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Design and Implementation of Buildings Plans Database and Production of purpose plan to user

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Abstract

In the last twenty years, Topic of computer software in civil engineering with the aim of reducing costs, time and increasing abilities was considered by researchers and scientists. Ability of using computer software in civil engineering due to the daily increasing of a variety of constructions and buildings is crucial and necessary. Recent advances in the field of programming and other relevant technologies, using computer software in civil engineering in an easy and low price methods to users. The primary reviews shows that if we want to achieve desired goals, we should collect a data base from all of architectural plans, that users can search between them, then they can pick one in their terms of the criteria. The main objective of this THESIS is Implementation and designing a software that it can choose the best case in the data base in the base of situations and details that user gave to it. By using this software users can be able to search easily between building plans and choose the best one; according to user's situation that introduced previously. You can search the data base for the informed map, and this is one of features of this software. Finally the questionnaire design software assets in question from different points of view, then evaluate the results; then the results obtained, shows users satisfaction.

Keywords: Buildings Plans Database

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Introduction:

Due to the growing need for housing and the trend towards house beautification, Most of the attention is on building plans, but due to the rising cost of land residential, land base is getting smaller and smaller, with smaller land base, To be the best form of residential land use, attention has increased due to layout of a housing unit; But Considering that drawing a map of all municipal regulations are adhered is very expensive; Also There aren't a variety of design.

If we want to have different models of executive Maps, We Must pay exorbitant fees; that's why we decided to provide a bank of residential maps with different infrastructures and different views.

It can help civil engineers and residential home owners to have an identical default from a Building that will be constructed in near future. This can reduce the costs it can also improve buildings plan and causing the owner's consent.

Due to the high cost of construction drawings for those who want to build their building and it is also time-consuming for them, this system can be very useful for users.

In this manner it can s offer maps to users ,so users can choose based on size of their land base with their own taste And implement the plan.

In other point for those who have to design and mapping; by showing the databases plans to customers they can understand customers' trend and favor and draw a perfect plan for them.

On the other hand with the increasing number of maps they can be used in commercial and industrial mega-projects; this means that The Software can find the weaknesses of the similar plans and with many alternation in some parts it helps in time and costs; as a result with these manners you have a perfect design to offer to customers.

- **The impact of computers on drawing :**

Architecture Drawing is a Technical design of building That Belong to the category that defined architecture.

Architectural drawings by architects and others are used for a number of purposes; In order to develop a design idea into a coherent plan to: communicate the ideas and concepts, convince customers from benefits of design, enable a building contractor to build it, as background for the completed work and, submit a record of a building that already exists.

Architectural drawings, according to a series of contracts it include:

- Specific comments (Like: Floor plans, sections, etc.)
- Paper size

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- units of measurement and scales,
- annotation
- Mutual referencing

Are drawn.

It is customary that they drawing with paintings on paper with rapid or similar material to be made, and any copy required to be made painstakingly by hand.

The twentieth century saw a shift to drawing on tracing paper, So that mechanical copies could be run effectively. PC development had a major impact on the methods used to design and create technical drawings. Design guidebook is almost obsolete and opening up new possibilities of form using organic shapes and complex geometry. Today, most paintings are created using the software's code.

- **The benefits of mechanization of the map selection :**

Construction management of the maps software can be looked from different directions, because this system is one of the most time consuming and most expensive parts of a building.

Select a suitable map has a large attachments to many factors therefore we have to work hard to make a system that can respond without pause to a user's selection criteria.

In the past, users must first construct a building plan of their map to a map designer whom at each stage give implementation plan to Customers, therefore map designer must draw a map that approved by the Engineering Council, and this one is the time consuming process of construction of a building; Therefore, these efforts will be undertaken to reduce the time.

If you plan to implement engineering maps of the engineering organization, the diversity of maps for users is low. However with a mechanized system, categories and provide maps approved by the engineering council and a proper map for the users is very Simplified. So that using the area as well as the dimensions of the map, maps of the system selects and chooses one of them according to taste of the users.

In addition to the items listed, in different views can be used to pay the benefits provided in the following image is clear.

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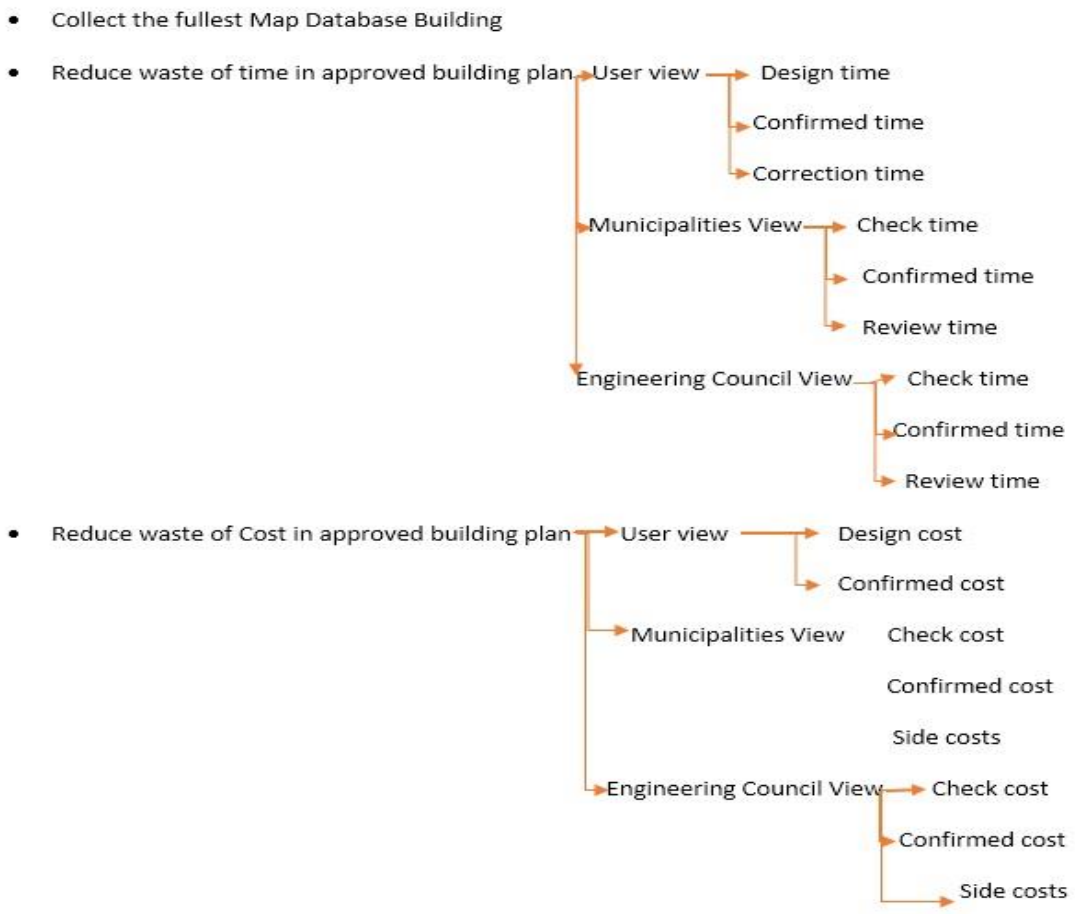


Figure 1. The benefits of the proposed methods.

- Economic savings plan

The financial cost has always been one of the important aspects of human choice as a result of financial problems will have a great impact on the user's choice, As a result, you should try to choose an system that have the lowest costs, then user will feel to it.

It is also the cost of drawing a map for users is high, and also, repeat, bugs and apply user preferences will also lead to changes in plans; But by mechanization the map and the increasing number of maps, user can easily choose the best map.

This project, in addition to economic benefits and economic savings for the user has an economic savings for engineer's council. The first thing to do is to sell the system, it means to use the mechanized system

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maps, and you can buy it or use it for time limit. Following the sale of the system can bring benefit to engineer's council. Another aspect is to reduce the cost of paper. Therefore, in this part of the project would have economic considerations?

- Time savings plan

As previously mentioned, one of the most time consuming parts of a building is choosing the map and draw a map of the building. Because it has a direct relationship with human tastes and preferences of each person is different from another person. That's why we should try to fix the time to meet all tastes and favors. For this reason, the construction of a mechanized system map selection is very important in maintaining tastes.

This is too important time for users, because instead of a long time for users to draw and approved building plan it's only take a few minutes' to find it ,And if necessary to make changes, they will change in the short run. also The project has a save timing for engineering council because in the past, experts for each map spent time to check and verify it; But with this system, Because of all the maps have already been approved, it will be spend much less time.

- Software implementation

At this point we're trying to implement the system. To do this we need to select a suitable programming language. For this reason, for the implementation of systems we will use programming language C # and for data storage and information as well as maps of the database we will use SQL SERVER. In addition, we will explain some functions and classes used in implementing this software.

- Evaluate the proposed system

Assessment system will always be evaluated with different criteria:

- **User friendly**: it means Users of the software will have the full consent; this measure can be effective in assessing and also meet the needs of users.

- **Response time**: the time that the application need respond to user's requests, notice that: The standard delay response time is different, because the standard response time delay, when they consider that the system responds to a user action, but the response time has been fixed to calculate the amount of time a user will need.

- **Easy to use**: How much is hard to use software? Complex software are always less popular, In order to gain more popularity and pervasiveness of software we tried as much as possible to design a simple software.

- **Reliability:** How much can be trusted to software to choose the best option for the user? Reliability is one of the main criteria in the evaluation of all systems, for this reason, the reliability of the proposed system has been one of the evaluation criteria. The reliability of

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the proposed system will have a direct relationship to the number of maps. This means that if the database has more maps, the software recommend more maps to users.

- **Satisfaction**: How much of the software is user satisfaction? This consent can be included suggestions, this means that by using their satisfaction level in the next version of the software, we'll see the increasing of the customer satisfaction.

Criteria mentioned in this article have studied from the perspective of the three categories of people:

- **Normal users:** Ordinary users selected from 50 different jobs that the construction or purchase of a single building or designing a building plan had taken into account. Of these individuals were asked to work with the software As well as functional when their own again experienced a map without this software are tested. And provide comment on proposed questionnaire. Since, the expert user comments and asked people with different jobs require that comments from two perspectives, we also considered the Chartered Civil and computer

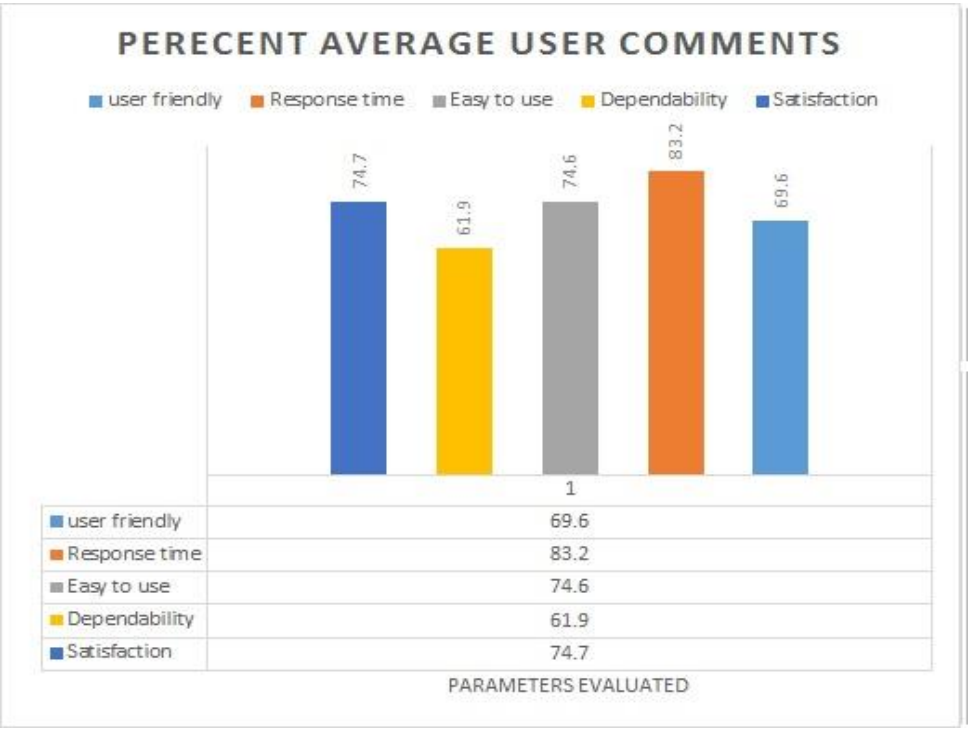


Figure 2. Chart of percent the average user comments.

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As is clear from the graph, Response time is the highest percentage of normal users and Percent reliability is lowest. Means the average user thinks that response time of the system has increased significantly; On the other hand, users do not have a high percentage of reliability of the proposed system. User satisfaction from this system is a significant and the percentage is 74.7%. Ease of use is also with an average of 74.6% of normal users. The software user satisfaction with narrowly simplicity of use is an average of 69.9%.

- **Computer experts:** The importance of considering the results of computer experts is for this purpose to check the system with computer vision experts Because, the studies that they done is from the perspective of system security software or computer-based design and engineering principles provided, Also The computer expert opinion can improve the system design and it can help us to make the next version of the system design more respect.

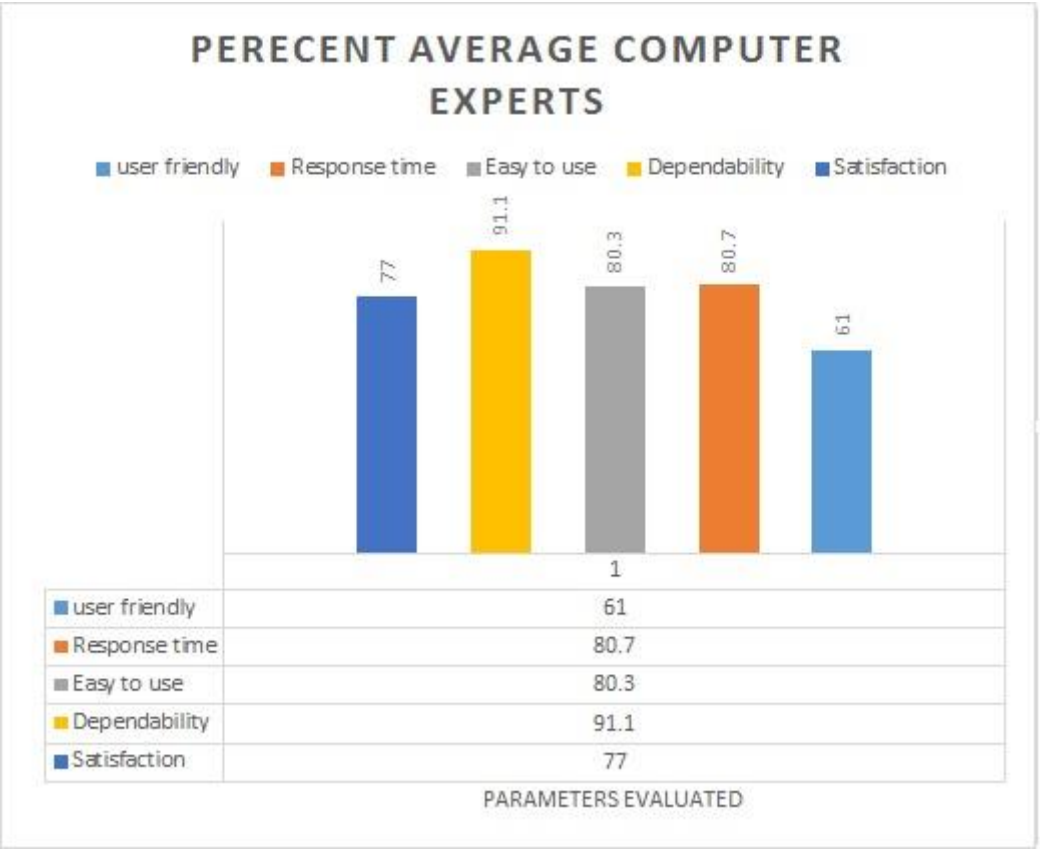


Figure 3. Chart of percent the average computer experts.

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According to computer expert's graph, the reliability of the proposed system has the highest average among the evaluation criteria .In Experts vision, this system has an average response time 80.7% percent. The easy to use, response time is ranked after. Satisfaction rate for experts is 77% and the lowest average is for satisfaction with software.

- **Civil , planning and architectural experts:** In addition to the views and opinions that computer users gives about how to design the system and how it's programming, Experts in civil and architectural can comment about mechanisms that used in the selection of plans and maps. So the 20 civil and architectural experts were also asked their opinions, their comments are so important for us because there have construction and building attitude.

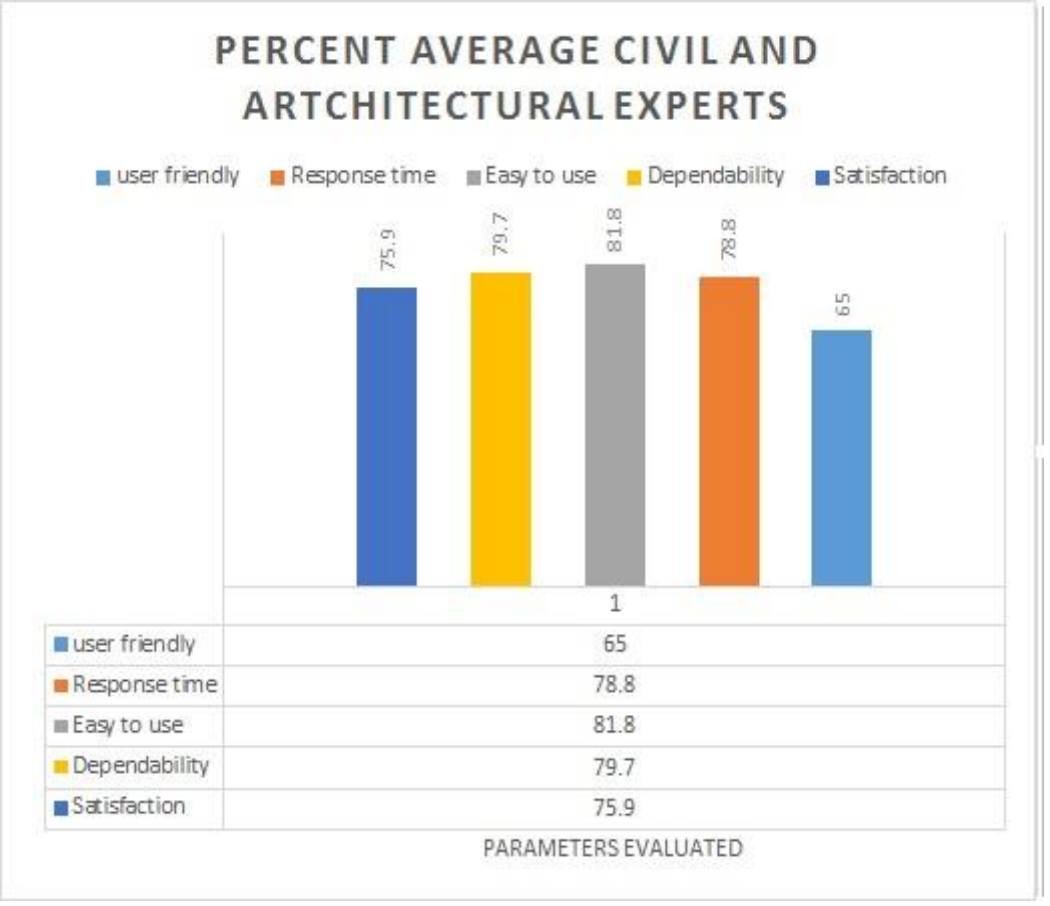


Figure 4. Chart of percent the average civil and architectural experts.

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According to civil and architectural expert's diagram, it can be concluded that the experts greatly (81.6 percent) are satisfied of the simplicity of using the proposed system. Of all the options, user-friendly environment has the lowest percentage of average system, in terms of civil Experts. Chartered Civil measure of reliability with an average of 79.7% is in second place; other measure like: response time and satisfaction with 78.7 and 75.9 are certified in our ranking.

- **reviewing three perspectives:**

To view the comments graph, the highest percentage average is for " response time" by the amount of 80.9% from the perspective of a normal user and computer and software experts, "Reliability" has an average of 79.6% and the "easy to use" has an average of 78.8%.

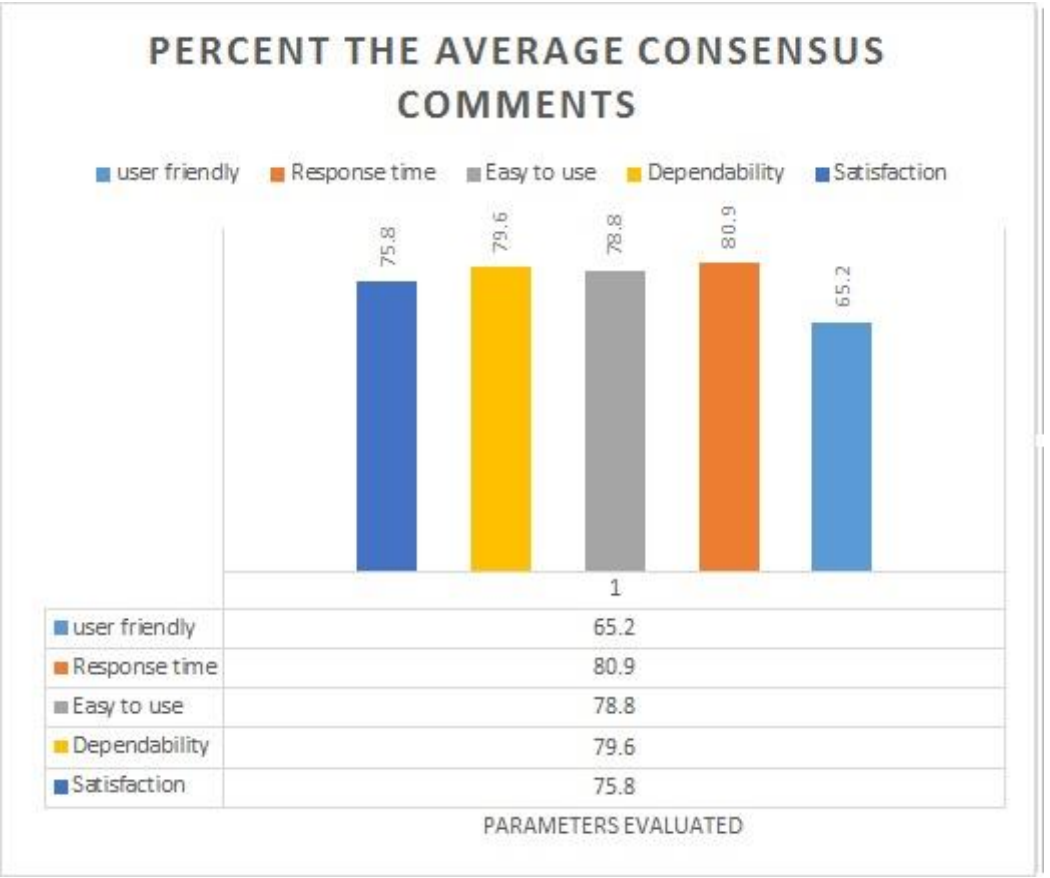


Figure 5. Chart of percent the average consensus Comments.

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The satisfaction of this system from the perspective of normal users and experts has percentage of average 75.8%. The lowest percentage of average standard software is "user-friendly" with a 65.2%.

- **Discussion and conclusion**

Due to the impact of computers in all fields of modern science these days, And due to productivity power of science with using computer, The need arises that if we want to simplify everything, we must use computer, According to the understanding of the time-consuming practice of discovery and provide a user-friendly map, we decided that this activity will also practice using the computer to, Which would also "reduce the time" and "simplicity" is accurate.

Therefore, a software provided that could meet the needs of users considerably. The claims in the fourth section of this letter, according to figures retrieved by normal users and computer experts as well as experts in civil that Each of the are from a different perspective to look at it, we have demonstrated it.

Also the response time that, is an important factor in today's valuations and we can decreased it dramatically. We concluded that if we using the computer to meet the multiple needs, it can also simply and accurately do our requests. In addition to all of the above.

The new soft wares for their own proven, needs time and also to be used by lots of users; The standard computer experts because of their familiarity with working mechanisms coding and database management software and how it has gained more points; For this reason, it is likely that, because of the extent of the bank's The results would be accurate.

It should be noted that this software is the only software available to manage the construction plans that's why the problems are certainly! And by providing new ideas can develop and update of the software to meet the needs of all users.

- **Suggested ideas:**

One of the things that has created a negative impact on the use of the software is its inaccessibility and this software is only for Windows executable; In order to solve this problem site can be provided that can satisfy all the needs of users at any place and time.

This can play a useful role in reduce application response time and also satisfaction of customers; On the other hand the software system is being used only in residential building plans.

In addition you can also add the industrial map then you can also use them for buildings; if the system is to be created to manage the building's interior photos, Interior decoration can also be used

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to contract; this can be a comprehensive software system for managing a building to created maps and interior decoration.

However, when system viewed on computer vision, The high number of records in the database, Systems will having trouble to finding the perfect map of the building between thousands maps, Therefore we can to fix the problem with using Property of parallelism to find maps; Select any part of the search operation so that the screening by using a separate processing unit stuck; In this way you can reduce the time searching system.

In this way we can Gained more satisfaction from the user.

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