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US State Health and Human Services Integrated Eligibility System

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Abstract: The Temporary Assistance for Needy Families (TANF) [1] is one of the United States of America's assistance programs. It is an Income and Employment Support program that provides temporary financial assistance for pregnant women and families with one or more dependent children. TANF aims to get people off assistance through employment. Benefits are distributed by means of electronic benefit card, child care, transport assistance or reimbursement of work expenses
The Supplemental Nutrition Assistance Program (SNAP) [3] helps low-income individuals meet their nutritional needs. Benefits are issued on EBT cards and can only be used to buy food products at grocers, farmers markets and other USDA-approved vendors.
Medicaid [4] was proposed to provide an effective base upon which to provide comprehensive and uniform medical services that enable persons previously limited by their circumstances to receive needed medical care. Medicaid pays for health services for qualifying families with children, and people who are pregnant, elderly, or disabled.
In the proposed system, development of TANF, SNAP and Medicaid for a state of United States will be done on an application that determines the integrated eligibility (IE) for respective assistance programs. Development will be done based on Core Java using Fast4j and [7] NextGen proprietary framework. Rules for determining eligibility for each program will be deployed by use of IBM WebSphere Operational Decision Management (WODM) that automates a wide range of decisions across the application.
Keywords: TANF, SNAP, Medicaid, assistance programs, Integrated Eligibility, Core Java, Fast4j, NextGen, IBM WODM

I. INTRODUCTION

The United States Department of Health and Human Services enhances health and well-being of individuals through various health care and support programs.

The Supplemental Nutrition Assistance Program (SNAP) [3] helps low-income citizens meet their nutritional needs. The US State Department of Human Services issues about $7 million in food benefits each month to about 27,200 households in the state. Forty-four percent of the program participants are children, and 42 percent of the households have earned income (are working).Benefits are issued on EBT cards and can only be used to buy food products at grocers, farmers markets and other approved vendors.

The Temporary Assistance for Needy Families (TANF) [1] is one of the United States of America's federal assistance programs. It is an Income and Employment Support program that provides temporary financial assistance for pregnant women and families with one or more dependent children. TANF provides financial assistance to help pay for food, shelter, utilities, and expenses other than medical. TANF aims to get people off assistance through employment. Benefits are distributed by means of electronic benefit card, child care, transport assistance or reimbursement of work expenses.

Medicaid [4] provides comprehensive and uniform medical services that enable persons previously limited by their circumstances to receive needed medical care. It is within this broad concept that the Medicaid Program in US State participates with the medical community in attempting to strengthen existing medical services in the state.

Funding is shared by federal and state governments, with eligibility determined at the county level. Our proposed system aims   to provide eligibility determination of households applying for the SNAP, TANF and Medicaid programs.

II. RELATED WORK

The implementation of a similar system in a US State has let to benefits discussed in the following points –

A. Medicaid

Medicaid [4] coverage increased annual medical spending by approximately $1,172 relative to spending in the control group.
Mortality rate was reduced which led to extremely low death rate of the general population of able-bodied adults aged 19 to 64.

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B. SNAP

Enhancements to nutrition education, improvements to the SNAP [5] retailer environment, and increase in state and federal level coordination and consistency of program implementation.

C. TANF

TANF coverage may improve a family's daily routine, increase parents' educational expectations of their children, and decrease children's likelihood to repeat a grade, but TANF is not able to enhance child well-being in areas of cognitive stimulation, family interactions, and parenting stress reduction. Based on the studies related to afore mentioned benefits, the proposed system started with an initial Release which included MAGI-Medicaid [4] implementation. MAGI stands for Modified Adjusted Gross Income. MAGI-based budgeting is used to calculate a person's household size and income, using federal income tax rules and a tax filer's family size to determine eligibility for Medicaid. The MAGI Medicaid program started January 1, 2014, as part of the Affordable Care Act (ACA). The second Release of the system is an incremental development on Release 1, which includes Non-MAGI Medicaid, TANF and SNAP.

III. ANALYSIS

After studying and analysing developments from existing applications, some major findings are noticed.

A. Findings in existing systems

1) Household needs to give information about their composition, living arrangement, financial status, etc.
2) Children below 16 years of age cannot apply for an assistance program.
3) Coverage to most counties of a state.
4) Household data is kept secure and confidential.
5) Even after deployment of such a system into a working phase, maintenance is required to ensure stability of such systems.

Also the existing systems have some major drawbacks. Those drawbacks are as follows:

B. Drawbacks of existing systems

1) Too much form information needs to be filled for a household applying for an assistance program.
2) It takes more than 2-3 days for issuance of benefits.
3) 24X7 availability of eligibility systems may or may not be present.
4) Proper maintenance of such large systems is not feasible if number of personnel involved in development is less or are unskilled.

IV. PROPOSED SYSTEM

In the proposed system, development of Medicaid, SNAP and TANF for the US State will be done on an application that determines the integrated eligibility (IE) for Medicaid, SNAP and TANF programs. Development will be done based on Core Java using Fast4j and NextGen proprietary framework [7]. Rules for determining eligibility for the Medicaid, SNAP and TANF programs will be deployed by use of IBM WebSphere Operational Decision Management (WODM) that automates a wide range of decisions based on program policies across the application.

V. SYSTEM OVERVIEW

In the proposed system, the AIX (Advanced Interactive executive) [8] servers contain WAS (WebSphere application server) and WODM (WebSphere Operational Decision Manager). WAS is the application server that hosts the central application and WODM automates all the decision rules for determining eligibility for the assistance programs. WAS and WODM further consist of IEApp and ILOGApp.

IEApp is the main online application. It is the central application through which everything is accessed or managed.

ILOGApp is the application for determining eligibility. It connects all technical decision rules to the online application.

Users access the online application, where they can apply for assistance programs on the application.

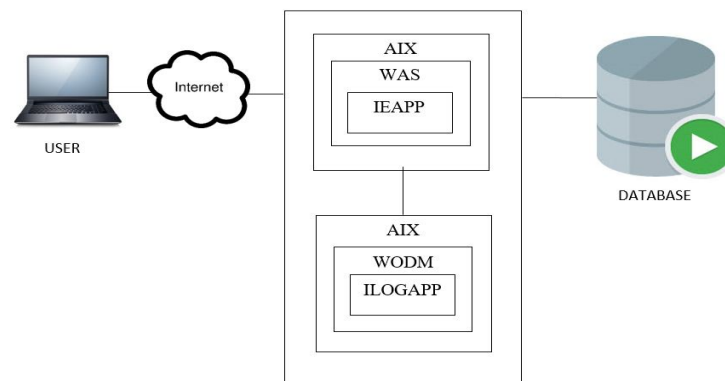# International Journal for Research in Applied Science & Engineering Technology (IJRASET)

Fig. 1 Architecture of Integrated Eligibility System

The assumptions to be made before using the system.

A. Assumptions
1) Budget Limitation: For the successful completion of the project it has to lie under the budget allotted to it.
2) Assumption of Events: The development of the project is based on current state policies.
3) The Decision Tables are dependent on State Policies: Business Rules are affected when there is any change in the policy of a module. Some of the main dependencies of the proposed system.

B. Dependencies
1) Hardware Dependencies – The AIX Servers that host the application should be up and running, as it is used for deployment of the system on both XOM (Executional Object Model) and BOM (Business Object Model) ends. The household should have a proper internet connection to access the application.
2) WAS and WODM Dependencies – WAS integrates WODM and the Worker Portal application and facilitates the execution of rules deployed on the WODM server through a hit on the Worker Portal.

VI. IMPLEMENTATION OF THE PROPOSED SYSTEM

The project development follows a Waterfall Iterative Model SDLC, spanning 6 iterations. Each iteration consists of 6 weeks, where functional development along with unit testing and integration testing takes place. At each iteration, design modifications are made and new functional capabilities are added.

Rules for each functional component are formed with help of Decision Tables created in Rule Designer which are then mapped with the desired functionality developed in Core Java and are then deployed using IBM WebSphere Operational Decision Management. The Process flow of the proposed system is as follows.

A. Application Registration
Users can apply for multiple programs on one application. The proposed system can use the same information to determine eligibility for multiple programs.

B. Data Collection
Key demographic information is entered. Determines if users are on existing or closed cases. It documents the date/time of application submission.

C. Eligibility Determination
Determines eligibility for a program request and individual program requests based on the program specific rules. Identifies the individuals who are included in the Eligibility Determination Group (EDG). The proposed system determines eligibility based on the following criteria: Non-Financial, Resource, Financial, Verifications.

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D. Authorization

Simply governs the certification of benefits received by a client. Interacts with other modules such as Benefit Issuance, Alerts and Correspondence. Gives a user, with proper security to publish and override EDBC results.

E. Benefit Issuance

Governs the benefits that are received by a particular household. There are different modes on Benefit Issuance that are incorporated. Users can choose how benefits are paid out might be cheques, cash or electronic card benefits.

F. Correspondence

Module through which the IE system generates client notices, forms, other correspondence. Correspondence is automatically generated and mailed to the client.
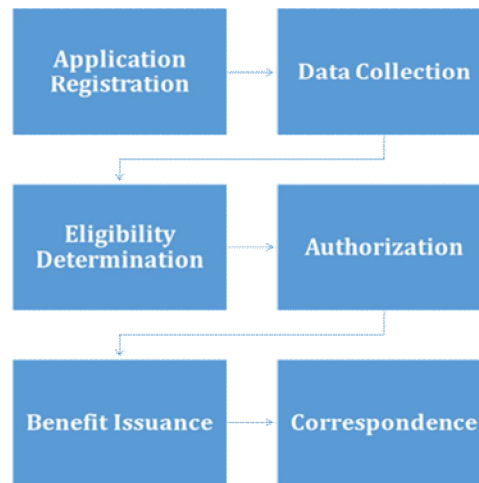

Fig. 2 Process flow diagram of Integrated Eligibility System

VII. RESULTS

A. The results obtained from the proposed system are

1) Users have full time access to the application.
2) User can successfully apply for HS (Health Services) assistance programs.
3) Eligibility determination for households is successfully and efficiently implemented.
4) Aim is to support every county in the US State. Based on the policy that deserving households should get whatever help they can from the government ensuring well-being of the people inside the State.
5) Connectivity with different modules across the system to produce modularity to the code.
6) Object oriented methodology of development ensures optimal usage of critical resources such as Data Storage, inter-class connectivity etc.
7) Decision Rules are properly mapped to the respective functional components.

VIII. CONCLUSION AND FUTURE WORK

The proposed system allows households to successfully apply for HHS (Health and Human Services) assistance programs [2]. Eligibility determination results for households are accurate upon running "End to End" scenarios. This is achieved through integration of different modules across the system to produce modularity for the code. The system follows object oriented methodology of development ensuring optimal usage of critical resources such as Data Storage, inter-class connectivity etc. After the completion of the Worker Portal application from the proposed system, development will begin for SSP (Selective Source Propagation) application where the real time user of a US state can successfully apply for HHS assistance programs. This system will then be proposed to every county and state of the United States of America.

REFERENCES

[1] Jing Sun, Falguni Patel, Rachel Kirzner, Nijah Newton-Famous, Constance Owens, Seth L.Welles, Mariana Chilton, "The Building Wealth and Health Network: methods and baseline characteristics from a randomized controlled trial for families with young children participating in temporary assistance for

International Journal for Research in Applied Science & Engineering Technology (IJRASET)

needy families (TANF)", 2016 , SpringerLink

[2]   Julia Shu-Huah Wang, "TANF coverage, state TANF requirement stringencies, and child well-being", 2015, Elsevier.

[3]   Andrew W. Dobelstein, "Supplemental Nutrition Assistance Program and the Earned Income Tax Credit", 2014, SpringerLink

[4]   Robert W. Stephens, "Medicaid", SpringerLink.

[5]   Cindy W. Leung, Elena E. Hoffnagle, Ana C. Lindsay, Hayley E. Lofink, Vanessa A. Hoffman, Sophie Turrell, Walter C. Willett, "A Qualitative Study of Diverse Experts' Views about Barriers and Strategies to Improve the Diets and Health of Supplemental Nutrition Assistance Program (SNAP) Beneficiaries", 2013, Elsevier.

[6]   Jeounghee Kim, "Welfare-to-Work Programs and the Dynamics of TANF Use", 2010, SpringerLink

[7]   Hamid R. Darabi, Mo Mansuri, Nazanin Andalibi, Eileen Para, "A framework for decision making in extended enterprises: The FAA NextGen case", 2010, IEEE

[8]   James Sasitron, Robert Cartwright, "Component nextgen: a sound and expressive component framework for java", 2007, ACM

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