

Design and Implementation of Loan Management System using ISI Server, PhP and MySql



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Abstract: Credit institutions are critical organizations whose role in society and modern economy is very important for issuing loan to individuals, businesses and other organizations. Before such institutions came to the scene, there was no secure place for individuals and businesses to get credit, which caused a lot of chaos. The proposed loan management system brings various loan portfolios on one platform to assist the atomization of servicing and management of such credit institutions. Branches of credit institutions are connected with the loan management system. If client provides all required information and submit all required documents, the loan underwriter will verify and approve the loan from the system. The proposed system will automatically inform to the applicant with required information for proceeding. Loan underwriter can manage and monitor multiple loan portfolios from multiple locations through a single platform starting from prospecting to closure. The proposed system also simplifies the decision making processes. The architecture of loan management system using ISI Server, PhP and MySql is proposed in this work. The suggested architecture consists of four primary components: Clients, internet link, server, and branches of credit institutions. Clients can register, apply and trace their loan through online via desktop, laptop, and portable tablet or mobile. A dependable and safe server is taken into account to actualize the framework. In addition, reliability and security problems considered for designing the system are stated here. Some portion of the suggested architecture is currently being implemented and tested that is also outlined in this paper.

Keywords : loan management; credit institutions ; ISI; PhP; MySql

I. INTRODUCTION

The Loan Management System (MLS) assists numerous features of credit portfolio which starts from early stage of applying loan and ends at closure of account. MLS also helps to make better decisions and choices on many issues in loan management processes. The proposed web based MLS will be installed on server and client will access MLS using internet. There are several languages that can be used for server-side programming such as: Hypertext Preprocessor (PHP), Ruby, Active Server Page (ASP), Python, Java Server

Pages (JSP) and so on. The proposed system is implemented using PHP because, according to SimilarTech, PHP is among the most frequently used programming languages used in server-side and is currently powering more than forty two million web sites. Fig. 1 shows the rates of websites utilizing

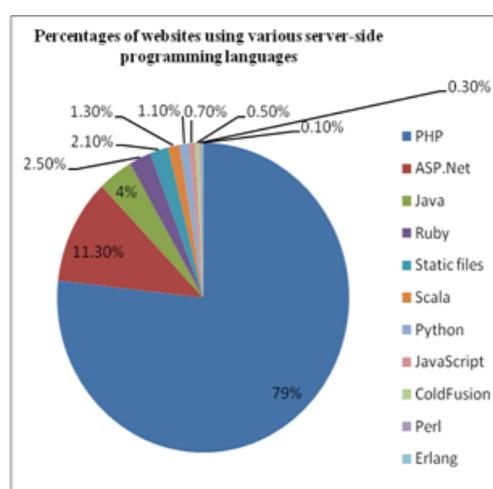


Fig. 1. Rate of websites utilizing different server-side languages

different server-side language which are collected from W3Techs.com.

PHP is a freely accessible server-side script language mainly used on Linux Web servers. . Initially PHP is obtained from Personal Home Page Tools, but now PHP stands for Preprocessor Hypertext.

One of the foremost well know databases for web applications is MySql which is available freely but update regularly with all features required for present system. A range of paid editions are also available for business use. A lot of attentions have been paid on speed and reliability for this freeware in preference to include wide range of features that you may not require. MySql helps users to manage information from various kinds of table very easily. It has a user-friendly interface, and batch commands that allow you to process huge quantities of information. It is also possible to get support for free version with fees. The survey results from StackOverflow’s developers show that the most popular databases for 2018 is MySQL as shown in fig. 2.

Internet Information Server (IIS) is developed by Microsoft to provide hosting serving of web based application. It is one among the

Manuscript published on November 30, 2019.

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foremost widespread software that used to configure web server. Netcraft published Web Server Survey (the

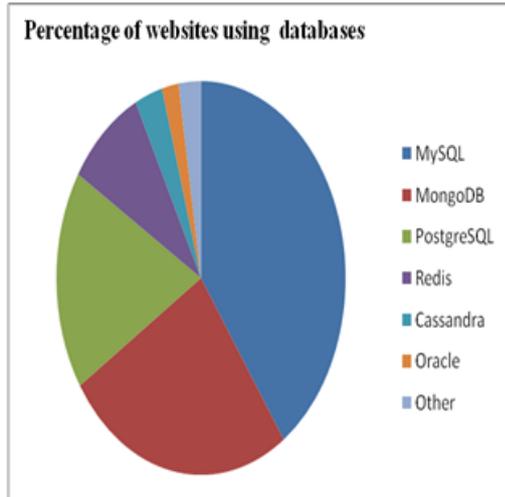


Fig.2. Percentages of websites using various databases

percentage of various website using different types of web server) on 24 August 2018 which is presented on fig.3.

It is the responsibility of an IIS server to provide a response to user requests. Web server receives request from client through net and then processes it to generate client's required information and replies to clients. IIS reduces the system management and deployment costs but boost the accessibility of companies websites. SMTP, NNTP, FTP, FTPS, HTTP and HTTPS are supported by this web server software.

The intention of this research is to design and implementation of loan management system sing ISI Server, PhP and MySql which not only manages the customers' loan portfolios but also simplifies the decision making and loan

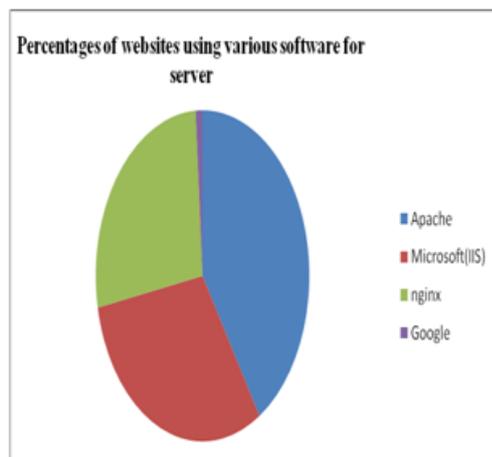


Fig.3. Percentages of websites using various software for server

management processes. The registered users could apply for loan from online and also get free access for their queries, complaints and status of loan at any point from online by sign in the system using user name and password. Officers

working in credit institutions could also monitor the loan and check progress of loan which is under consideration. Numerous features have been included in the design which are absent in present loan management system. For example, this system analyzes and publishes topics related to loan through online with the help of blogs for enabling people to post ideas, thoughts, and remarks on credit institutions which are linked with facebook, linkedIn, twitter, wikis and other social media. Interested users could communicate using text or voice chat, video conference through this system.

The architecture of the loan management software based on five viewpoints by the ArchiMate modeling is explained in [1] which was carried out with the modeling tool Coloso. Four important factors are considered in [2] which influence bank's loan readiness, especially profit targeting, non-performing credit proportion, value client proportion, Company advancement proportion which is set from the bank. Effect at the conduct of banks prospective borrowers for differentiation of credit cost is evaluated in[3]. However, this paper shows the design and implementation of the system for managing the loan of credit institutions utilizing ISI web Server, PhP and database MySql which is unprecedented is research papers [4-6].

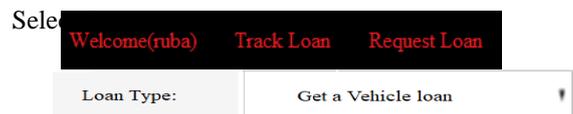
II. ARCHITECTURE

There are four primary components of the LMS suggested. The following sections will explain these components:

A. Client:

Any client can submit registration from and request for loan through online without going to the credit institutions physically. There are n numbers of users as shown in fig. 4 where n is not limited. The steps of submitting registration from are as follows:

- Visit this link.
- It is a form where you have to fill several fields.
- At first you need to register with this system by using username, email, password and mobile number.
- Login the to the system using username and password
- Click on Request loan from menu.



- Write the amount.
-

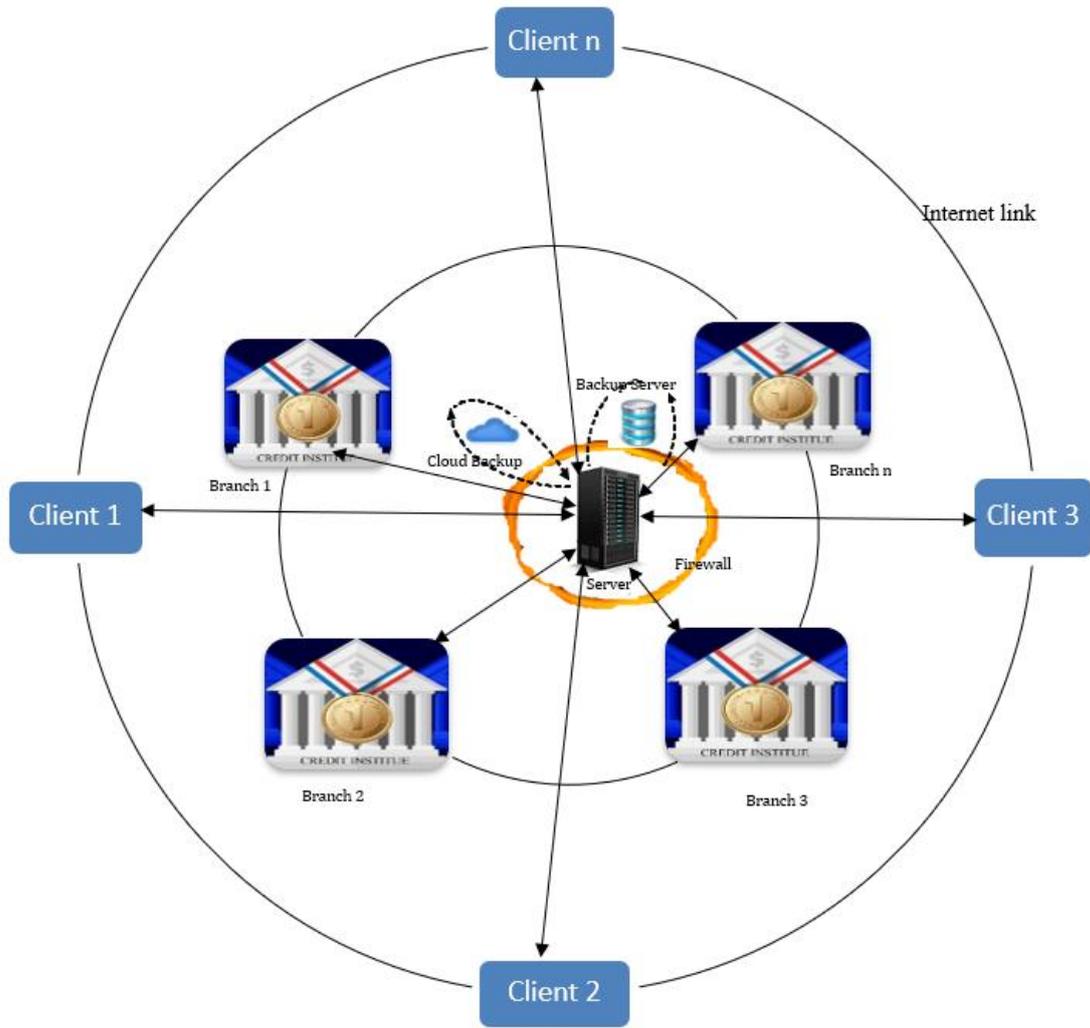


Fig. 4. Architecture of LMS Using ISI web Server, PHP and database MySQL

Loan Amount:

- Select the loan period.

Loan Period:

- Select down payment

Down Payment:

- Upload documents (Bank statement, Identity proof, address proof, Salary statement and Income tax statement.

Upload documents No file chosen

- Click on submit

B. Internet Link

Information of the credit institution is kept on a centrally managed server. Each client initially sends connection

request to the server via an active internet link for accessing the content of the server as shown in fig. 4. Client can use a desktop or portable laptop, table and mobile to access the content of the server.

C. Server

Server gives a safe, easier-to-manage component based platform for this framework. The following sections explain the matters which have been regarded in the implementation of this framework [5]:

1) Controlling the web farm: A web farm consists of several web servers or nodes which can execute various instances of an application. once requests from clients arrive to this farm, the Load balancer divides the requests of clients to the nodes

2) Reliability: It is the probability that server will do all required jobs without failure for a specified period of time. Reliability of sever can be improved by adding more features that assist prevent, identify and repair hardware failures such as routing the application requests and balancing the load, cloud backup and local backup, effective diagnostic tools, dynamic compressing and caching, tracing failures automatically and so on.

3) Security: There are several tools and techniques which are used for preventing hacking and other malicious behaviors of server. Few common server security handling methods which have been considered are as follows:

- Monitoring server report and audit the server frequently
- Using security extensions and tools which come with server software
- Backing up data and systems regularly
- Deleting unused software from servers
- Regularly updating the systems, and installing security patches
- Using hardware, software and network firewall
- Using password to protect user accounts with proper privileges and permissions.
- Isolating the developing environment from testing and production location.

4) Effective Administrator tools: This framework provides an effective internet web server management tool which will give the smooth access to server, easy way of setting configuration, clear diagnostic report during runtime and details information of users to reduce the load of administrator.

D. Branches of credit institutions

The credit institution is responsible for checking the online application for loan. If applicant provides all required information and submit all required documents, the loan underwriter will verify and approve the loan in system, system will automatically inform to the applicant with required information for proceeding. The online application processing can be shown by the flowchart shown in fig. 5.

The loan underwriter will verify following information/documents:

- 1) Government-issued ID: When applying for a loan, it is needed to submit, national identification card or driving license or passport or other type of government issued document.
- 2) Employment: Most of credit institutions are expecting candidates to work a stable job. Few credit institutions may accept other documents such as pension.
- 3) Proof of earnings: Three to six months' bank statement or tax returns of last two years needs to submit to proof the salary or earning.
- 4) Debts or loan documents: It is required to submit statements from debts accounts if anyone have other loans or credit cards.
- 5) Address Proof: Some credit institutions ask for address proof using valid Passport or National ID or Utility Bills.
- 6) Age: Loan underwriter also checks age. Applicant must be at least 18 years old.
- 7) Passport size photograph: Loan underwriter also wants recent passport size photograph.

III. IMPLEMENTATION

Part of the proposed system is implemented for testing using windows 2016 server with PHP and MySQL. Use case diagrams for administrator, customer and credit/loan underwriter of loan management system is presented in fig. 6, fig. 7 and fig. 8 correspondingly.

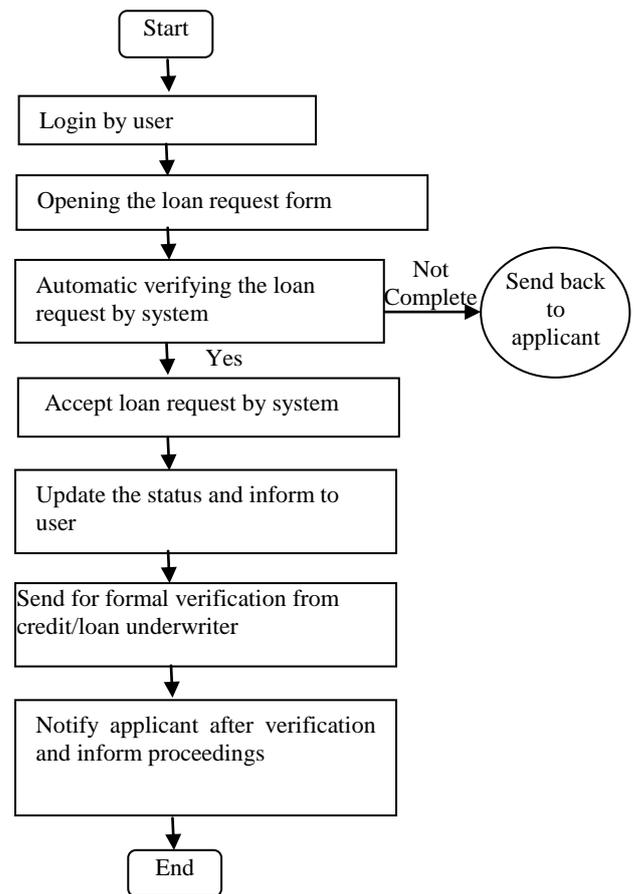


Fig. 5. Process for applying Loan

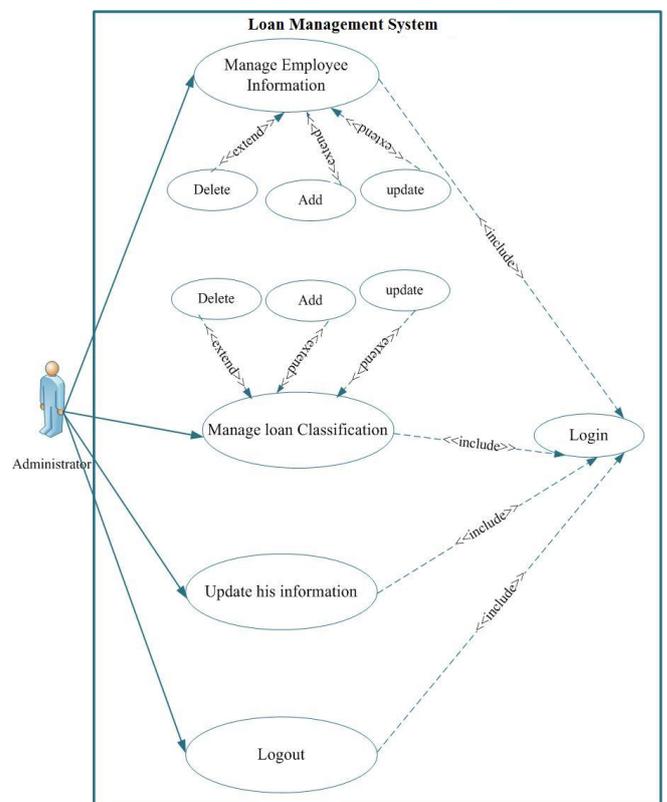


Fig. 6. Use case diagram of administrator for LMS

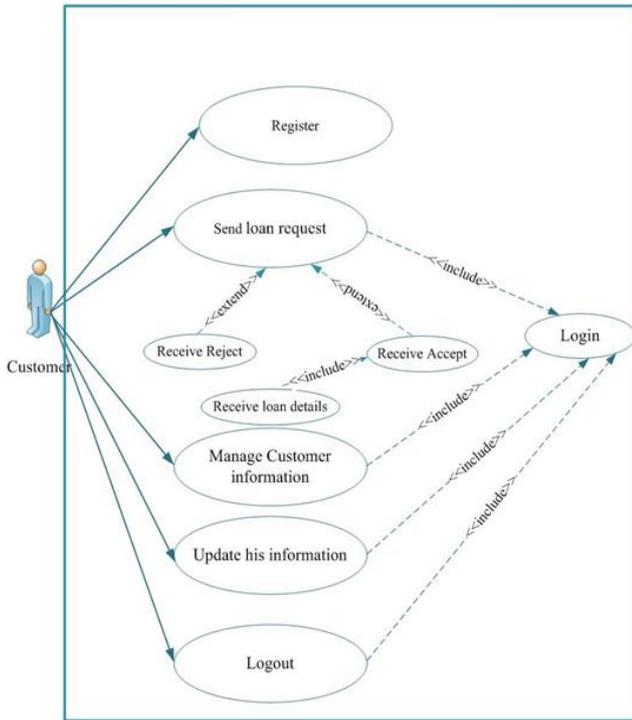


Fig. 7. Use case diagram of customer for LMS

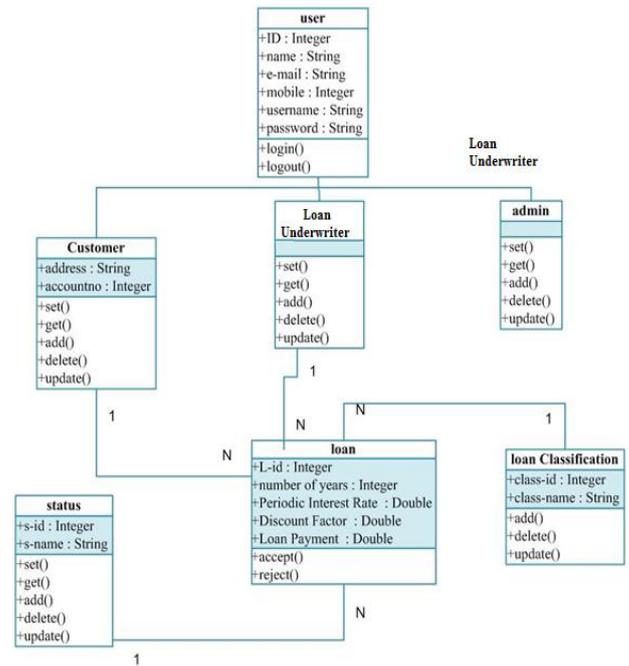


Fig. 9. Class diagram for LMS

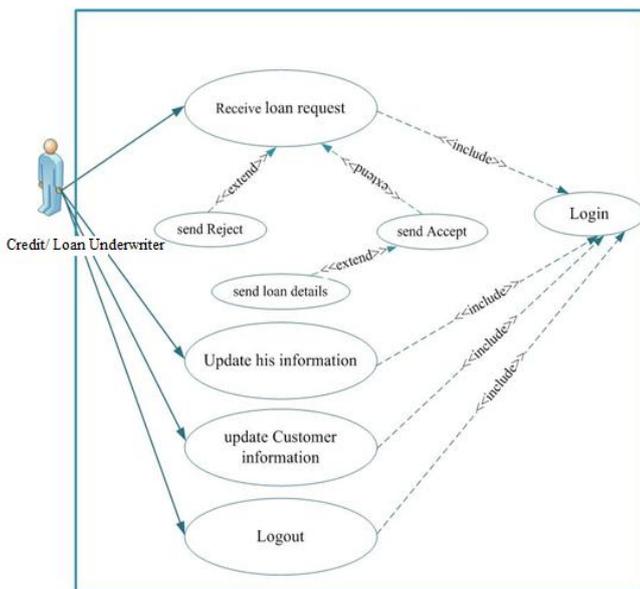


Fig.8. Use case diagram of credit/loan underwriter for LMS



Fig.10. Registration page for LMS

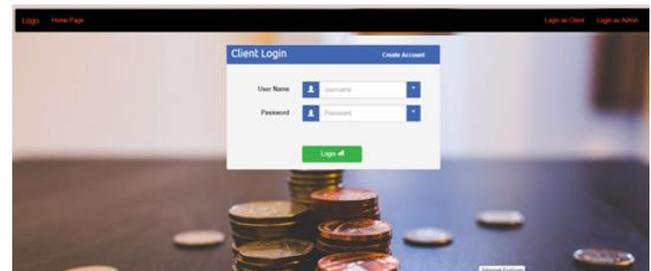


Fig.11. Login page for LMS

Class diagram for this system is presented in fig.9. The registration page, login page, Loan calculator page, Managing employee account and Managing loan classification page for this system is presented in fig.10, fig. 11, fig. 12, fig. 13 and fig. 14 correspondingly.



Fig.12. Loan calculator for LMS



Fig.13. Managing employee account for LMS

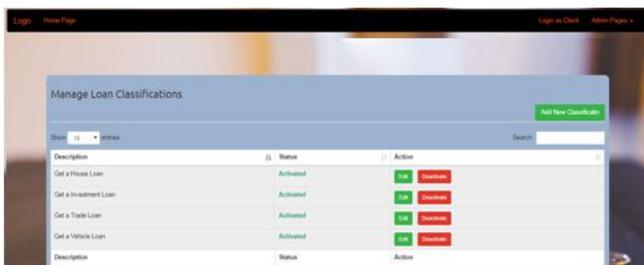


Fig.14. Managing loan classification for LMS

IV. CONCLUSION

With the advancement of technology, credit institutions can server individuals, businesses and other organizations more effectively and easily. Architecture that facilitates those institutions, is proposed in this work; and part of this architecture is implemented which is explained in details here. Functionality of four primary components of the suggested framework, i.e., clients, internet link, server and credit institutions branches are outlined with required criteria such as security and reliability. This paper also shows how easily client can apply for loan from anywhere via the website using desktop computer or portable laptop or tablet or mobile device; how effectively loan underwriter verifies and approves the loan from the system, and how automatically system informs the clients with the information they need to proceed. The proposed system manages and monitors multiple loan portfolios from multiple locations through a single platform starting from prospecting to closure. It also simplifies the decision making and loan management processes. Any credit institution can use the proposed architecture for providing excellent service to clients and managing their resources more appropriately.

ACKNOWLEDGMENT

The authors would like to thank the reviewers for the suggestions which help to improve the quality of this paper. In addition, the authors are also very thankful to Jouf University, sakaka, Al Jouf, KSA, for providing resources.

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