

A Real Time Implementation of Advance Information Processing System for Manufacturing Industries

K.Vaishali¹, G.Anbarasan², N.Senthamaraiselvi³

Department of Computer Science and Engineering, IFET College of Engineering, India^{1,2}

Associate Professor, Department of Computer Science and Engineering, IFET College of Engineering, India³

Abstract: Advance Information Processing is to develop an efficient data storage and retrieval. This work mainly focuses on reducing the manual work with ease of access. The data retrieval is from centralized database with an authenticated communication which avoids the local database access. In the centralized database the information can be easily transposed, transformed and maintained which improves the efficiency of retrieval and storage. It is purely a web application. Our proposed work for information retrieval and storage is implemented in a company for selling and producing ATM parts like card reader, cassettes, depositors, dispensers, displays etc. whenever a customer requires an ATM part the request is sent to the company where the process starts. In the company the employee who is responsible for processing the request sends the information to the approval team as customer specified. The approval team identifies the part number and verifies with part review team and processes are done to finalize the part. The instruction for the new part is generated as a PDF file with all the necessary specifications relevant to the requested part. This file is sent to the part development team which delivers the requested parts. Our proposed project makes the development team's work easier as all the necessary information's are available from the approval team as a single file.

Keywords: Advance Information Processing System(AIPSI), Centralized database, Authentication, ATM, PDF file.

1. INTRODUCTION

Advance Information Processing is a distributed application that runs on more than one computer and communicates through a server. Specifically, a web application is accessed with a web browser as a client and provides the ability to update and maintain a program without deploying and installing software on client computers [1]. One advantage of this paper is to access the web page only by the authorized person within the company. The purpose of this report is to provide the functional requirements and detailed specifications for the Local System Services of the Advanced Information Processing System (AIPS). The introductory section is provided to outline the overall architecture and functional requirements of the AIPS system [2]. This document is to provide the software requirements and specifications for the Input/output Network Management Services for the AIPS [3]. From these references the AIPS is used in Advance Passenger Information System (APIS) is an electronic data interchange system established by U.S. Customs and Border Protection (CBP) [11], Advanced Weather Interactive Processing System (AWIPS) is a technologically advanced processing, display, and telecommunications system that is the cornerstone of the United States National Weather Service's (NWS) operations [12], but AIPS not used in manufacturing industries so we proposed a work based on information retrieval and storage is implemented in a company for selling and producing ATM parts like card reader, cassettes, depositors, dispensers, displays etc. whenever a customer requires an ATM part the request is sent to the

company where the process starts. In the company the employee who is responsible for processing the request sends the information to the approval team as customer specified.

The approval team identifies the part number and verifies with part review team and processes are done to finalize the part. The instruction for the new part is generated as a PDF file with all the necessary specifications relevant to the requested part. This file is sent to the part development team which delivers the requested parts.

The proposed project makes the development team's work easier as all the necessary information's are available from the approval team as a single file. The information is retrieved and stored in centralized database.

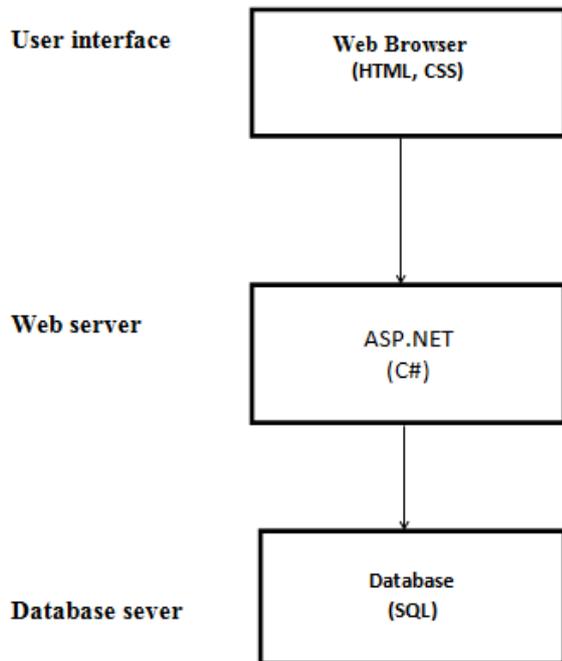
As multiple minicomputers collect data, control processes, and run tests, a central computer system supports them all, gathering data, generating management reports, and performing other tasks at the same time.

Section 1 gives a brief overview of the AIPS architecture, while Section 2 provides the AIPS framework design and its internal functions. In section 3 conclusion of work with future work is discussed.

AIPS Architecture

Web applications usually run on the Internet or an Intranet and they have become an important part of the business world in recent times. With the increasing number of users

of the Internet and World Wide Web, more sophisticated Internet and web applications have emerged. The functionality of Internet browsers have been extended to include dynamic elements, such as event handling, processing of forms, performing of calculations, among others. Scripting languages, such as VBScript or JavaScript have been introduced to enhance the mostly static contents of web pages with dynamic elements [4].



Dynamic HTML (DHTML), extensible HTML (XHTML) and XML are some of the languages that are part of today’s browsers to provide interactive web applications. Web servers have also been enhanced to respond to client’s requests in a more flexible way than presenting the same content to all users. Server-side scripting is the key technology that allows developers to make Web applications fit for a specific purpose, so incoming requests can be processed by the server on the fly.

With server-side scripting, web pages are created by the application (on the server) considering the client’s request. The information submitted to the client can be in HTML format, which is the Internet’s basic standardized language of communication.

Several server-side technologies exist today. Examples are Active Server Pages (ASP or ASP.NET), Java Servlets and Java Server Pages (JSP), PHP (Hypertext Pre processor), Perl and Python.

The idea of comparing various AIPS development technologies has been an important consideration for many AIPS developers.

While some researchers use these comparisons to decide which technologies to adopt in developing new AIP others use them for developing new frameworks to simplify the AIP development process [5,6].

This paper presents a comparison of AIPS using open source software and proprietary software. The comparison involves three major web development technologies namely: Web browser using HTML and CSS, Active Server Pages (ASP.NET) and Database using SQL.

ASP.NET is an open source server-side web application framework designed for web development to produce dynamic web pages. It was developed by Microsoft to allow programmers to build dynamic web sites, web applications and web services [7].

ASP.NET Web pages, known officially as Web Forms [8] are the main building blocks for application development in ASP.NET [9] there are two basic methodologies for Web Forms, a web application format and a web site format [10].

Web applications need to be compiled before deployment, while web sites structures allows the user to copy the files directly to the server without prior compilation.

SQL is a special-purpose programming language designed for managing data held in a relational database management system (RDBMS), or for stream processing in a relational data stream management system (RDSMS).

Originally based upon relational algebra and tuple relational calculus, SQL consists of a data definition language, data manipulation language, and a data control language.

The scope of SQL includes data insert, query, update and delete, schema creation and modification, and data access control. Although SQL is often described as, and to a great extent is, a declarative language (4GL), it also includes procedural elements.

FRAME WORK

Advance Information Processing system consists of four way mechanisms:

1. Request new part
2. Part approval
3. Information Processing
4. Revision history

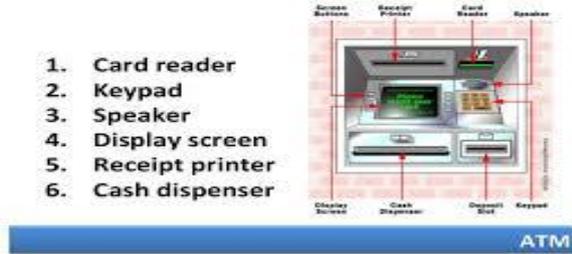
1.Request new part

The customer specifies his requirement through the request. This request is sent to the part approval team as Email.

In the company the employee who is responsible for processing the request sends the information to the approval team as customer specified.

Before the customer requisition, a prior knowledge structure should be known; with this the details can be given related to the new design.

Structure of ATM



The customer specifications may be size, colour, length, etc. For example if a customer request a card reader with 00-104375-000a series



Card Reader with 00-104375-000a series

If the customer request a ATM as

- High-Glass White Finish
- 1,000 Note Removable cassette CDU Upgradable to 4K CDU
- 10.1 color TFT LCD Screen
- Electronic lock
- Dip-Style Card Reader, EMV Option available
- Metal Key Cap Encrypted Pin Pad
- Infrared Touch Function Keys
- Win CE Operating System
- 56K Dial-Up & TCP/IP with SSL
- 12 Moth Warranty

The result will be like this



First the requester login to the system with his unique ID and Password. After the login have been completed request a new ATM parts by entering the part description, requester ID, priority of the requested part, comments are related to the requested parts. Sourced indicate whether the parts are outsourced from other company.

Part Description

Sourced Yes No

Requested By

Priority

Comments

Part approval

After the request is sent to the approval team the coordinator to view the request and check if the parts are available. If the parts are available then the coordinator approves the request else reject the request.

Then again send an Email to the requester whether the project is approved or reject. If the project is approved then only the requester orders to design the ATM part with required features.

For part approval we have to enter the following specifications such as part number it will be generated automatically, Part revision indicates the version of the requested part, Commodity type indicates weather the part is electronic, plastic and metal, Part status weather the parts is development, supersedes, orderable, not orderable and discontinued, supersedes means if any other replacement is required and supersedes by means who is the supersedes.

Part No

Part Description

Sourced

Part_Revision

Commodity Type

Part Status

Supersedes

Superseded By

Requested By

Information processing

The coordinator searches the requested part by entering the part number. Then it will display a part number, description, part revision, part status, commodity type and also additional information about the part. It helps the coordinator to edit the part details.

Part Number: 12345 Description: jghkjhghk Part Revision: A Part Status: Development Commodity Type: Electronics

Edit_by: SA18027

Sourced: Yes No

Technical Specification: [jghk12345] Attach

Compliance/Certification: [nkghf12345] Attach

Additional Comments (Usage Instructions/child part details): [ghkghf12345] Attach

Part Info:

Type	Plant	Supplier_Partno	UOM	Contact Info.	Lead Time	MOQ	Cost	Currency
Supplier	All	4923	Each	nil	10	1000	23	USA Dollar

Attachments:

ID	Section Name	File Name
12	Technical_Specification	6902.T37
13	Compliance_Certification	6902.T37

Submit Exit

After entering the part number it will generate automatically part number, description, part revision, part status, commodity type. The requester also attaches the technical specification, compliance and additional comments about the part.

Revision History

In this form revise all the part details and finally convert this as PDF file and sent to the plant for manufacturing. Using this instruction manufacturing industry will manufacture the ATM parts. The below screenshot show the output of our work.

Home Parts Accounts Logout

Edit Part Update

Part Number: 12345

Part Description: jghkjhghk

Part Revision: A

Part Status: Development

Commodity Type: Electronics

Validated By: SA18027

Sourced: Yes No

PPAP_Approved Approval: Yes No

Technical Specification: [jghk12345] Attach

Compliance/Certification: [nkghf12345] Attach

Additional Comments (Usage Instructions/child part details): [ghkghf12345] Attach

Part Info:

Type	Plant	Supplier_Partno	UOM	Contact Info.	Lead Time	MOQ	Cost	Currency
Supplier	All	4923	Each	nil	10	1000	23	USA Dollar

Attachments:

ID	Section Name	File Name
12	Technical_Specification	6902.T37
13	Compliance_Certification	6902.T37

Save & Export to PDF Approve & Create ZIP Report

[6]. Lavanya, R., Ramachandran, V., & Mustafa, J. (2010), A Comparative Study on Internet Application Development Tools, International Journal of Engineering Science and Technology, 2 (10), 5452-5456.

[7]. "ASP.NET is part of a great open source .NET community". Microsoft. May 14, 2013

[8]. Staff (November 2001)."Overview of ASP.NET and Web Forms".Microsoft. Retrieved 2011-06-05.

[9]. Jump up (MacDonald & Szpuszta 2005, p. 63)

[10]. Jump up [https://msdn.microsoft.com/en-us/library/dd547590\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/dd547590(v=vs.110).aspx)

[11]. Advance Passenger Information System (APIS) – US Customs and Border Protection

[12]. ANWS. "Advanced Weather Interactive Processing System (AWIPS) Hardware." <http://www.nws.noaa.gov/ops2/ops24/awips.html>.

II.CONCLUSION

This work mainly focused on the support for manufacturing industries to collect the information about the ATM part to be designed. This work can be extended to other machinery parts and it can be applicable to any type of industries.

REFERENCES

[1]. Nourie D. (November, 2006), Java Technologies for Web Applications, Oracle Technology Network, Retrieved from <http://www.oracle.com/technetwork/articles/javase/ssLINK/142892#nourie>.

[2]. Laura Burkhardt Linda Alger Roy Whittredge Peter Stasiowski in charles stark draper laboratory, inc. CAMBRIDGE, MA 02139

[3]. T. Massotto and L. Alger, "Advanced Information Processing System: Input/Output System Services", to be published

[4]. David A. Botwe et al, International Journal of Computer Science and Mobile Computing, Vol.4 Issue.2, February- 2015,Retraived from www.ijcamc.com.

[5]. Swales D., Sewry D. and Terzoli A (2003), A Performance Comparison of Web Development Technologies to Distribute Multimedia across an Intranet, Retrieved from <http://www.satnac.org.za/proceedings/2003/bband/bband2/703-Swales.pdf>.