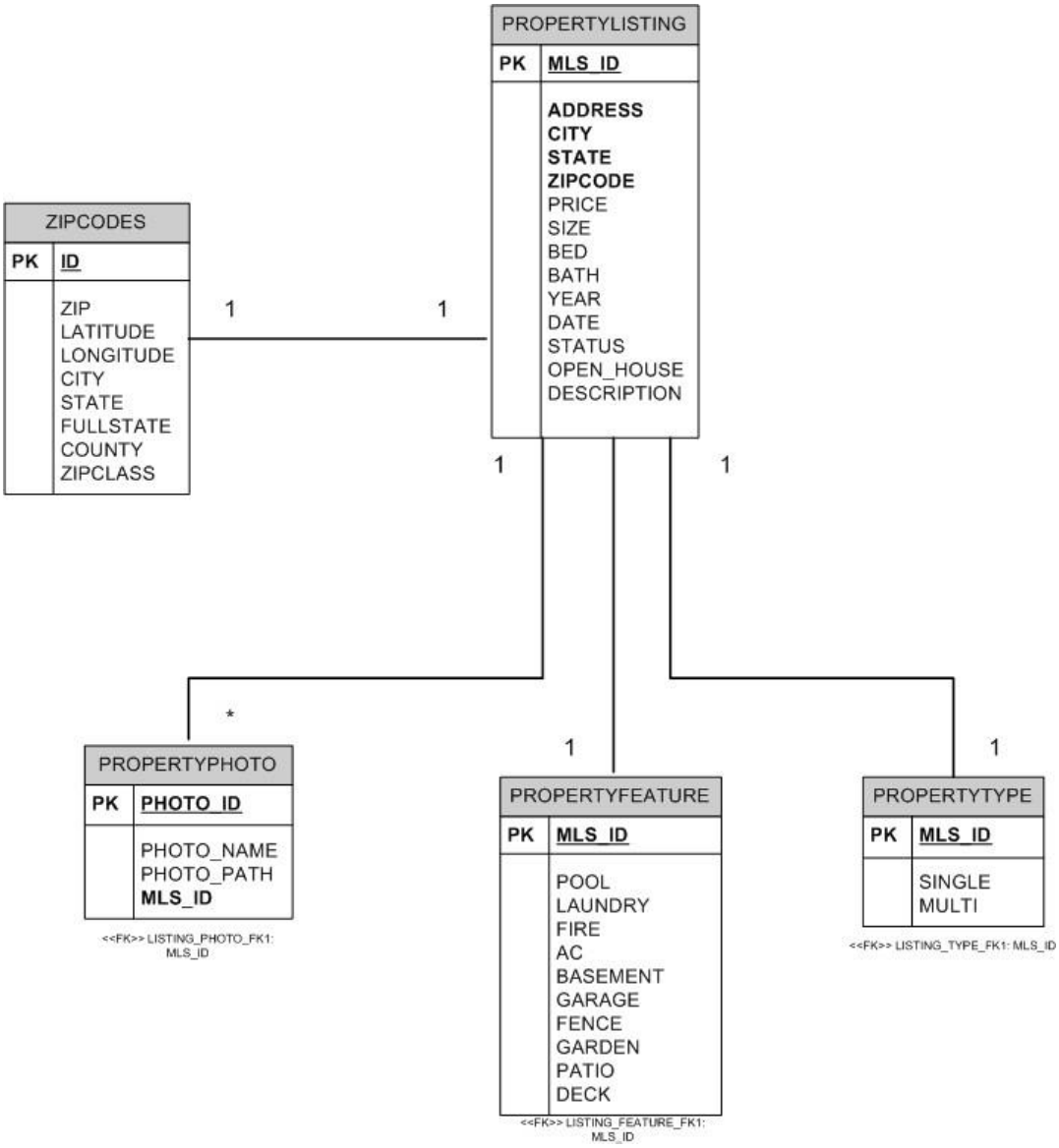


7. PERFORMANCETESTING

PERFORMANCEMETRICES:

ASP.NET Pages	Purpose
HomePage.aspx	Information about the Real Estate Company.
Search.aspx	Provides a search engine to the buyer, results are displayed on the data grid.
UploadListing.aspx	Uploads the photographs of the property.
Details.aspx	Displays the property details.




PROPERTYLISTING
PK
MLS_ID
ADDRESS
CITY
STATE
ZIPCODE
PRICE
SIZE
BED
BATH
YEAR
DATE
STATUS
OPEN_HOUSE
DESCRIPTION
ZIPCODES
PK
ID
ZIP
LATITUDE
LONGITUDE
CITY
STATE
FULLSTATE
COUNTY
ZIPCLASS
1
1
1
1
1
*
1
1
PROPERTYPHOTO
PK
PHOTO_ID
PHOTO_NAME
PHOTO_PATH
MLS_ID
<<FK>> LISTING_PHOTO_FK1: MLS_ID
PROPERTYFEATURE
PK
MLS_ID
POOL
LAUNDRY
FIRE
AC
BASEMENT
GARAGE
FENCE
GARDEN
PATIO
DECK
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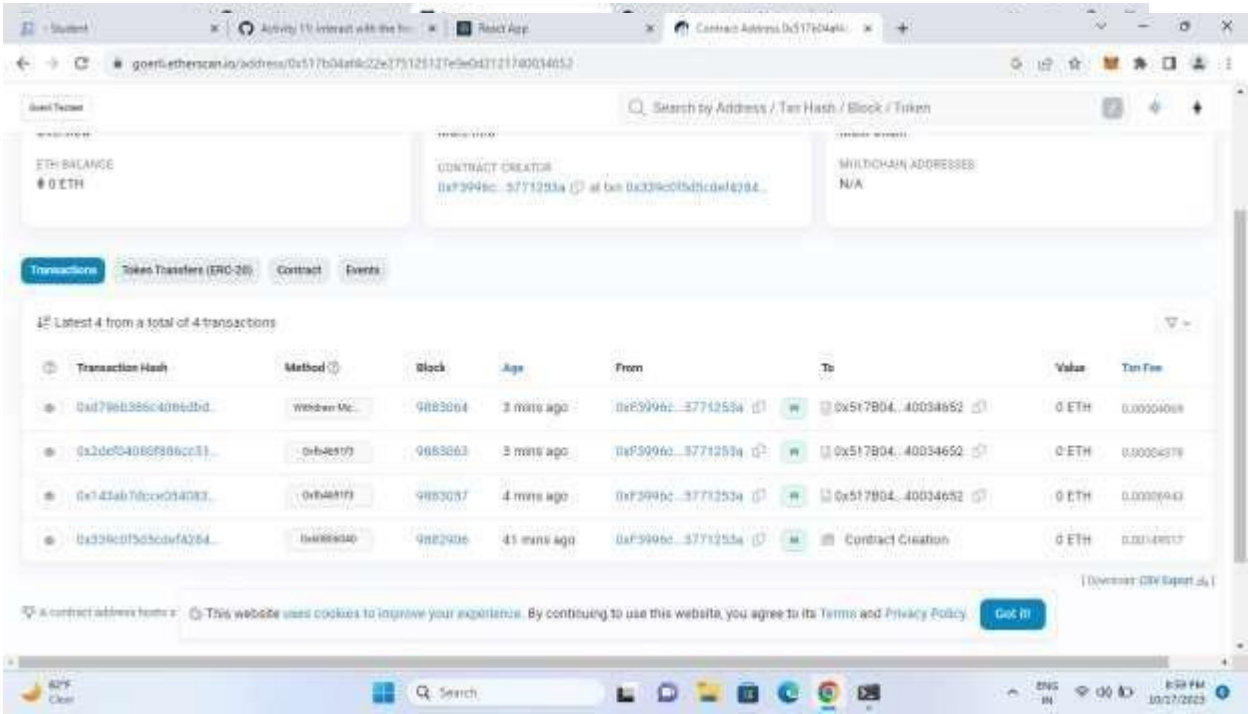
PROPERTYTYPE
PK
MLS_ID
SINGLE
MULTI
<<FK>> LISTING_TYPE_FK1: MLS_ID


Search by Address / Txn Hash / Block / Token
ETH BALANCE
0 ETH
CONTRACT CREATOR
MULTICHAIN ADDRESSES
N/A
Transactions
Token Transfers (ERC-20)
Contract
Events
Latest 4 from a total of 4 transactions
Transaction Hash
Method
Block
Age
From
To
Value
Txn Fee
Contract Creation
This website uses cookies to improve your experience. By continuing to use this website, you agree to its Terms and Privacy Policy.
Got it!

8. ADVANTAGES&DISADVANTAGES

Advantages:

- EfficiencyImprovement
- TransparencyEnhancement
- SecurityandDataIntegrity
- PolicyExecutionPrecision
- CompliancewithRegulations
- CostReduction
- AuditabilityandAccountability

Disadvantages:

- SecurityRisks
- Complexity
- RegulatoryChallenges
- DataPrivacyConcerns
- ResourceandTrainingRequirements
- IntegrationIssues
- EthicalandGovernanceConsiderations
- ChangeManagement

9. CONCLUSION

The idea of developing Real Estate Web Application originated when an immediate requirement aroused from local Real Estate Company to develop a new website for them. This company had its own website in production but wanted to re-design it with some attractive features which could help them fetch more business. The project started with an intention to develop an application specific to the needs of this company but later due to the lack of funds the project could not be continued. But with the continuous support of Dr. Andresen this application came into development. There are hundreds of real estate websites on the World Wide Web with same features but the intention of building this application was to design something new and innovative and include some cool features which have not been incorporated in these websites so far. The biggest challenge involved in this project was to gather the requirements and design its structure so that it can altogether have a new look. It also involved thinking about new features which can be incorporated in this application and could make the search of listings much easier for the real estate buyers. Understanding the structure of the application was the biggest problem on the start of the project. Finally, the scope of this application was defined which greatly helped in understanding what all features have to be included in the project. The whole emphasis in this application is given on the search criteria to help buyers to search for new property listings.

After the Requirement Specification, learning .NET 2005 and new AJAX controls was the second phase which gave me a great learning experience. From my past knowledge of .NET, working with the new version of Microsoft Visual Studio was not a big problem but incorporating AJAX features to it was a deal. I spent around two weeks of time learning these technologies with the help of online tutorials and sample applications. This learning brought me in a very comfortable position to think about what new AJAX features I can put up in the application.

10. FUTURESCOPE

Thefuturescopeofimplementingsmartcontractsincentralbanking holds great potential for reshaping the financialindustry and the operations of central banks. As technologycontinues to evolve, the scope for smart contracts in centralbanking is likely to expand, offering new opportunities andchallenges. Here are some aspects of the future scope:

- WiderAdoptionofCentralBankDigitalCurrencies (CBDCs)
- Cross-BorderTransactions
- DecentralizedFinance(DeFi)Integration
- AdvancedMonetaryPolicyTools
- GlobalRegulatoryFrameworks

Thefuturescopeofcentralbanksmartcontractsisdynamic andwillbeinfluencedbytechnologicaladvancements,regulatory changes, and the evolving financial ecosystem. While the potential benefits are significant, central banks must remain adaptableandforward-thinkingtonavigatetheopportunitiesand challenges that arise as smart contract technology continues to evolve.

11. APPENDIX

SOURCECODE:

```
// SPDX-License-Identifier: MIT
pragma solidity ^0.8.0;

contract PropertyDetail{
    address public owner;

    struct Property {
        string propertyId;
        string name;
        string location;
        string discription;
        address currentOwner;
    }

    mapping(string => Property) public properties;
    mapping(address => mapping(string => bool)) public hasAccess;

    event PropertyAdded(
        string indexed propertyId,
        string name,
        string location,
        address indexed owner
    );
    event PropertyTransferred(
        string indexed propertyId,
        address indexed from,
        address indexed to
    );

    constructor() {
```

```
    owner = msg.sender;
}

modifier onlyOwner() {
    require(msg.sender == owner, "Only contract owner can call this");
    _;
}

modifier hasPropertyAccess(string memory propertyId) {
    require(
        hasAccess[msg.sender][propertyId],
        "You don't have access to this property"
    );
    _;
}

function addProperty(
    string memory propertyId,
    string memory  name,
    string memory location,
    string memory _description
) external onlyOwner {
    require(
        bytes(properties[propertyId].propertyId).length == 0,
        "Property already exists"
    );

    properties[propertyId] = Property({
        propertyId: propertyId,
        name: name,
        location: location,
        discription : _description,
        currentOwner: owner
```

```
        });

        hasAccess[owner][propertyId] = true;

        emit PropertyAdded(propertyId, name, location, owner);
    }

    function transferProperty(
        string memory propertyId,
        address newOwner
    ) external hasPropertyAccess(propertyId) {
        require(newOwner != address(0), "Invalid new owner");

        address currentOwner = properties[propertyId].currentOwner;
        properties[propertyId].currentOwner = newOwner;

        hasAccess[currentOwner][propertyId] = false;
        hasAccess[newOwner][propertyId] = true;

        emit PropertyTransferred(propertyId, currentOwner, newOwner);
    }

    function getPropertyDetails(
        string memory propertyId
    ) external view returns (string memory, string memory, address) {
        Property memory prop = properties[propertyId];
        return (prop.name, prop.location, prop.currentOwner);
    }
}
```