Smart Estimation for Construction

Pavankumar Naik[*1], Ragini B Desai[2], Megha R. Tirlapur[2], Rekha L Jallapur[2], Vijayalakshmi H Timmareddy[2]

[*1]Assistant Professor Department of Computer Science and Engineering, SKSVMACET, Laxmeshwar, Karnataka, India

[2]Student Department of Computer Science and Engineering, SKSVMACET, Laxmeshwar, Karnataka, India

ABSTRACT

The Smart Estimation for Construction is made especially for people those who are unaware of construction work related to the estimation of raw materials and labour required to make a construction project (buildings). The main difficulty arises during construction is to decide the quantity of raw materials, labours and resources required in future. The software strives to identify the causes of price differences arising at each stage of cost calculation, and provides the solutions of cost reduction. The main challenge in the existing software is the cost estimation of construction with more accuracy. Many estimation models are introduced in the course of time, which concludes that software cost estimation is not precise and new methods or models should be proposed very often. Cost, quantity and quality analysis for building structures are developed at all stages of the investment process. The project describes the basic forms of overall cost calculation of building structures and building works.

Keywords : Construction Project, Prediction Factor, Estimation Model, Cost Accounting Systems

I. INTRODUCTION

The Smart Estimation for Construction gives an overview of estimation of cost, quality and quantity of raw materials required for the construction. The system is mainly developed for residential purpose. It also provides information about the local labours and contractors. The users are also provided with the basic building plans. The proposed estimate is based on previous experience with the constructed residential buildings. Our software can also be used in various phases of investments made during construction.

A. MOTIVATION

- The difficulty that arises during construction to decide the cost, quantity and quality of raw materials, labours and resources required in future.
- The existing software, which provides the imprecise estimated result.

B. PROBLEM STATEMENT

- The Smart Estimation for Construction is made especially for people those who are unaware of construction work related to estimation of raw materials and labour required to make a construction project (buildings).
- The main difficulty arises during construction is to decide the cost, quantity and quality of raw materials, labours and resources required in future.

C. OBJECTIVES OF THE PROJECT

▪ The main objective of the project is to provide a precise estimation of quantity, quality of raw materials and overall cost of the construction.

▪ The software strives to identify the causes of price differences arising at each stage of cost calculation, and provides the solutions of cost reduction.

II. LITERATURE SURVEY

In [1], Oleg Forbatok is aimed to look into the parameters that drive the price change of the construction project at its early stage of the planning phase. But it has few drawbacks where we are not able to predict the sudden market price fluctuations. The desired preciseness can be achieved through historical data which means that the model implementation for freshly established locations can be way to complicated task and may result in estimation model not being valid. The current estimation model functions as a separate instance and is not integrated into any cost accounting systems.

In [2], Neven Martinec based on his previous experience he use to estimate the cost of residential buildings. The drawback is estimation cost is not standard due to which it allows us to approximately estimate construction costs of future residential buildings.

In [3], Agnieszka Lesniak, Edyta Plebankiewicz describes the basic forms of cost calculation of building structures and building works applied in Poland. The most frequently used sources of price information for this purpose are presented herein. The drawback is that it provides only the information of estimation process in Poland.

In [4], the software provides only the quantity of raw materials needed for the construction purpose.

The estimated result will not be precise. It does not provide the overall cost and other information.

In [5], the software is very complicated to use and we require skilled person to operate it.

Some of the existing software provides only the cost of the raw materials and we need to pay to use them which does not ensure the accurate estimation of the construction.

To overcome these drawbacks we are developing software which provides quality, quantity and overall cost of the construction. In addition to these it also provides the information about the local labors, contractors and other service providers. The basic building plans are also included in this software.

The term cost estimation in the construction business implies calculation of expected costs that are included in the production and a commissioning of the construction project. Moreover estimation engineers often include unexpected costs that may occur during production and commissioning of the planned project. The cost structure of the construction project implies material and labour costs according to the preliminary project plans and requirements for the building.

The cost estimation is defined according to the preliminary working drawings, plans or possible blueprints. As a process, the cost estimating is described as a technical function that is conducted in order to predict the total cost of the project in a given item with the use of the maximum available information and resources related to the project

The prediction factor can be understood that during the cost estimation process, the access to the information could be limited and the time is one of the main constraints during the cost estimating. Even though it is important to conduct estimation process as accurately as possible, it is rarely achievable to

provide 100% accurate cost of the construction project at initial stage of the planning.

III. PROPOSED SYSTEM

The proposed system is having many advantages over the existing system. The main objective behind preparing this product is that to give a person a complete information in addition to the estimation. It even helps the user to get an overall view of their construction work in an easier way.

The proposed system works as follows:

- The system is fed with an estimate of the raw materials and other estimates that help a builder to estimate the amount of materials that are required to construct a building.
- The system is also fed with the cost of various raw materials, so it automatically calculates the cost of those materials.
- The system also consists of an estimate of the labour power needed to make the project.
- Thus the system then gives a final estimated result that helps the people to get the total project cost within minutes.

IV.ARCHITECTURE
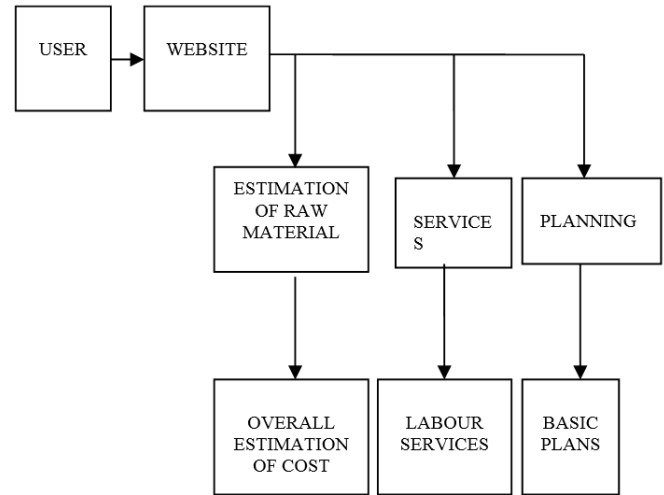
Figure 1 : Block Diagram of Smart Estimation for Construction

- The above block diagram represents the **Smart Estimation for Construction, which** gives an overview of estimation of cost, quality and quantity of raw materials required for the construction.

- The system is mainly developed for residential purpose. It also provides information about the local labors and contractors.

- The users are also provided with the basic building plans. The proposed estimate is based on previous experience with the constructed residential buildings. Our software can also be used in various phases of investments made during construction.

V. BENEFITS

- In addition to the estimation, the developed software also provides the labor details of the area.
- It provides the home for sale through requesting contractor.
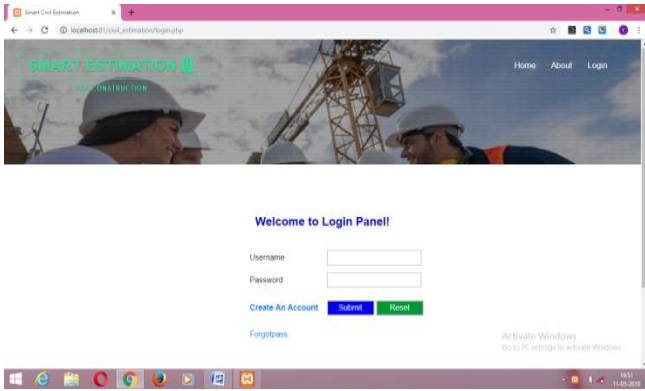- The software also provides the blueprints.

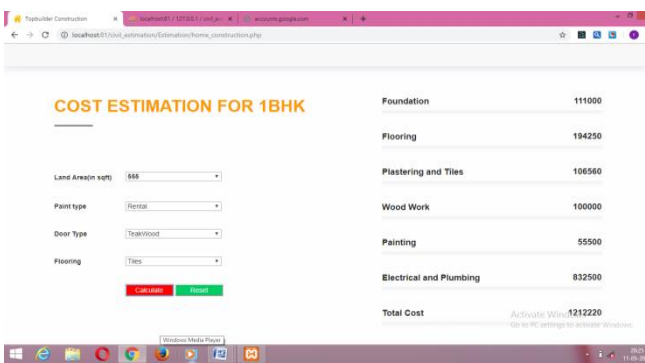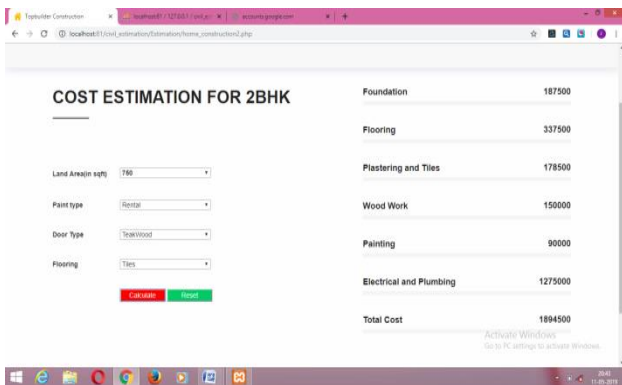## VI. RESULTS

Figure 5 :Admin page

Figure 2 : login page

Figure 6 : contractor page

Figure 3 : Cost Estimation For 1BHK
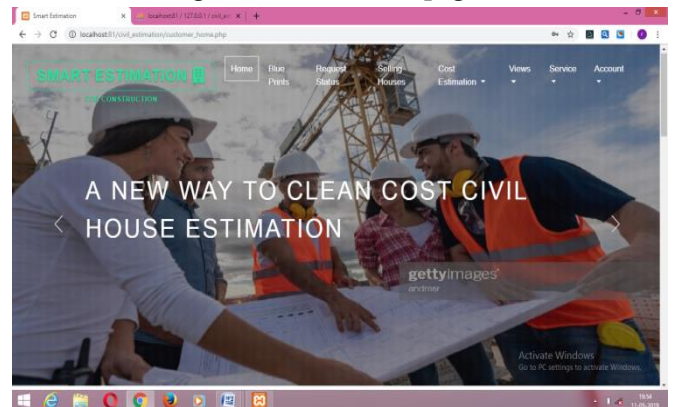

Figure 7 :customer page
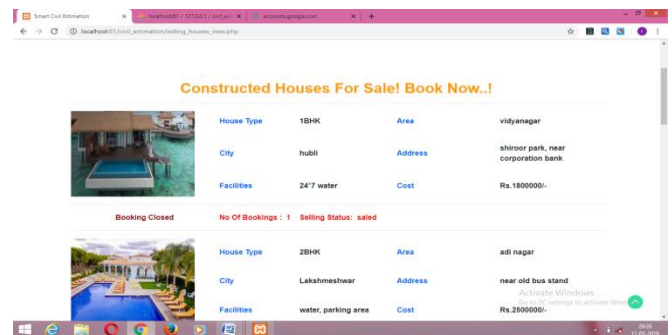

Figure 4 :Cost Estimation For 2BHK

Figure 8 :Constructed House For Sale Page

VII. CONCLUSION

The developed software gives an overview of estimation of cost, quality and quantity of raw materials, required for the construction. And especially made for people those who are unaware of construction work related to the estimation of raw materials and labour required to make a construction project (buildings). It also provides information about

the local labours and contractors. It also provides the home for sale through requesting contractor. Thus the system then gives a final estimated result that helps the people to get the total project cost within minutes. r.

VIII. REFERENCES

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