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A PROPOSAL OF PROJECT ON

RENT MANAGEMENT SYSTEM

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A PROPOSAL ON

RENT MANAGEMENT SYSTEM

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ABSTRACT

Many private rental houses are being established so that to accommodate the demand of people who tend to rent houses. Due to this reasons, landlords face the problem of managing their rental houses and keep track of rental payments and information since they are just paper based. The project title **'Rent Management System'** is a digital application, which solves the problems faced by landlords. The users can register to the application by creating account of its own. Here, the users can add the information of tenant including its family details. This application is able to store data of monthly payments and hence notifies the user if payment date exceeds. The user is also able to add contract signed by the tenants and also their documents like citizenship, passport which does help in future issues.

Moreover, this application also calculates the due amount and advance by inserting the amount paid by the tenant. Daily, monthly and yearly transactions reports can also be observed, downloaded or printed through this application. Even the electricity meter reading of the house/room rented by the tenant can be added for the calculation of electricity used in upcoming months.

Therefore, this application tends to help landlords manage their information digitally with the aim of minimizing the risk of losing data and also helping them advancing their housing system.

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LIST OF ABBREVIATIONS

MVC	Model View Controller
SQL	Structured Query Language
SSMS	Sql Server Management System

CHAPTER 1: INTRODUCTION

1.1 Background

Housing is one of the basic needs of life. It has great economic, social, cultural and personal importance to the quality of life. All over the world a significant number of families live in rental housing especially private rental housing. In developing countries large number of households tends to be of middle or low income. Therefore the rental houses are highly demanded and are tend to be built. This is advantageous to landlords since they increase their profit through rents paid by the tenants. As the number of tenants tend to increase, the management of the rental houses tend to be difficult since most of them are paper based. Some tenant can use this weakness as a chance to evade paying the rent hence loss to the landlords.

Thus the aim of this project is to help landlord to manage rental housing, such as personal information of the tenants, monthly payment records. This will reduce the risk of loss of information and tenants would not be able to take advantage of carelessness of the landlord. Contracts which are signed between the tenant and landlord can also be uploaded in our application. Also if the landlord have a habit of forgetting payment dates and electricity meter reading, this application will notify if payment date is exceeded and also stores data of monthly readings of electricity/water used by the tenants over a month. [1]

1.2 Problem Statement

The data tends to grow time after time since more tenants increases. Since the data is manually recorded and managed, it is hard to keep track of the data while it is paper based. Lack of computerized and more sophisticated way for the landlords to manage the information about their houses and tenants. The current system that they have is manual recording of the information. The security of data is not fully assured since they can be easily lost in the manual way of keeping their records. These manual records tends to get lost and there is no way we can retrieve the lost the information.

Thus keeping information as major factor, if we digitalize, it could help landlord in a tremendous way and many bulk of paper used in a year for the collection of information can saved.

1.3 Scope

This application will be a user friendly such that users will not face any problems while entering personal details and transactions bills. As the demand of private rental housing is increasing in many developing, and in countries such as Nepal where large number of households tends to be of middle or low income, renting house/room is also a source of income to such households. And it would be a burden to landlords if tenant keeps on increase as it will be difficult to keep track of information of every tenants.

Hence all these information and data can be uploaded in this application which would ease the users to manage their housings. And they can also review any information of any tenant as per their requirement.

1.4 Objective

To provide platform to store monthly payments, personal information, calculate dues and electricity bill, also to notify the users about payment dates. Which will used by the users according to the situation.

CHAPTER 3: LITERATURE REVIEW

The rental housing came into play due to the seriousness of housing problems. Not most people can afford building houses due to several factor such as poor income hence there was a need for the rental houses. In past some app have been launched for rental management system such as Buildium, Turbotenant.

2.1 Existing

Buildium:

Buildium is an American property management software company, it was founded in 2004 and headquartered in Boston, Massachusetts, provide cloud based, real estate software. Its property management software allows real estate professionals to manage property portfolios, including leasing, accounting and operations. It has features like ePay, tenant screening and renters insurance. [5]

Turbotenant:

Turbotenant is a property management solution. It was founded in 2015 by Sarnen Steinbath. Turbotenant is equipped with several features to help landlords market and manage their properties. These features include automated listing syndication, lead tracking, online rental application and automated rent collection. It was built for independent landlords that manage 1 to 100 units. Turbotenant is a lightweight system that does not offer as many features as other property management solutions. [6]

2.2 Proposed

In this proposed project users (landlords) will be able to manage rental housing, such as personal information of the tenants, monthly payment records. This will reduce the risk of loss of information and tenants would not be able to take advantage of carelessness of the landlord. Contracts which are signed between the tenant and landlord can also be uploaded in our application. Also if the landlord have a habit of forgetting payment dates and electricity meter reading, this application will notify if payment date is exceeded and also stores data of monthly readings of electricity/water used by the tenants over a month.

CHAPTER 3: METHODOLOGY

3.1 Agile Methodology

In software development, agile practices include requirement gathering and solutions improvement through the collaborative effort of self-organizing and cross functional teams with their customer/end users, adaptive planning, evolutionary development, early delivery, continual improvement and flexible responses to change in requirements, capacity and understanding of the problem to be solved. The agile software development methodology is one of the simplest and effective processes to turn a vision for business need into software solution. In the agile model in software testing, both development and testing activities are concurrent, unlike the waterfall model. The agile software development emphasizes on four core values.

1. Individual and team interaction over processes and tools
2. Working software over comprehensive document
3. Customer collaboration over contract negotiation
4. Responding to change over following a plan

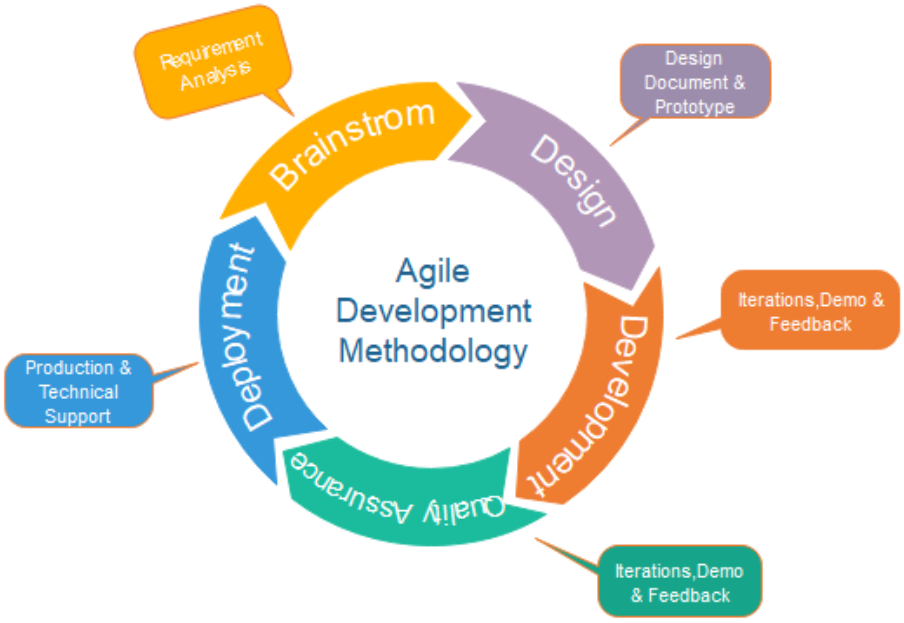

Fig. Agile Model

1. Requirement Gathering

The product owner will discuss key requirements with client and prepare a documentation to outline them, including what features will be supported and the proposed end results. It is advisable to keep the requirement to a minimum as they can be added to in later stages. In this phase the product owner will also estimate the time and cost of potential project.

2. Designing

In this phase the UI/UX designer designs the architecture of the project. Here the team will create a mock-up of the user interface. This stage involves further input from owners to fully flesh out requirements on a diagram and determine the product functionality.

3. Implementation

The developers will work with UI/UX designer to combine all product requirement and customer feedback, turning the design into code. The goal is to build the bare functionality of the product by the end of the first iteration or sprint.

4. Testing

The quality assurance team performs some test to ensure the software is fully functional. These agile team members will test the system to ensure code is clean, if potential bugs or defects are detected, the developers will address them swiftly. Users training will also takes place during this phase, which will require more documentation.

5. Deployment

The software will now be fully deployed and made available to customers. This action moves it into the maintenance phase. During this phase, the software development team will provide ongoing support to keep the system running smoothly and resolve any new bugs. [7]

3.2 Software Development Tools

C# (C Sharp):

It is an object oriented programming language created by Microsoft that runs on the .NET Framework. C# has roots from the C family, and the language is close to the other popular languages like C++ and java. C# is used for development of mobile application, web application (where any application can be developed by MVC method), Desktop applications, Games etc. [2]

Dot Net (.Net):

.NET is a free, open-source development platform for building many kinds of apps, such as web apps, web API's, microservices, mobile apps, games etc. We can create .NET apps for many operating systems, including Windows, macOS, Linux, Android, iOS.

Dapper

Dapper is an open source, light weight micro ORM, developed by the stack overflow team for the .NET platform. It was developed considering its ability to reduce the code size and the time spent on mapping objects from data reader and the models. It also helped in moving the performance of various database operation. In summary, dapper is the go-to option for developing database connected application with lesser time, lesser effort and better efficiency. [3]

SSMS

SQL server management studio is an integrated environment for managing any SQL infrastructure. It can be used to access, configure, manage, administer, and develop all components of SQL server. SSMs provide a single comprehensive utility that combines a broad group of graphical tools with many rich script editors to provide access to SQL server for developers and database administrators of all skill levels.[4]

CHAPTER 4: LIST OF FIGURES

System Overview

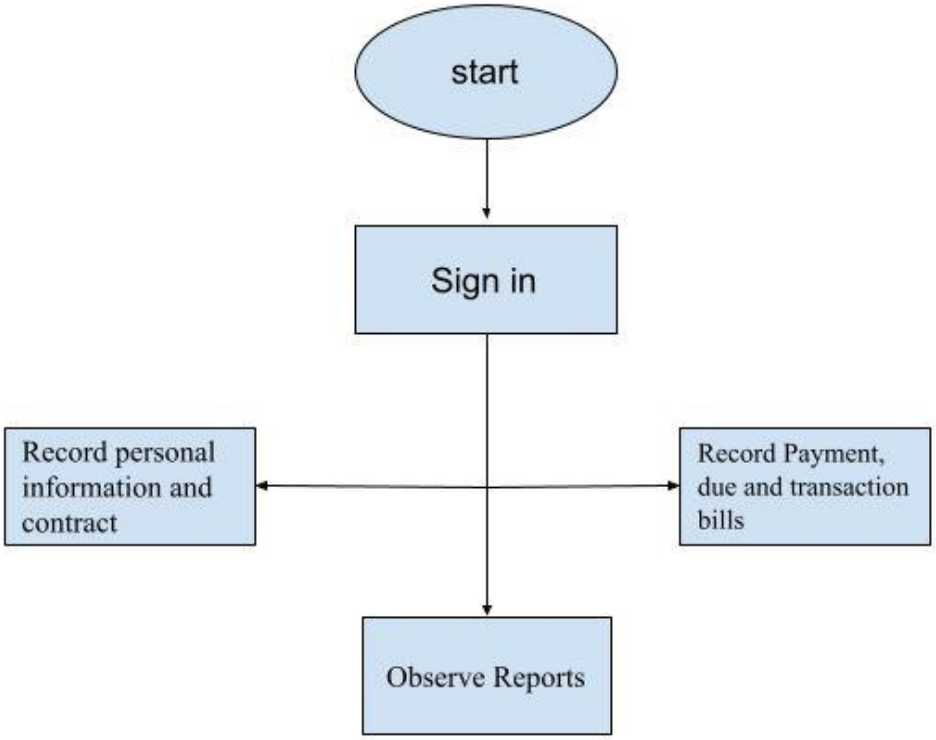

Fig : Block Diagram of Proposed Application

CHAPTER 5: EXPECTED OUTCOMES

Users/landlords will be able to upload information of tenant and contract signed between them. The application makes sure that these vital information does not get wiped out by any circumstances. Also the users/landlords are able to calculate electricity/water bill while entering monthly rental payment. Annual income of rental payment can also be observed from the “Reports” section of the application, which will help to ensure proper management of household transactions.

CHAPTER 6: LIMITATION

- Malfunction in server side may lead to data leakage.
- Sharing the information to untrusted people with malicious intent might result in fraud.

CHAPTER 7: FUTURE ENHANCEMETS

This application can be upgraded in such a way, where landlord can advertise their house, so that they can attain as much as possible which become a source of income. These advertisement can help families to find houses via technology rather than physically searching for rental houses.

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