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CHAPTER 1

Introduction

Traditionally, organizations have conducted businesses on paper. Pre-printed formats were most widely used to exchange information between businesses. As the number of transactions between different organizations and their customers increased over the years, there was a need for a more effective way of communicating and processing business data.

When it comes to an effective and smooth-running office environment, there are certain elements that must be implemented, despite the industry you are in. First and foremost, your files are the key to your operation and learning how to properly maintain a sufficient paper trail can make a world of difference when it comes to your daily operations

"Less Paper" Or "Paperless" Office

The term "paperless office" goes as far back as the 1970s. The Xerox Corporation did more to promote the term than anyone else. As far back as 1974-1975 there was a mention in the organization about the "office of the future" that would include computers, electronic mail and online information. All the tools are in place these days to make the paperless office a reality all over the world. The fact that technologies are now beginning to look and feel more paper like is a step in the right direction. No longer are we limited by battery power, or large heavy screens. Battery and display technologies are now thinner and lighter than ever and wireless protocols make it necessary for devices to be secured to each other in order to communicate. There are many portable devices that allow persons to access, send, read and even mark documents as if it were in paper format.

When considering the benefits of going paperless generally there are two ways to implement a transition strategy, either a paperless filing system or a completely paperless workflow. A paperless filing system is an electronic system used for storing documents. It can increase productivity, reduce expenses, and eliminate the need for storage space. It is simple to implement, easy to adapt, and relatively inexpensive. We refer to this as the Less Paper Office. The more robust of the two paperless strategies is paperless workflow. Paperless workflow incorporates a paperless filing system.

Paperless Office

In a paperless workflow environment, all work is performed electronically. All the benefits of a paperless filing system are achieved at a magnified level. To realize these increased benefits requires more planning and a significant commitment. Today, digital information flies around the world and into, through and out of our organizations, is managed and secured in digital repositories and drives business at lightning-fast speeds. the historical changes in the communication medium from orally transmitted knowledge to print culture introduced with the Gutenberg press, and more recently, to electronic means of transferring information. The cultures associated with knowledge transmission oral, manuscript, print, electronic, and digital are at the core of understanding what happens when physical paper-based media are converted to a digital form. The relationship between humans and physical objects is also important to the understanding of this shift. Paper-based knowledge always has a physical form a three-dimensional, textural quality and this aspect of what occurs in the process of using the material must be considered. Archives especially are endowed with many layers of physical elements, from the paper, the ink, handwriting versus type, stains, doodles, binding style, and so on. The human-object relationship is rich as well as complex and involves issues of value, meaning, experience and process. These relationships, elements, and processes, in turn, all have an effect on the information transfer process and what kind of information do and do not transfer.

1.1 Motivation

A paper is a material made of cellulose pulp, derived mainly from wood, rags, and certain grasses, processed into flexible sheets or rolls by deposit from an aqueous suspension. It is used chiefly for writing, printing, drawing, wrapping and covering walls. Paper is also simply defined as a piece of material containing a written or printed statement or document. Motivation for choosing this objective is the concern for reducing the consumption of natural resources such as wood, water etc. Implementation of this objective will reduce the human efforts as well as it will be ease in accomplishment of task.

For centuries we have tried using different methods and tools to carry out our work, to make it more efficient and faster, thus for more than four decades we have spoken of the concept of the Paperless office.

The Paperless office should be seen as an immediate project to achieve e-government an initiative of great interest for the application of new technologies in management, and good environmental practices can contribute to sustainable development.

Organizations that use paper-based processes also face security risks due to paper documents that have (a) been lost, (b) been damaged, (c) been misfiled, or (d) fallen into the wrong hands due to that more and more companies and organizations are making the shift toward electronic filing, saving space and increasing security. Large computer servers have the ability to store mass quantities of information in a secure state and location. Digital documents stored on these servers can be easily retrieved within minutes, which increases employee productivity due to the elimination of the chore of searching for misfiled physical documents.

We need to move forward towards paperless system from paper-based process not only because of environment degradation obviously it is one of major reason to adapt paperless system but it also increases work efficiency, better information security and time saving.

1.2 Problem Statement

Paper-based processes involve the handling of physical document(s), photocopying, archiving, and retrieving physical document(s) from a file cabinet. Paper based processes are inefficient, cost valuable office space, and pose security risks notes that filing systems require a large amount of physical space and spawn inefficiencies in searching for previously filed papers.

Organizations that use paper-based processes also face security risks due to paper documents that have been lost, been damaged, been misfiled, or fallen into the wrong hands. more and more companies and organizations are making the shift toward electronic filing, saving space and increasing security. Large computer servers have the ability to store mass quantities of information in a secure state and location. Digital documents stored on these servers can be easily retrieved within minutes, which increases employee productivity due to the elimination of the chore of searching for misfiled physical documents

Collaboration efforts using paper documents prove challenging at times. Employees cannot easily distribute or share paper documents compared to their digital counterparts. Organizations that have replaced paper-based processes with paperless processes

performed on a computer or other device enjoy greater flexibility with digital documents. Digital documents are easier to search, share, and backup than paper documents, and they take up essentially no space. electronic files allow better access and information sharing, cost less in terms of physical space and personnel, and can increase productivity—all of which add to the bottom line.

The term paperless office evokes images of an office without paper documents; however, in reality, a paperless environment closely resembles an office utilizing integrated information systems with multiple software tools to reduce paper consumption and improve efficiency in retrieving electronic documents. Paperless environments increase office productivity and collaboration due to the ease of sharing and retrieving digital documents.

The paperless trend has also extended to services offered by companies to their customers. For example, major institutions are offering their clients the convenience of mobile applications and the option to receive electronic invoices. it's increasingly rare to find banks, utilities, and other services that do not offer paperless billing and payment. Some institutions such as banks have gone further by offering their mobile application to their clients. The institutions that offer a variety of options such as a mobile application, electronic billing, and electronic payment benefit by not having to send out paper invoices, while their customers enjoy the convenience of performing tasks such as transferring funds, paying bills, and checking account balances from anywhere regardless of time and place. Furthermore, electronic payments have mitigated security risks that were associated with traditional methods of payments such as cash and checks. The problems with paper payments were that cash could be counterfeited and signatures could be forged on checks. Therefore, organizations that utilize electronic payments eliminate these issues.

In current system, for getting project of Gujarat Water Supply and Sewerage Board, every construction organizations need to search on different advertisement and for application form they need to go central office and submit documents with forms. For completing process, they need to go their more than one time. This process is largely paper based and time consuming.

1.3 Objectives

1.3.1 Main objectives

Our main objective is to develop an operational E-government platform for Gujarat Water Supply and Sewerage Board.

1.3.2 Specific Objective

I. To review literature on related systems and analyze the existing manual system
II. To collect data and identify the system's requirements
III. To design an online office for Gujarat Water Supply and Sewerage Board.
IV. To implement the system for Support increased communications speeds between stakeholders in non-tender projects, submission of documents and approve

1.4 Scope

Most of the government institutes rely in traditional office paper process which is costly, non-environment friendly and in-efficiency. The scope and area of study is mainly centered on the paperless office or e-government application system for Gujarat Water Supply and Sewerage Board. The research will investigate the formal office by looking at existing systems and related solution and current workflow.

CHAPTER 2
Literature Review

2.1 CRITICAL EVALUATION OF JOURNAL PAPERS

Paper 1: An analysis of the feasibility of a paperless environment – the case of the Mona school of business

A literature review as well as questionnaire was used, with the questionnaire being the primary research tool. The articles for the Literature Review ranged from 1999-2003 and were looked at to give a general idea of what is currently being published on the subject. The questionnaire was administered among all levels of staff and structured to get feedback as to how best the less paper environment could be incorporated into the organization.

The findings from this research project suggest that most of the staff members were interested in moving towards a paperless environment. The goal should not be to get rid of paper in its entirety (this is not going to happen for a long time) but to try as best as possible to bridge the gap between the paper and digital technology

Keyword: Office automation, Document management, Ergonomics.

ISSUES: this paper is surveyed for Mona school of business every organization is unique, so implementation of the paperless office will vary from one organization to the next

Paper 2: Electronic Document Management System for Kirikkale University.

In paperless office Document management system, which is responsible for creation, manipulation of records efficiently is an important feature. In this research study author discussed methodology about creation of EDMS for Kirikkale University.

Today, universities and institutions produce and use many documents in several types. Producing, sharing, copying, and archiving documents are an important issue. Most of the institutions and universities handle these tasks manually or semi-automated. However, it is faced with many problems in practice since there is not an effective document management system. It is difficult to achieve necessary documents quickly when it is needed and to share these documents with others when it is needed. For such reasons, institutions must develop document management system app

Keyword: Electronic Document Management System, Document

ISSUES: This paper is surveyed for Kirikkale University every organization is unique, so implementation of the paperless office will vary from one organization to the next.

Paper 3: Document Security in Web Applications

In Web application When we want to store and retrieve document that time we think about security. In this paper said about how to store and retrieve document. Here Author, said that we should store document in folder that is not accessed by publicly. For security we should follow two step 1) Render document after proper user authentication and then 2) Use Secure cache control mechanism

For retrieve document we should not use the direct URL for access of document instead of we can use a script that retrieve document from database and then send binary data to the web browser and web browser show the document and we also use cache control mechanism that is two type one is No-cache and other is No-store that is used for how web browser store data. From this we achieve the document security.

Keyword: Document storage**,** cache control

ISSUES: Different browser support different types of Cache mechanism this is issues in web application for document security

Paper 4: Web based paperless campus: An approach to Reduce the cost and complexity of education administration

Educational organization during admission process uses large amount of paper, to make admission process paperless or less-paper author proposed e-administration idea for Educational institutions. Recent increase in access to personal computer and networking systems have made it possible to perform much of cumbersome and costly paper-based administration in all organization. The aims of this study are 1). To proposed e-administration platform to educational administrators in schools and colleges. 2). To supply a platform that will allows educational administrator to work anywhere at any time.3). Support increased communications speeds between stakeholders in education

Keyword: e-administration, educational administration, paperless campus, paper-based administration.

ISSUES: Study is limited to design and implementation of e-administration application system for educational administration in schools and colleges.

Paper 5: Challenges for The Quality of Information in the Paperless Office

In this paper author describe ways to take advantage of electronic innovations that can take the place of traditionally labor-intensive tasks. In this research paper author discussed importance of Document oriented systems in paperless office. Author proposed four types of document systems along with capabilities and features related to each of them. 1) Image Archival Systems, 2) Document Management (DM) Systems, 3) Content Management (CM) Systems ,4) Records Management (RM) Systems. By this research study, one can get to know what are the Basic components every document-oriented system must have. Author also mention other stuffs which ensure quality of document-oriented system.

Keyword: paperless office, Document oriented Systems.

ISSUES: No Discussion mentioned about practical implementation.

Paper 6: Design and Implementation of Paperless Office System

In this paper author said that for converting office into paperless first we need to divide our system or office into different module and functionality. In System module, author divide users into different types and it is different accessibility. Then divide module

like Document module, Pending module, Host module, Public information module and Mail module etc.

Author said that core of the system development for paperless office is database. Database supply significant role for access the information if database design is poor then overall system not work efficiently.

Keyword: Paperless Office System, Functional Module, System Structure

ISSUES: The relationship between table and not reduce redundancy data

Paper 7: Paperless Office: a new proposal for organizations

The Paperless office concept means a change in how the technology industry, for information and management, is a "new way of working in the company". This undoubtedly brings other considerations, paradigms and feature works which affect the labour in all areas of business.

Quick and easy access to information and services of the organization. - Increase the availability of services, extension of hours of care 24 hours a day, all year. - Improving the quality and speed of service by reducing response time.

Keyword: document management, electronic documents, paperless office, information technology, e-administration.

ISSUES: Greater first investment is needed in equipment and software (fax, scanner, databases, Internet, Intranet, etc.).

Paper 8: The features and impact of the paperless office, with specific reference to the City of Johannesburg

In this paper, As a first phase the amendment schemes and relevant Provincial Gazette promulgations were electronically captured and archived using Alchemy software (distributed by the Information Management Research Company). The captured records can be accessed from the desktop at the information counter, improving retrieval times, accuracy and customer service. It supports the organization's vision.

Keyword: Building the database, Training and quality control, Building the database

ISSUES: The paper-based file storage system at the Town Planning Information Counter are often slow, cumbersome and error-prone.

Paper 9: Networking of Paperless Offices in Technical Institutes of India

In the present contribution authors have focused on two technical institutes of India which are premier in nature and it was expected that such institutes will show right path for others to move upon to become a paperless organization. However, the study shows that it is only a dream and can become reality if the rules and regulations set up several years ago are changed accordingly.

The opinions and perceptions were sought through well designed questionnaire from faculty members, officers, and support staff of the two institutes. In case of Technical Institute P1 the opinion for adoption of paperless office is about 65% while in Technical Institute P2 it is slightly better. In all the items related to usages of IT tools & techniques, electronic communications and keeping of records electronically, e-functioning of laboratories, ELibrary thorough use of Internet. The networking of available paperless activities is excellent in both institutes.

The training and upgradation of knowledge around application of ICT tools are very much essential for having paperless office of any institution. The advantages like easy storage, time savings, user friendly, security, efficiency and accessibility will be achieved if continuous efforts by all the human resources working in any organization are streamlined

Keyword: Paperless offices, Networking, Information Technology, Efficient Communication, Best Practices, Internet Services, Digital Era

ISSUES: Almost all human resources of P1 & P2 are not fully convinced for paperless system. The main reason is that their rules and regulations are being applied as they existed before development of IT tools.

Paper 10: Web Server Security and Survey on Web Application Security

When we developed Web application that time, we need to focus on security of web application and web server to prevent from hackers. Hackers that damage our system and

try to thief information and they can do many malicious activities. For that prevent from hacker we need to make our application secure using different techniques and tools.

In this paper author tell about many types of attack and prevention for that attacks. Like Threats to Web Server in this attack is Profiling, Denial of service, Unauthorized access, Arbitrary code execution, Elevation of privileges, Viruses, worms, and Trojan horses. And other attack is SQL Injection Attack, Cross Site Scripting (XSS), Cross Site Request Forgery (CSRF), Open Web Application Security Project (OWASP).

Author also Gide to developer and Verifier's for the how to add security in the web application.

Keyword: SQLIA (SQL Injection Attack), XSS (Cross Site Scripting), CSRF (Cross Site Request Forgery), OWASP (Open Web Application Security Project)

ISSUES: Not described which tools and technology used for the achieve the security

Paper 11: Perusal of Web Application Security Approach

In this Paper author give information about SDLC (Software Development Life Cycle) and then tell about vulnerability. There are two type of vulnerability 1) Logical Vulnerability: This is Vulnerability because of poor logic in the coding. 2) Technical Vulnerability: This type of Vulnerability like CSFR and XSS.

Vulnerability present at different layer like Web application layer, Hosting layer and network layer if one of this layer has Vulnerability then our application is not secure for that author give information about different layer of security like follow security standard, Secure coding, update, and patch management. Author Suggest the use of WAP (Web application Firewall)

Vulnerability Assessment and Penetration Testing (VAPT) is used for the check the Vulnerability in the application. using Vulnerability Assessment, Penetration Testing, vapt methods, vapt approach and vapt process on different domain we can check the Vulnerability of system.

Keyword: component, Software Development Life Cycle (SDLC), Web Application Firewall (WAF), Vulnerability Assessment and Penetration Testing (VAPT).

ISSUES: No issue in this paper

Paper 12: Implementing a Paperless System for Small and Medium-Sized Businesses (SMBs)

Paper-based environments are inefficient, costly, and pose security concerns. Conversely, paperless environments supply many benefits to organizations, including increased data security, ease of information sharing, and more efficient and cost-effective processes. Organizations who are considering the move to a paperless environment have multiple options, including document digitization, web portals, electronic forms, and electronic document management systems. Those who handle the transition from paper-based to paperless environments can ensure a smoother transition by addressing potential obstacles in the transition, including employees' resistance to change and the organizational mindset of all-or-nothing regarding the paperless concept. Those organizations that carefully select the right technology and processes for their paperless environments and who plan the transitions carefully will enjoy better outcomes.

Keyword: paperless, paper-based, document management system (DMS), electronic document, small and medium-sized businesses (SMBs)

ISSUES: Author raise issues about lack of current articles for Paper-Based Systems rivals the limited number of articles for Paperless. they either (a) too old, (b) focused on the medical industry, or (c) did not include any references

Paper 13: Role of Paperless Procedures in Achieving Working Style Reform

A shift to paperless document handling is essential to implementing new working practices free from constraints of time and place. As the elimination of paper documents affects all areas of a business, implementing it requires the entire company to work together, with top-down measures being necessary. Furthermore, holding more information digitally rather than on paper opens possibilities for RPA and other forms of workplace automation.

Paperless document handling is intended to supply more efficient working practices through the reliable management of electronic documents and the establishment of workflows that are based on their use. Achieving this requires that all staff work together to put document management rules in place that are standardized across the company, and to

set detailed rules such as having different management practices for internal and customer documents or setting dates for when files are to be removed.

Keyword: paperless, paper-based, Robotic process automation (RPA), Optimal character recognition (OCR)

ISSUES: Small organization are not able to take benefits of RPA as they needed resources, and special skill

Paper 14: End of the paper trail: moving towards a paperless ward round

The use of electronic notes is fast becoming the ideal towards which the modern National Health Service (NHS) strives. Electronic note-keeping and records have many advantages. Legibility ceases to be problematic, information can more readily be shared among professionals (who may be separated geographically), information is far less likely to be misplaced and bulky notes do not have to be stored and transported.

Here they created Microsoft word-based template that use full for managing records of patient's information and for wide spread with other agencies (e.g. social services, advocates, unpaid carers, relatives, and the patient themselves) they use email.

Keyword: paperless, notes, Microsoft word, mail, ward

ISSUES: here they use mail for sharing of records it compromises with the Confidentiality of user information

Paper 15: Real Time Databases for Applications

In this paper author give information about different database it’s advantage and drawback and also compare the database with another database. firebase is google provided database. Firebase is NoSQL database and provide Authentication, Hosting, Messaging, Analytics, Crash reporting and more. Mongo dB is schema less database And it is Scalability, High Performance, Rich Query Language, and High Available. Rethink DB is a JSON document database and it has Real time push architecture, Failover in Rethink DB and JOINs

Author also give information about database model, database transaction scheduling and deadlock when access the database.

Keyword: Google Firebase API, MongoDB, Rethink DB, Features, Drawbacks, Database Model, Scheduling, Deadlock.

ISSUES: There is no information for application where we can use this database

Paper 16: Paperful to Paperless Office Forms Integration Framework

For make paperful to paperless office we need a Form for the gather the information from the user. From author point of view, he said that after few years xml form takes place of html form. Author made software for making the form using xml.

This xml form is separated from the presentation and data. When create form that give xml code for form and then parse this form using XSLT that translate the form into html and xml code. Advantage of this form is this is separated from the representation for that this is use in desktop, PDA and another device. For store the data he is use the oracle database. Using this software user create form, edit form, merge form and use the predefine template. For implement this software use JSP, JavaScript, Xform.

Author also implement the version control for when someone edit the form that time new version of form is created and record the time and date of last edited form.

Keyword: Framework, XML, Web Form, Version control

ISSUES: less input control use in the software like textbox, checkbox, radio button and submit button other is not implemented. There is no technic to retrieve the information form the database to form.

Paper 17: Analysis of Security Issues in Electronic Payment Systems

In this research study author described CATEGORIES OF ELECTRONIC PAYMENT SYSTEMS to effectively fulfil financial needs. Broadly, electronic payment systems can be classified into four categories: online electronic cash system, electronic cheque system, online credit card payment system, and smart cards based electronic payment system. Each

payment system has its advantages and disadvantages for the customers and merchants. Author highlight the analysis of the security levels in relationship with fraud vulnerability, and determine how this relationship affects or boosts the confidence of the users.

This research paper discusses a complete review of the different types of electronic payment systems in terms of online payment processes, authentication mechanisms, and authentication types. The paper further demonstrates the application of the different authentication mechanisms and types in the categories of the electronic payments system highlighted. Finally, analysis reveals that electronic payment systems with authentication mechanisms involving two or more authentication factors tend to be more secured, reduced fraud vulnerability, and boost users' confidence in using electronic payment systems.

Keyword: eCash, credit card payment system, vulnerability, digital signature, biometric finger print, merchant

ISSUES: No discussion to design an enhanced algorithm for electronic payment systems whose authentication's capability would surpass the existing online

Paper 18: Office of Future: Digitizing Record-Keeping

The Office of the future (paperless office) has been the buzzword since 1980 and quiet a number of technologies has automated office functions but has not yet erased paper usages. In this work, Softcabin that actualized the intention of the paperless society was developed. The software with its friendly nature approaches the soaring situation of paper consumption with a common-sense strategy by creating a —less-paper office workflow which is a platform to attaining a digital based repository system for any organization. Softcabin was developed using as a prototype the conventional record-keeping system for ex-students and present students records in the Computer Science department Babcock University.

This software is recommended for school officers, administrators and other office management units on bigger companies. This research provides room for further study in extending the digitization project to Libraries and Administrative offices. Also, the system can be expended to handle special cases of withdrawals, suspension or dismissal of students to be reflected in report page. We are open to remarks that are focused on the

enhancement of the performance of the software and ensuring that all the overall system works optimally.

Keyword: Digitization, Digital Preservation, Paperless-office, Less-paper Office, Digital Archive, Cloud Storage, Scanning, Automation Systems, DaaS

ISSUES: this system is only use for record keeping, it filed to provide sharing of information among organization, and here they used scanning for digitizing the records.

Paper 19: Going paperless - on the evaluation of electronic form technologies

The authors in this article explore a solution for going paperless by evaluating electronic forms. Author identify issues regarding paper forms, such as the need to repeatedly fill in the same information, the fact that some forms were turned in incomplete, and the difficulty in managing various versions of the forms. The Research reviews the requirements that must be fulfilled in order to convert to electronic forms. The authors identified the following requirements that must be met for electronic forms to be successful: (a) authentication and authorization, (b) pre-population of forms based on identity, (c) basic validation, (d) usability and accessibility, (e) digital signature and auditability, (f) ease of creation, and (g) mobile versions. The authors experimented with several form technologies. Their conclusion is that there is not a one-size-fits-all form technology. Organizations will need to assess their requirements and then decide which technologies fit their processes. This article is useful for this specific research study because it identifies the use of electronic forms as a solution that helps an organization to reduce paper consumption and transition to a paperless system.

Keyword: eCash, credit card payment system, vulnerability, digital signature, biometric finger print, merchant

ISSUES: Discussion does not include practical implementation.

Paper 20: Practical Application Challenges for Construction Submittals in a Paperless Contract File

Paperless Office

This research study explored the transition from a paper to paperless environment for the U.S. Army Corps of Engineers construction submittal process.

The objective of this research study was to provide guidance to make an effective transition from existing paper review process, to a paperless digital platform, while securely and effectively incorporating multiple requirements and constraints with multiple users. More specifically, how to process digital submittals uniformly and effectively within RMS provided the viability of RMS version 3.0. 1. Determine a standard operating procedure and uniform flow

Keyword: Submittal, Paperless, RMS, Resident Management System, USACE, Construction, Shop Drawing

ISSUES: No Implementation of a fully functional RMS 3.0.

2.2 SUMMARY OF RESEARCH PAPER

Paper Name	Author	Publication year	Methods use	Advantage	Limitation
An analysis of the feasibility of a paperless environment – the case of the Mona school of business	Mardene Rosalee Carr	2005	literature review as well as questionnaire (Surveys)	A less paper environment is a more realistic achievement at the Mona School of Business.	More specific for Mona school of business.
Electronic Document Management System for	Mustafa Başıbüyük and Atilla Ergüzen.	2015	Several studies have been carried out for more efficient	Everything is described in detail with implementati	Here, limited IT tools & technolog

Kirikkale University.			document management systems in the universities of Turkey and world.	on information such as tools used in EDMS.	y is mentione d weather more tools are available to create EDMS (Electronic Document Managem ent Systems)
Document Security in Web Applications	Andres Desa	2005	Several Information Security mechanisms have been used to securely store and retrieve the documents.	We can store and retrieve document securely	Depend on the type of web browser
Web-based paperless campus: an approach to reduce the cost and complexity of education Administration	Hastrup A. Victor, Lawal N. Olawale, Yekini N. Asafe.	2014	literature review and research study.	Author Discuss E-administration systems for schools and colleges, one can get idea about	There is a need to intensify the public enlighten ment program about the need for

				components needed to Design Paperless office.	web-based e-administration system within schools and colleges so that everybody will be acquainted with the system before its implemented, since it will affect everybody.
Challenges for The Quality of Information in the Paperless Office	Mircea Georgesku , Alexandru Tugui, Florin Dumitriu	2008	Discussions and Research study	Discuss types of document-oriented systems in incredibly detailed manner and describe components that every	No clue about first cost associated with the purchase of a paperless filing Modificati

				document-oriented system should have.	ons/changes to documents or files.
Design and Implementation of Paperless Office System	Busheng Li and Jingfang Hu	2017	In this paper Author divide office in different module and different users, different access permission	system, management, reduce managements, increase management efficiency, increase economic benefits	No implementation about relationship between tables, data redundancy control
Paperless Office: a new proposal for organizations	Sandra-Dinora, Alejandro, Graciela	2015	Document management, Workflow study, E-administration.	- Decreased costs - Decreased response time, increasing the speed of service.	implementation processes, especially technical and cultural changes about attitude and aptitude towards modern

					technologies.
The features and impact of the paperless office, with specific reference to the City of Johannesburg	M. Hattingh (Midrand MLC, Midrand, South Africa)	2001	-Enabling technologies: Documents must be put into a computer-readable format before they can be stored electronically. -Enabling technologies that aid in the electronic management of documents include scanners that use image technology.	-Electronic documents can be stored and delivered in various forms and formats, and delivered as a package to the user as, when, and how required.	The paper-based file storage system at the Town Planning Information Counter are slow, cumbersome, and error-prone. Furthermore, it does not support the principles of local government for efficient service delivery.
Networking of Paperless Offices in Technical Institutes of India	Seema Shah, Mohit Tiwari	2010	literature review as well as questionnaire	Author pointed to use ICT tools in managerial	Applied rules and regulation are not up

			(Surveys)	sector, communicatio n, record kipping	to the date with new generatio n IT Tools and technolog y
Web Server Security and Survey on Web Application Security	Shaikh Bushra Almin	2014	Describe different types of attacks on web applications and web servers	How to prevent from the different attack	Not described which tools and technolog y used for the achieve the security
Perusal of Web Application Security Approach	Ashikali M Hasan, Divyakant T. Meva, Anil K Roy, Jignesh Doshi	2017	Apply security on different layers	Give information about different approach to secure the applications and different method to check Vulnerability	No limitation in this paper
Implementing a	Chad Chao	2015	Research on	They pointed	Obstacles

Paperless System for Small and Medium-Sized Businesses (SMBs)			paperless and paper-based articles and keywords-based result	solution for Small and medium business to become paperless	are mind set of all or nothing and employee resistance and police of organization and lack of knowledge
Role of Paperless Procedures in Achieving Working Style Reform	Yuki Aoyama Nobuko Soga Kenji Shinotsuka Naoya Oike Manami Fukumoto	2018	importance of paperless procedures and the utility of RPA, using case studies	RPA with paperless Document, New work style	Small organization are not able to take benefits of RPA as they needed resources, and special skill
End of the paper trail: moving towards a paperless ward round	Jack harvey, Max pickard, Mohammed NuNhuck	2008	Use Microsoft word template for record	system use full for small individual to make them self-paperless	Confidentiality of user information, lack of

					proper software for small entities in organizati on
Real Time Databases for Applications	Sonam Khedkar, Swapnil Thube	2017	Compare the database with each other	Give the information about different real time database	Not give the applicatio n where we can use database
Paperful to Paperless Office Forms Integration Framework	Madhuri Potu	2004	Author use the Xform, JavaScript and JSP for creating the xml form	Using this form data and presentation are independent from each other. We can use Predefine template, edit them and also make user define form.	Only consider few compone nts for the make form and there is no technic for retrieve the data from the database to form
Analysis of Security Issues in Electronic Payment Systems	Princewill Aigbe, Jackson	2014	It provides a review of the various online	This paper presents a complete	in particular, the three-

	Akpojaro		payment systems. Analyze the various authentication mechanisms of the online payment systems and levels of confidence each provides.	review of the different categories of electronic payment systems in terms of online payment processes, authentication mechanisms, and authentication types.	factor authentication model; including biometric (finger-vein) to design an enhanced algorithm for electronic payment systems whose authentication's capability would surpass the existing online payment system but here They have not explored it.
Office of the	Okoro U. R.,	2013	Window	It is useful for	No facility

Future: Digitizing Record-Keeping	Awodele O., Kuyoro S. O. and Adekunle Y.A.		application	individual and small organization for record keeping	for sharing records and Use of scanner for digitizing records
Going paperless - on the evaluation of electronic form technologies	Lutteroth & Weber.	2012	Study Evaluation of form technology and discussed methods for Going paperless by electronic forms.	Discussed that electronic forms have many advantages, such as the possibility to transfer, store, complete, search and manage them more efficiently The authors identified some requirements that must be met for electronic forms to be successful.	Our results show that current technologies differ greatly in the requirements that are addressed, and that no single form technology satisfies all the common requirements.

Practical Application Challenges for Construction Submittals in a Paperless Contract File	P. Tod Smyrichinsky, Meng, P.E. and Scott W. Kramer.	2018	questionnaire (Surveys) as well as discussions	One can get idea about how to transform paper based to paperless system for large organization incorporating multiple requirements and constraints with multiple users.	No Implementation of a fully functional RMS 3.0.

Table 2.1 Summary of Research Paper

2.3 Existing Systems

- Taking about the current systems most of the works are done in the health services and education institutes.
- In the government sectors all the works are done manually on paper
- System that were developed only up to research purpose.
- To use Some products, you need to be at particular place for to access.
- Different System for different process in office.
- Office only and not incorporate customers.

2.4 Loophole of Existing Solutions

- Most of the work done for Health and education sector.
- Current system use in government and small and medium institution are paper based
- System are only used for particular tasks
- Not available through internet you have to go to institute for access information
- Only for office employee are able to use not available for customers
- Lack of information about technology, older technology used for development

CHAPTER 3
Research methodology

This chapter deals with the research and methodology to do in the project work. It shows detailed and deep insights into the experimentation associated with the project.

3.1 Introduction of Research Methodology

3.1.1 Working

Traditionally organization have conducted their business on paper to exchange information between businesses. specially in government sector majority of work are done through paper-based systems. Use of paper-based system cause many problems for government employee and the other users of the office.

From evaluation of research which has been done in the field of paperless environment, we get to know that "How to move forward from paper-based system to paperless system" Paper base system required cabinets to store the paper instead and require paper-based filling system managing of papers instead of this we can use Document management system (DMS) for document storage, and filing. Most of the papers for collecting information instead of this we can use electronic forms and to store information we can use Databases. we can eliminate printing and copying of papers using information sharing. we can use authentication system improve security of overall system.

The problem with current system is that for getting project construction organizations need to search on different advertisement and for application form they need to go central office and submit documents with forms. For completing process, they need to go their more than one time. This working system is more time consuming and less environment friendly because everything is paper-based. We proposed a system that makes idea of e-government into reality by using paperless office. The proposed system work within employee of Gujarat Water Supply and Sewerage Board and construction organizations.

3.1.2 Advantages

I. Easy to access information
II. Secure system
III. Time saving
IV. Better information sharing
V. Environment friendly
VI. Reduced cost
VII. Paper less project tracking system

3.1.3 Disadvantages

I. High initial cost
II. Internet connectivity required

3.2 Proposed Methodology

The proposed system consists of web application which completes all the process at one place. Where all new projects is displayed from this portal for both government officer and organization do their side work and complete it. It is less time consuming and more environment friendly. The Web application consists of Information management system, data storage, and form technology. Information management system is responsible for storing, sharing and retrieving of Information and form technology used to create dynamic forms. A quality database is used here to store and maintain the data.

3.3 System Analysis

3.3.1 Study of existing system

Present system, in government office majority of work done based on paper and manual. Whenever there were new projects coming than government advertise in newspapers and notice board of every office. This system forces construction organization to check every advertisements or travel to the office for new projects. And then if organization want to construct the project than also, they need to travel to the office for multiple time in

different office for resolve query, inquiry, filling form and other work.in this the process of form filling required multiple documents from the organizations. After the submission date government employee analyzes and compare all application submitted by construction organization and select one of them for construction project.

3.3.2 Problem and weakness of current system

The current system is long procedure for the Application projects and it is time consume process for the analyze the application that is applied by user. To Store the document and information given by the user is difficult because of lack of space. Sometime missing the document from one file to another that is over head in current system.

3.3.3 Requirement of new system

Create common system for all project to advertise with alert facility and form management system that is useful to create new forms related to project and its database new workflow to eliminate or greatly reduce paperwork for government employee and organization user in construction project. Create project tracking system for checking status.

3.3.4 Features of new system

The new system is designed to solve problems affecting the manual system in use. It is designed to be used digitally. The new system will have features like:

I. Flexibility i.e. it can be accessed by any authorized person locally or remotely.
II. Better and faster storage/retrieval of information.
III. Fast rate of operation.
IV. Tracking system

3.4 Diagram

3.4.1 Use Case

Use case is a behavior diagram. Use case diagram show the user of system and how which functionality perform by user. Use case diagram is used for the visualize the function requirement of the system. Use case diagram also help identify any internal or external factors that may influence the system. Diagram provides a good high-level analysis from outside the system.

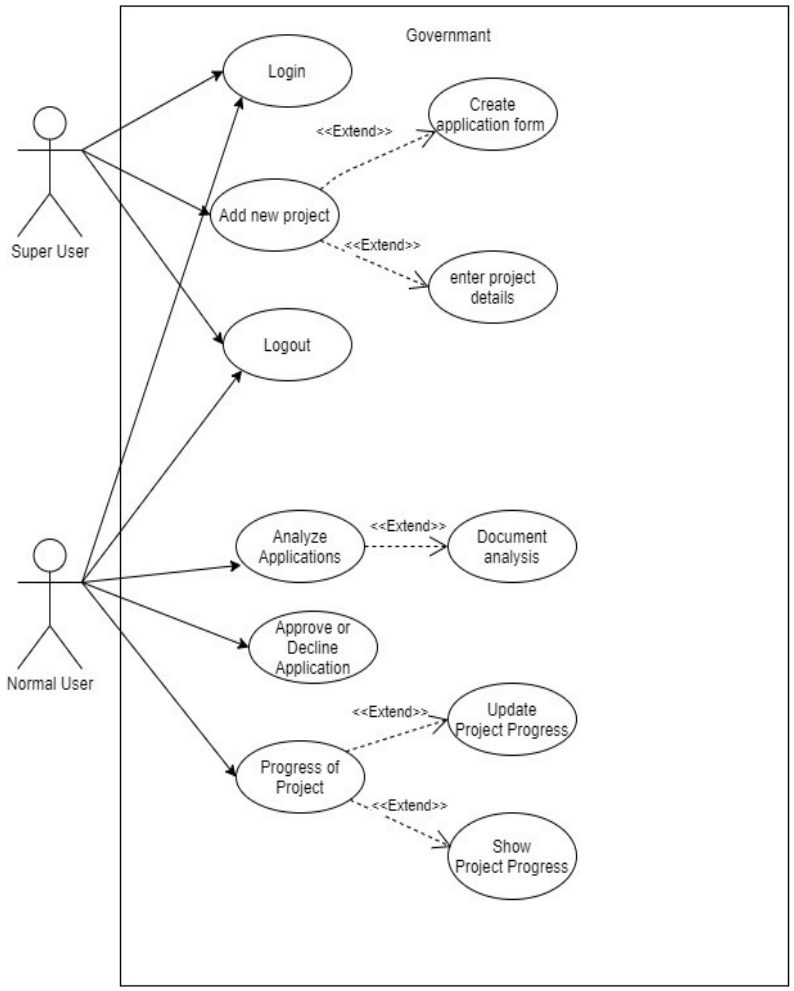


Figure 3.1(Government Employee Use Case)

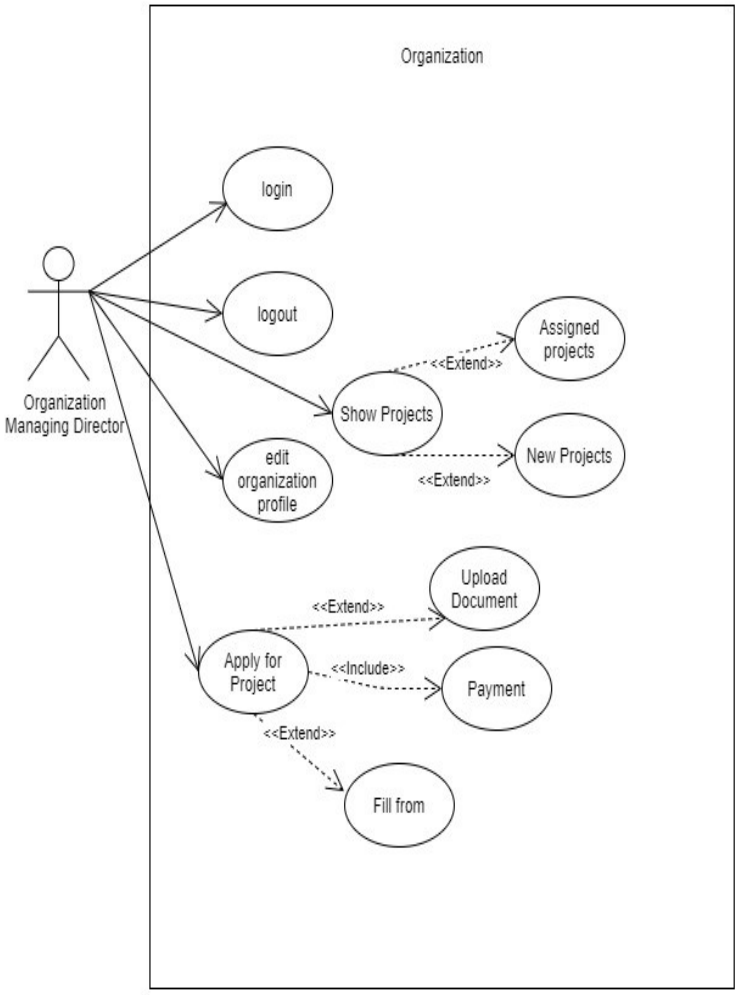


Figure 3.2 (Organization Use Case)

3.4.2 Class Diagram

Class diagrams are the most popular UML diagrams used for construction of software applications. The purpose of class diagram is to model the static view of an application. Class diagram is also considered as the foundation for component and deployment diagrams.

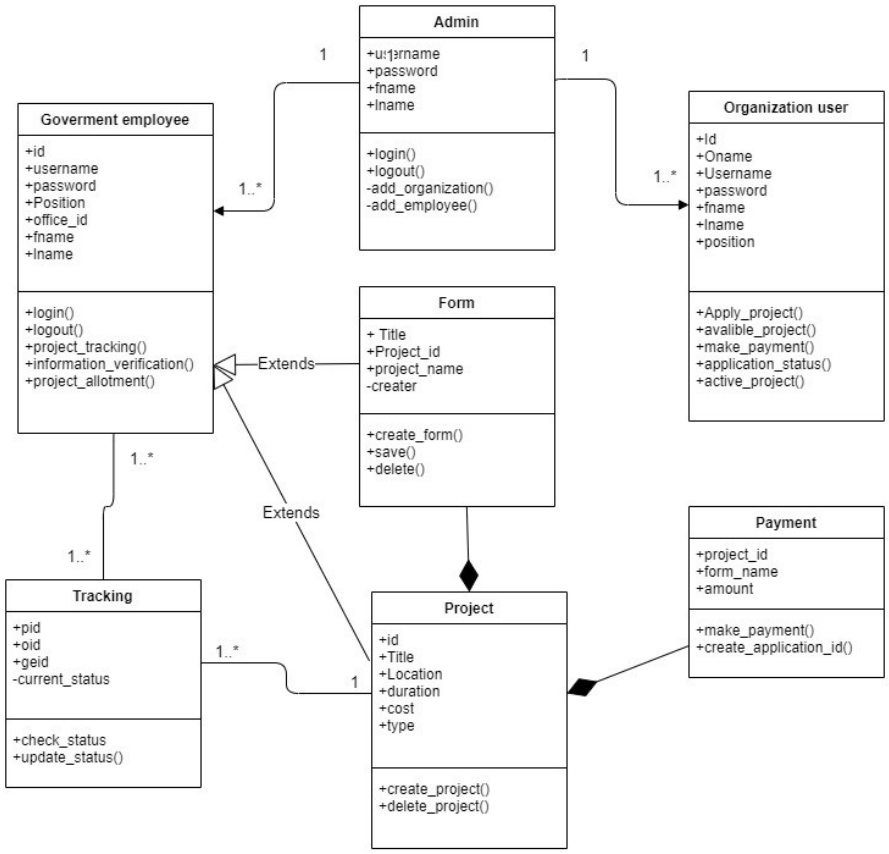


Figure 3.3(Class)

3.4.3 Activity Diagram

Activity diagram is important diagram in UML to describe the dynamic aspects of the system. Activity is a particular operation of the system. Activity diagrams are not only used for visualizing the dynamic nature of a system, but they are also used to construct the executable system by using forward and reverse engineering technique

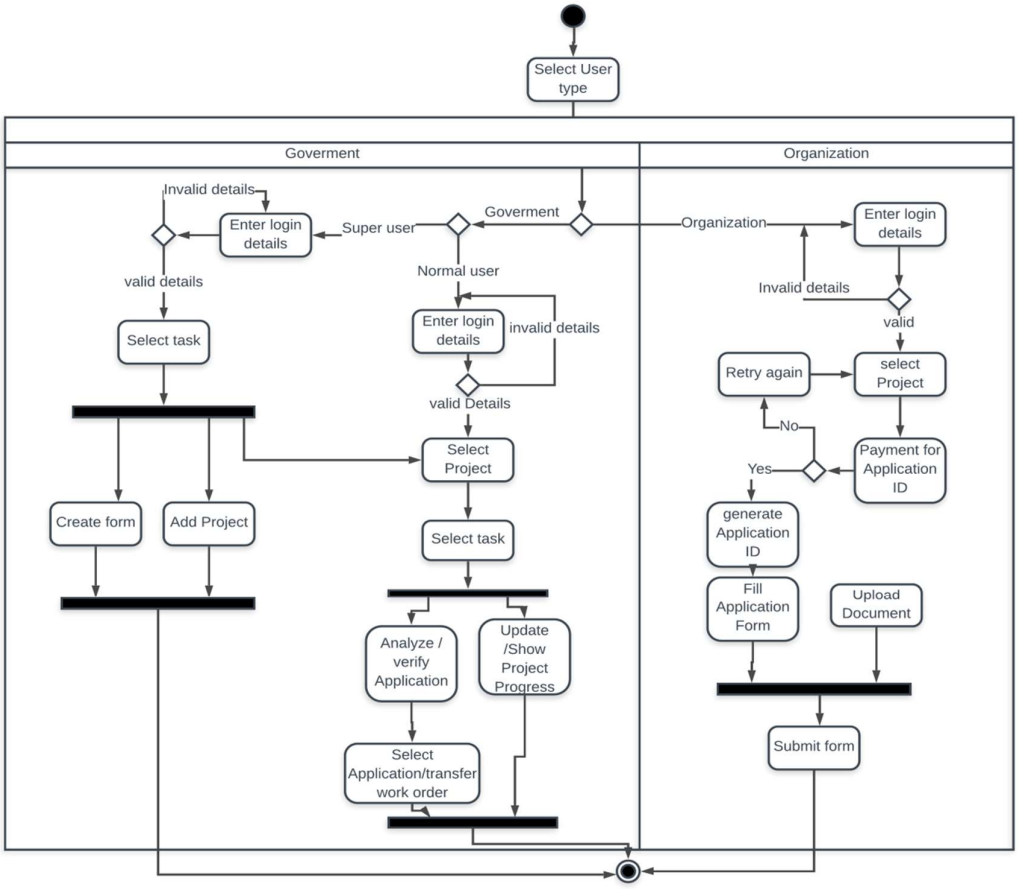


Figure 3.4(System activity)

3.4.4 Data Flow Diagram

A Data-Flow Diagram is a way of representing a flow of data through a process or a system. The DFD also provides information about the outputs and inputs of each entity and the process itself

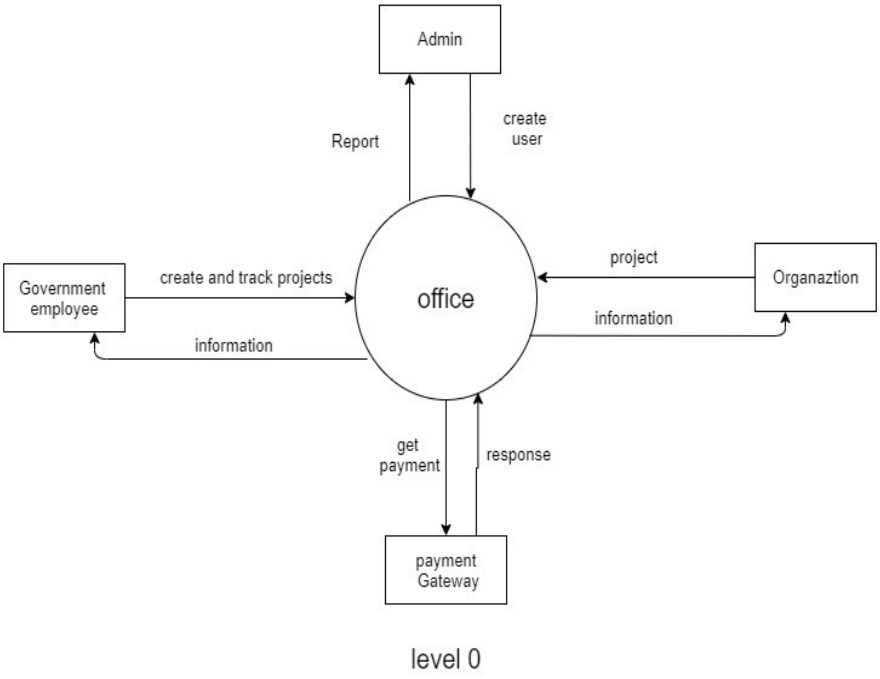


Figure 3.5(Dataflow diagram level 0)

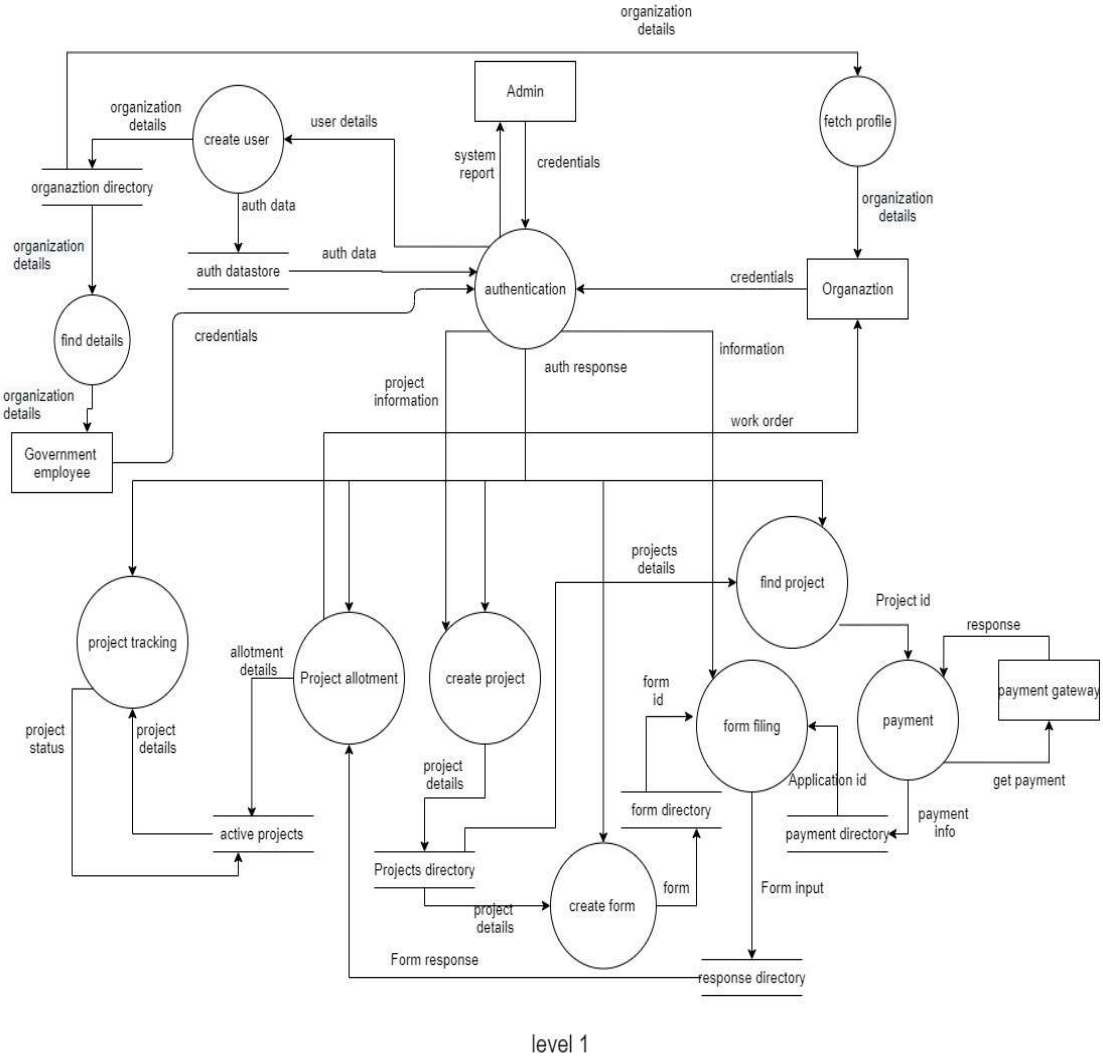


Figure 3.6(Dataflow diagram level 1)

3.4.5 Entity Relationship Diagram

An entity relationship diagram (ERD) shows the relationships of entity sets stored in a database. An entity in this context is an object, a component of data. An entity set is a collection of similar entities. These entities can have attributes that define its properties.

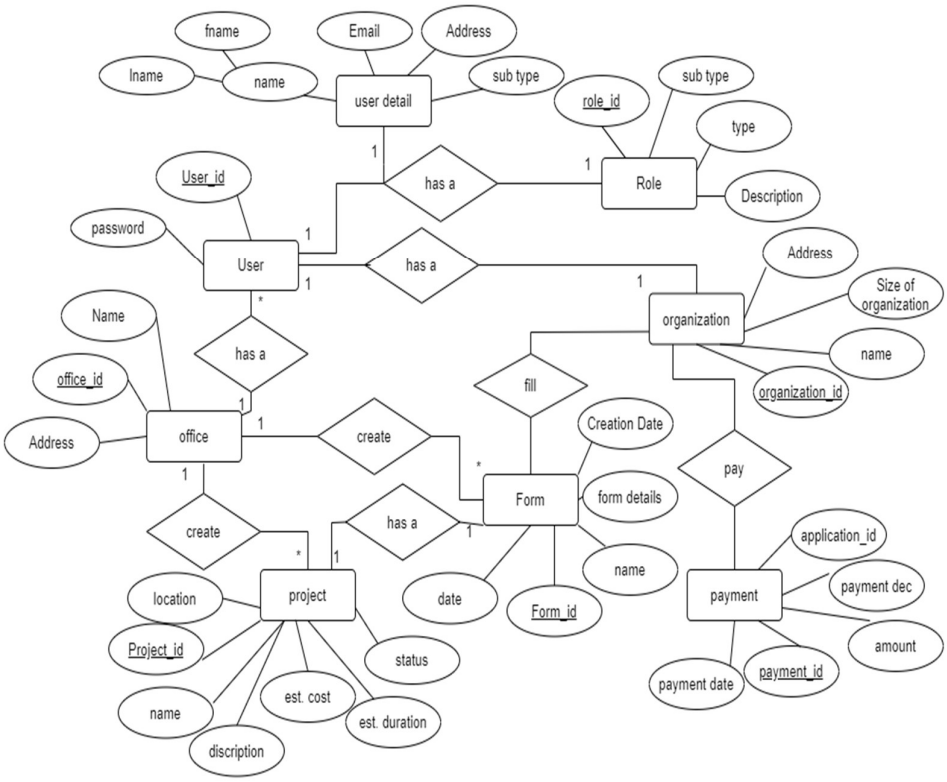


Figure 3.7(E-R diagram)

3.5 System Requirement Study

3.5.1 Functional requirements

These are observable functions that must be performed by this system. They specify the tasks to be performed in order to meet the requirements of its users. They include;

I. Show the details of project to the applicant.
II. The system will store all information about the construction organization and detail of their previous projects, stakeholders, size of organization etc.
III. Able to maintain and manipulate records in the database.
IV. Enabling the super user to create forms on regular basis.
V. The System must allow users to search
VI. The system will be able to track project progress.
VII. Help to carry out parallel operations.
VIII. Ensuring that only privileged members can borrow items.

3.5.2 Non-functional requirements

These are the qualities or standards that the system under development must have or comply with constraints in order to carry out its functions effectively. They include

I. Applicant should be already registered in government office
II. Good internet connectivity

3.5.3 USER CHARACTERISTICS

I. Admin: Admin can create account for the Government Employee and organization user. Admin can update the System and manage the system
II. organization user: Organization can show the project and they can apply for new project
III. government user: In government there are two type of use
    a. Normal user: They can allocate project to organization. Track and update project status
    b. Super user: All the characteristic of normal user and they can also create new project and create form for the project

3.5.4 HARDWARE AND SOFTWARE REQUIREMENTS

3.5.4.1 Hardware Specification

I. Client Requirements
   a. Computer
   b. Internet connectivity

II. Server requirements
   a. 2GB RAM
   b. Dual CPU core
   c. 30GB free storage

3.5.4.2 Software Specification

1. Client Requirements:
   a. Web browser (e.g. Chrome)
2. Server Requirement:
   a. Python
   b. Django
   c. Mongo dB

3.5.5 Constraints

To use the system end user must need a basic knowledge of operating a computer system.

CHAPTER 4
Implementation

4.1 Back End Technology

I. Python

Python is the most popular language for first-time learners for a reason. The language relies on common expressions and whitespace, which allows you to write significantly less code compared to some other languages like Java or C++. Not only that, but it has a lower barrier of entry because it's comparatively more similar to your everyday language so you can easily understand the code. Python offers a vast range of library tools and packages, which allows you to access much pre-written code, streamlining your application development time. Python also offers amazing web frameworks like Django and Flask, which we'll dive into later in the article.

II. Django(framework)

Django is an open-source python web framework used for rapid development, pragmatic, maintainable, clean design, and secure websites. A web application framework is a toolkit of all components needed for application development. Django provide inbuilt security for XSS, CSRF, SQL injection and other attack. Django provide many batteries.

III. Mongo dB (Database)

MongoDB is a document-oriented database which stores data in JSON-like documents with dynamic schema. It means you can store your records without worrying about the data structure such as the number of fields or types of fields to store values.

4.2 Front End Technology

I. HTML

HTML is a programming language used to describe the structure of information on a web page.

II. CSS

CSS describes how HTML elements are to be displayed on screen, paper, or in other media CSS saves a lot of work. It can control the layout of multiple web pages all at once it is used to define styles for your web pages, including the design, layout and variations in display for different devices and screen sizes.

III. Bootstrapping

Using Bootstrap, we can save a lot of time. we don't have to spend time writing code, we can just use the Bootstrap predefined design templates and classes and put it exactly where they fit. That's why it's simple to use Bootstrap.

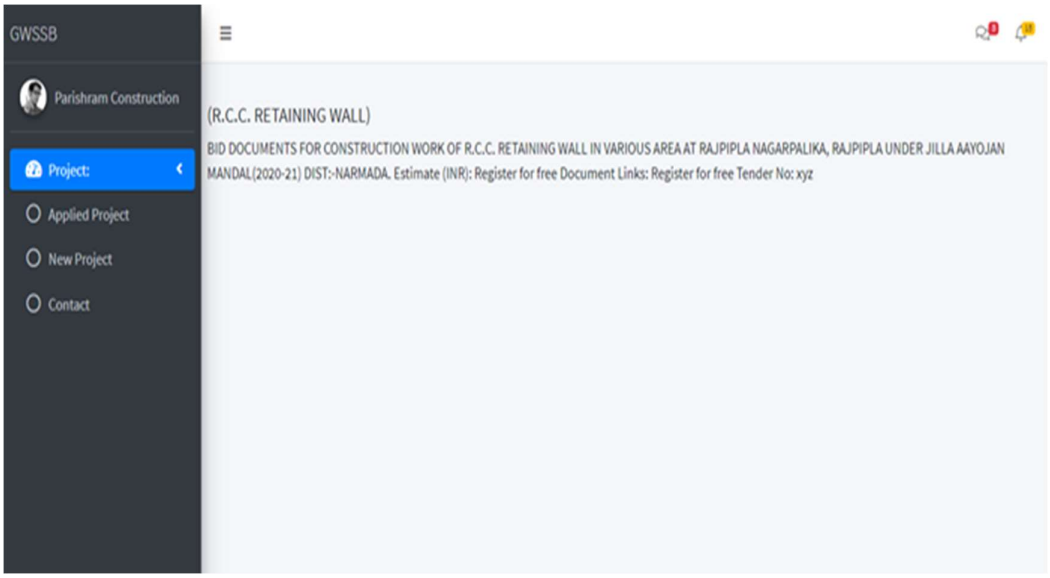
IV. JavaScript

JavaScript s a client-side programming language which helps web developer to do Web Application Development and make dynamic and interactive web pages by implementing custom client-side scripts.

V. jQuery

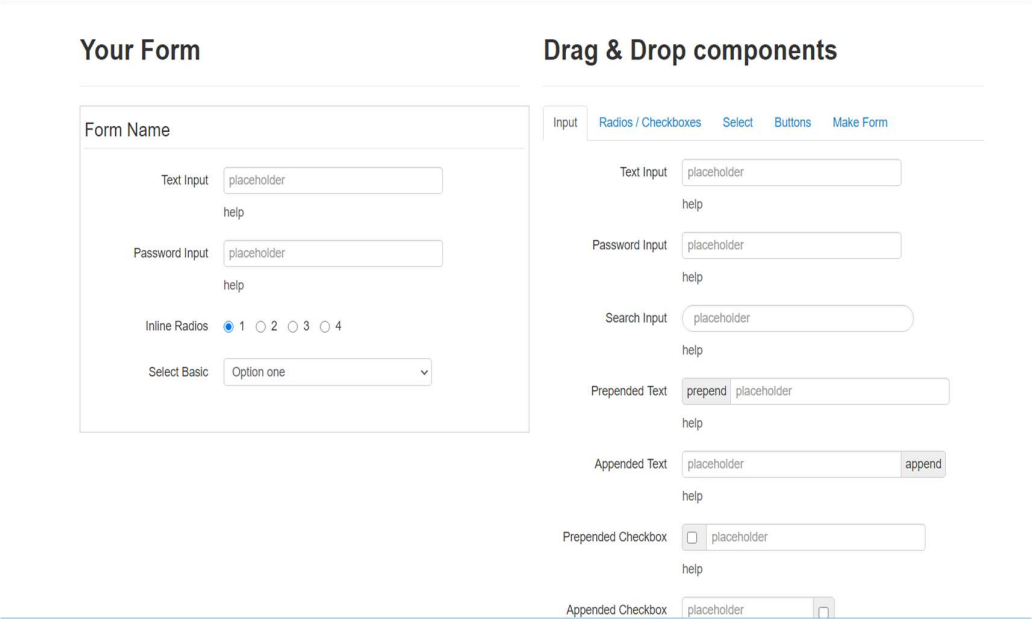
The purpose of jQuery is to make it much easier to use JavaScript on your website. jQuery takes a lot of common tasks that require many lines of JavaScript code to accomplish, and wraps them into methods that you can call with a single line of code.

4.3 Snapshots

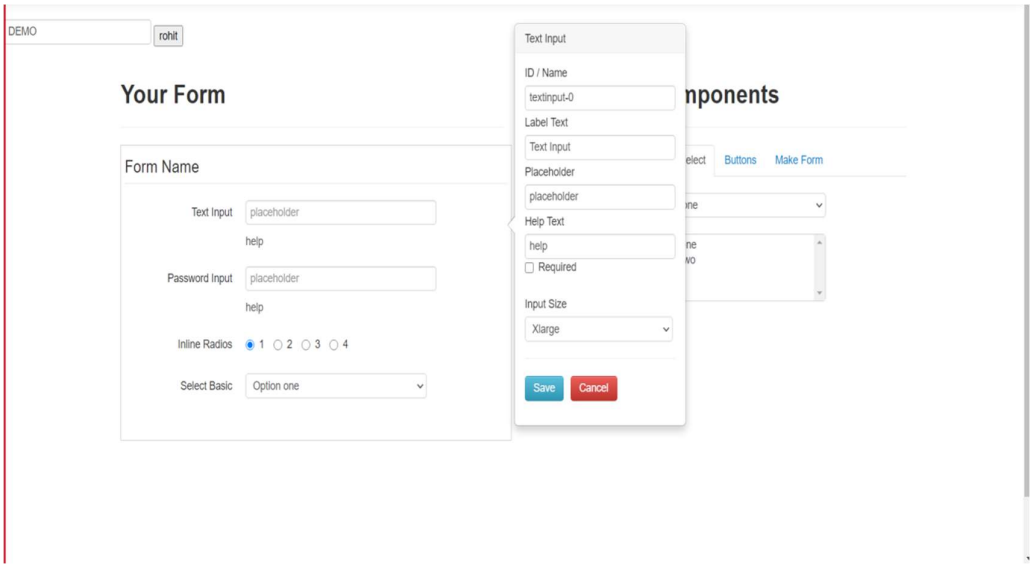


(Figure 4.1 organization dashboard)

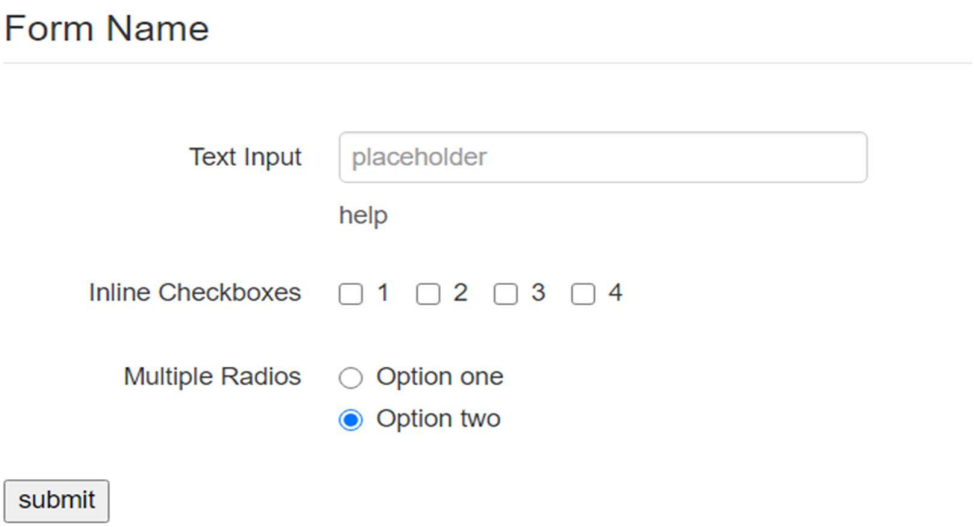
(Figure 4.2 Government employee dashboard)



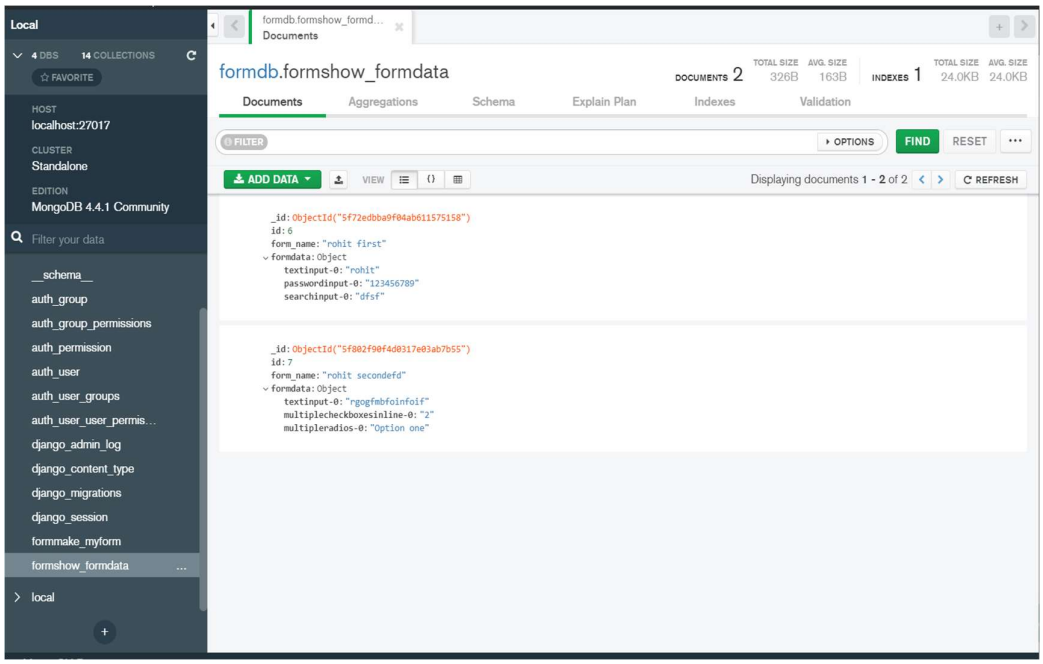
(Figure 4.3 Form creator snapshot 1)



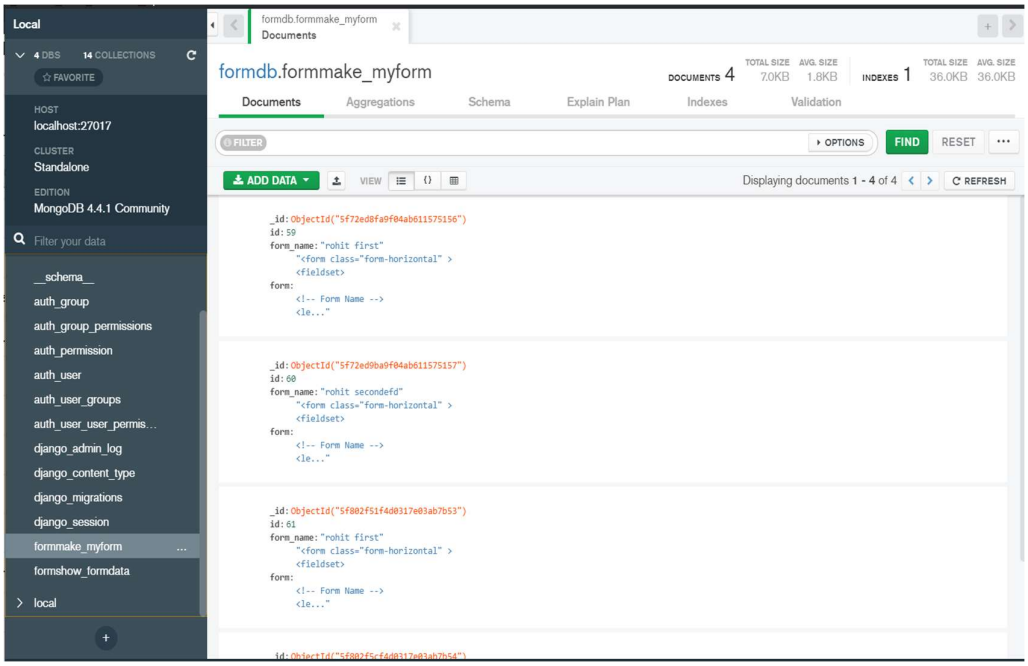
(Figure 4.4 Form creator snapshot 2)



(Figure 4.5 form after creation)



(Figure 4.6 database for different forms inputs)



(Figure 4.7 database for different forms inputs)

CHAPTER 5
RESULT & ANALYSIS

Our system, will be able to show the available projects detail on dashboard to all applicants. The system is responsible for storing and maintaining information of construction organization. Applicant can apply for available projects and government employee analyze the application and allocate the projects to organization. This process now become more efficient and time saving. We analyze that earlier this process was very time consuming and require more human efforts.

CONCLUSION

We have review past research that has been done on 'Paperless office', from that we are able to get required information about workflow, design and implementation of our project. Paperless office idea comes into reality by implementing web application that satisfy our objective and functional requirement. The application is not only Environment friendly but also time saving, cost reducing & Easy to use for both construction organization and Gujarat water supply and sewerage board.

TIMELINE OF PROJECT PLAN

No.	Description	Start Date (dd/mm/yyyy)	End Date (dd/mm/yyyy)	Duration (days)
1	Learn Technology	23/11/20	12/12/20	20
2	Implement Authentication Module	13/12/20	20/12/20	7
3	Form Creation	22/12/20	05/01/21	15
4	Database Design	07/01/21	12/01/21	6
5	Testing Module	13/01/21	15/01/21	3
6	Implement Front end	17/01/21	31/01/21	15
7	Integrate System Module	02/02/21	21/02/21	20
8	Testing of Web Application	24/02/21	15/03/21	20
9	Fix Founded Error and Bugs	16/03/21	24/03/21	9
10	Documentation	26/03/21	14/04/21	22

Table 6.1 Time line for next semester

REFERENCES

1) Başıbüyük, M. & Atilla E. December, 2015. Electronic Document Management System for Kirikkale University. *Unified Journal of Computer Science Research* 1(2) pp. 008-015.

2) Li, B. & Hu, J., 2017. Design and Implementation of Paperless Office System. In: *second International Conference on Manufacturing Science and Information Engineering , 2017*.

3) Aigbe, P.W.& Akpojaro, J., 2014. Analysis of Security Issues in Electronic Payment Systems. *International Journal of Computer Applications*, 108, 10.

4) Almin, S., 2014. Web Server Security and Survey on Web Application Security. *International Journal on Recent and Innovation Trends in Computing and Communication,* 2(1), pp. 114-119.

5) Khedkar, S. & Thube, S., 2017. Real time databases for applications, *International Research Journal of Engineering and Technology,* 4(6), pp. 2078- 2082.

6) Carr, M., 2005. An analysis of the feasibility of a paperless environment - *The case of the Mona School of Business, Management of Environmental Quality: An International Journal*, 16(4), pp. 286-290.

7) Orantes-Jiménez, S., Zavala-Galindo, A., & Vázquez-Álvarez, G., 2015. Paperless Office: A New Proposal for Organizations. Journal on Systemics, Cybernetics and Informatics, 13(3), 47-55.

8) Hattingh, M., 2001, The features and impact of the paperless office, with specific reference to the City of Johannesburg, *South African Journal of information Management.* 3(3/4).

9) Hasan, A., Meva, D., Roy, A. & Doshi, J., 2017. Perusal of Web Application Security Approach. In: *International Conference on Intelligent Communication and Computational Techniques (ICCT), Dec 22-23, 2017, Jaipur.*

10) Georgesku, M. ,Tugui, A. & Dumitriu, F., 2008. Challenges For The Quality Of Information In The Paperless Office*, Management of International Business and Economics Systems.*807-817.

11) Lutteroth, C. & Weber, G.,2011. Going paperless - on the evaluation of electronic form technologies. In 2012 23rd International Workshop on Database and Expert Systems Applications. IEEE Computer Society, 14–18.

12) Victor, H.A., Olawale, L.N. & Asafe, Y.N., 2014., Web-Based Paperless Campus: An Approach To Reduce the Cost and Complexity OF Education. In 5th International Conference On "Software Solutions, E-Learning, Information & Communication Technology" (SEICT–2014) Bursa,101-107.

13) Okoro U. R., Awodele O., Kuyoro S. O. & Adekunle Y.A., 2013. Office of the Future: Digitizing Record Keeping. *International Journal of Computing Academic Research,*2(2),pp. 75-87.

14) Potu,M.,2004., Paperful to Paperless Office Forms Integration Framework.

15) Harvey, J., Pickard, M. and Nunhuck, M. (2008) "End of the paper trail: moving towards a paperless ward round," *Psychiatric Bulletin*, Cambridge University Press, 32(2), pp. 67–68.

16) Shah, S. & Tiwari, M. (2010). Networking of Paperless Offices in Technical Institutes of India. *S International Journal of Computer Science and Network Security,*10(3), pp. 177-181.

17) Aoyama, Y., Soga, N., Shinotsuka, K., Oike, N.& Fukumoto, M. (2018) Role of Paperless Procedures in Achieving Working Style Reform. *Hitachi Review,* 67(6), pp.758-759.

18) Desa, A.,2005., Document Security in Web Applications.

19) Chao, C.,2015., Implementing paperless System for Small and Medium sized Businesses (SMBs).

20) Smyrichinsky, P.T., Meng, P.E & Kramer, S.W., 2018., Practical Application Challenges for Construction Submittals in a Paperless Contract File. In: Creative Construction Conference 2018, CCC 2018, 30 June - 3 July 2018, Ljubljana, Slovenia.