Analyzing IT Workflow Management by Queue Management

Hidayatulla Kamaruddin Pirjade[1], Dr. Sagar Fegade[2]

[1]Research Scholar, Sunrise University, Alwar, Rajasthan, India

[2]Professor, Sunrise University, Alwar, Rajasthan, India

Abstract— The proposed workflow management executed in the research work can be stretched out at cloud services condition to improve the its management services. To Study It Workflow Management by Queue Management At present distributed computing offers different types of assistance. The greater part of the money managers is intrigued to tackle their concern through distributed computing technologies.

Keywords— Management, Queue Management, Data Mining, Techniques and Application

I. INTRODUCTION

According to our revised definition of Queue Management (above), a Queue Management System is then a system that manages the waiting experience of the customer throughout their entire journey, from before they arrive until after they leave. In order to aid organizations with customer access, customer flow management, and data collection for better customer experiences, the solution may include either software or hardware. Words like "annoyance," "lots of people," and "waste of time" immediately come to mind when we think about lineups and waiting lines. But in a scientific sense, what exactly is a queue? People in a queue are waiting in line to get whatever it is they are waiting for.

In economic terms, it's even easier – a wait is a classic instance of wants surpassing supply. Queues form when there are more customers waiting to be served than there are available employees to assist them. When supply falls short of demand, people have to wait longer to get what they want. Then, how does one define queue management? The goal of queue management is to regulate client flow and improve the waiting process. Although normally we only take into consideration the consequences of lengthy lineups on ordinary visitors, everyone — from consumers to manager and top-level administration — benefits from efficient queue management. Waiting in line has probably existed since the beginning of time.

Queues, according to some scholars, have been around since prehistoric times. When the hunters returned with fresh meat, everyone had to line up for a mouthful. Most likely, these "waiting lines" mimicked animal queuing, where tribal hierarchy determined the sequence. Thankfully, queueing procedures have improved since then. Waiting in line is just another facet of human life that has changed throughout time. It wasn't until the early 19th century that they established a societal standard. The term "queue" was first used in print in 1837; it derives from the Old French "cue," which means "tail."

II. LITERATURE REVIEW

Matthew, Ugochukwu & Yunusa (2019) Data Mining assumes significant jobs in numerous associations particularly the client assistance arranged foundations like banks. It is useful in examining the gathered data and conveying it into a reasonable example. In the current situation, banking is a developing division where huge volumes of electronic data are being kept up. The significant errand in banking is dealing with colossal value-based data and making decisions in regards to client maintenance, misrepresentation discovery and avoidance, hazard and promoting management. Yet, making decisions by manual is tedious and mistake inclined. To handle these data in a powerful way, data mining strategies and methods are appropriate. By utilizing these methods a few fascinating examples and information base can be recovered.

Mathew, S. & Abraham (2018) Information Mining Techniques-The progress in the field of Information advancement has brief broad proportion of databases in

various zones. Likewise, there is a need to store and control basic information which can be used later for fundamental initiative and upgrading the activities of the business.

Hussain, Sadiq (2017) The paper studies various parts of data mining research. Data mining is useful in procuring information from enormous domains of databases, data stockrooms and data shops. Extraordinary and current territories of data mining additionally examined. Issues and difficulties of data mining alongside different open-source devices are tended to also. Data mining is a significant and advancing research territory and utilized by the scholars to analysts and PC researchers also.

Hammarström, Pär & Herzog, Erik (2016) In all events, by utilising models and software building methods and devices, it is a test to establish software-oriented well-being fundamental frameworks. This paper addresses the difficulties faced by the traditional device engineering approach to the improvement of the Gripen E contestant aircraft with the software of Domain Focused Design. Engineering structures and the domain focused architecture are linked to known similarities and contrasts. Areas are recognized where uniqueness is necessary. The key problem is that the layout of the system differentiated cannot be adapted to the known domain structure using the domain focused design approach. Further, to oblige the Systems Engineering Architecture design measure to perform a valid domain test, the analysis must be extended and generalized to benefit from the benefits of Domain Focused Design.

Alnoukari, Mouhib (2015) ASD-BI reflects a smooth "marriage" of perspective and data extraction. The Adaptive Software Development (ASD) approach is one of the big efforts to incorporate a corporate information system. The primary strengths of the ASD-BI methodology are flexible to adjust situations, to enhance collection and exchange of information, and to help to upgrade and complete the association structure. The aim of the section is to demonstrate how agile techniques can improve the integration of data mining within the context of business insight. The article offers two contextual analyses, one on advanced and the other on bibliographic (Bibliomining), and describes ASD-BI attributes. The key impact of this article is to create a step of inferred knowledge and raised the vital element in the use of knowledge revealment measure by using organised methodologies to integrate market insight and data mining frameworks.

III.   RESEARCH METHODOLOGY

The group head goes about as an analyst, audits the solicitation, examines the solicitation and afterward apportions the solicitation to the colleague who can have the option to deal with that sort of solicitation.

In this sort of solicitation dealing with, there might be an opportunity to happen flood in the line while putting away the solicitation. In that circumstance, the client needs to trust that quite a while will deal with their solicitation; even it might be a basic one. To evade this downside, the proposed research methodology handles it productively by overseeing and keeping up the line appropriately. The line is kept up appropriately by parting the line into sub-lines regarding the need for the service demand. The service demand, upon presented by the client has been put away in the primary line. The solicitation in the line is ceaselessly checked by the group chief. The solicitation might be put away alongside the client relegated need for handling the solicitation. In view of the client doled out need and the SLR time headed determined for preparing the solicitation, by the group chief or analyst thus, the solicitation is allocated to the sub-line. The commentator keeps up three sorts of sub-lines: one for demand with high need, one for demand with medium need and another for demand with low need.

After ascertaining the time bound, the solicitation is moved to one of these sub queues. While moving the solicitation, if the client relegated need for the solicitation, it might likewise be thought of. Hence the commentator upon audits the solicitation in the principal line, moves the solicitation to one of the sub-lines. The need-based sub lines are Pictorially spoken to in this figure 1
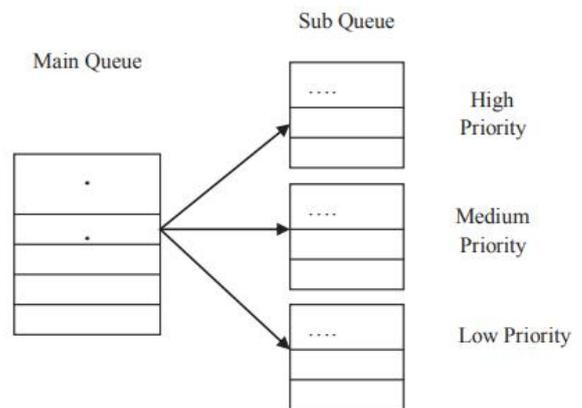

Fig.1 Queue Management for Workflow Maintenance

Subsequent to relegating the solicitation to the sub-lines, the analyst searches for the colleague to appoint the solicitation for preparing. The time bound is determined by the beginning time and the greatest and least an ideal opportunity to finish the cycle. In light of the time bound count, the solicitation is assigned to the sub-line. On the off chance that the determined time bound is less, at that point the solicitation is moved to the line with high need. On the off chance that the determined time bound is typical, at that

point the solicitation is moved to the line with medium need. On the off chance that the determined time bound is more, at that point the solicitation is moved to the line with low need.

The solicitation in the high need line is handled first, since the solicitations have been prepared in a less timespan. Likely, after preparing the solicitation in high need, at that point the solicitation in medium need line is handled lastly, the low need line has been prepared. By preparing the solicitation dependent on the need, the client can have the option to get the reaction in a proficient timespan. The client presenting the solicitation with less timeframe is handled first as opposed to preparing the solicitation with additional timespan. In this way the line is overseen effectively and the work process is looked after effectively.

IV.   DATA ANALYSIS

The proposed ITQMWFM Algorithm imbalanced in the java program maintains an successful testing of the work stream in an IT association per line management. In an IT association the exploratory agreement is completed by taking several requests and multiple asset persons. At the start, the request is sorted in a standard line and is intended to illuminate the individual asset. The biggest time frame expected to complete the application was calculated and noted. There was also a chance to address any customer order.

Following that, the next step for the review of the method proposed is completed by measuring the time needed to process the request. In view of the time limit, the demand has been separated and divided into three sub-lines according to the service requirement. The application has been prepared and the time to complete the cycle has been identified and noted after the request has been transferred from the main line to the sub lines.

For methods the current range, the example data found by the banking algorithm subtleties are used just like the proposed system seems to be working well and the application is effective and successful.

In the current system, only two asset persons are allocated physically based on the presence of the demand in the line. Table 1 presents a rundown of the current system in the asset mission. According to the service demand sorted in three sub-line models, the proposed ITQMWFM is allocated as individual properties. The distribution of each rundown and the number of tickets is shown in table 1 and 2.

Table 1 Resource Person List (rplist)

RP ID	Status
RP1001	Free
RP1002	Allocated
RP1003	Allocated
RP1004	Free
RP1005	Free
RP1006	Free
RP1007	Free

Table 2 Tickets

Ticket No	User Name	Request
T101	ABC	Account Creation
T102	XYZ	Net Banking Request
T103	SKV	Recover Password
T104	MNP	Senior Citizen FD Details
T105	VND	Account Details Updation
T106	SSD	Account Information
T107	PQR	Online Transfer

Table 3 Priority Setting

Ticket No	Time Bound	Priority
T101	30 – 40	Low
T102	45 – 50	Low
T103	10 – 15	High
T104	10 – 15	High
T105	20 – 25	Medium
T106	10 – 15	High
T107	25 – 30	Medium

Table 4 Queue-1 (with High Priority)

Ticket No	Status
T103	RP1001 (Processing)
T104	RP1004 (Processing)
T106	RP1005 (Processing)

Table 5 Queue – 2 (with Medium Priority)

Ticket No	Status
T105	RP1007 (Processing)
T107	Waiting (until RP free)

Table – 6 Queue – 3 (with Low Priority)

Ticket No	Status
T101	Waiting (until RP free)
T102	Waiting (until RP free)

Table 1 documents the time-dependent setting for each ticket. The concept of line management is illustrated in table.

The tables demonstrate the method proposed by separating the program from the basic line in time-bound sub-lines. In these areas the method proposed performs well and this study has carried out the purpose of the work proposed effectively.

The system proposed considers the control of the ticket time with line management where line management for the tickets is not regarded as established method.

In Table 7 the present and proposed method for calculating line management by the time allotted is closely examined. The outcome of the table indicates that the proposed solution to handle the line work process reduces the optimal ticket handling capacity.

Table 7 Processing Ticket based on queue management

No. of Tickets	Time to process without Queue Management(seconds)	Time to process with Queue Management(seconds)
10	20	5
50	100	25
100	300	40
200	450	45
500	980	50

Figure 2 displays the line management layout outlines. The diagram of the X hub refers to a number of 10-500 tickets and the Y hub refers to the presentation volume. The bar graph demonstrates, of course, that it takes longer for tickets to plan without line management than for tickets with line management.
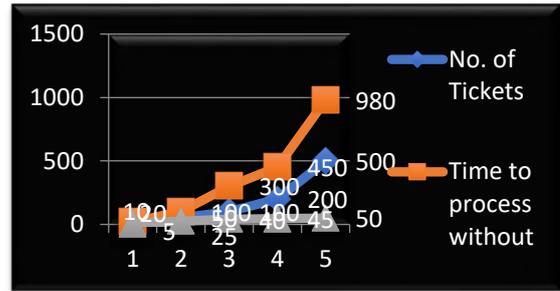

Fig 2 Performance chart of queue management

V.   CONCLUSION

This research work gives three kinds of structure which have been effectively executed. The primary system is to deal with the IT infrastructure by arranging in a tree like structure to relegate the service solicitation to the asset individual in this situation. The remaining task at hand can likewise be overseen and the way toward doling out the ticket to the asset individual is additionally robotized with the goal that the manual exertion is decreased. The subsequent system is ITQMWFM level engineering is to keep up the line dependent on the need and time bound to finish the cycle, and furthermore it gives better reactions to the client presenting the solicitation.

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