MART MANAGEMENT SYSTEM

Requirement Analysis

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1. Introduction

1.1. Purpose of the system

Mart Management System (MMS) is a standalone system that helps the owners of mini mart to manage the data and information of their mini mart. It provides the solution for replacing the manual work done to manage the daily records of mini marts

1.2. Scope of the system

A full-featured management system is needed for mini marts to manage all the stored data and information systematically and efficiently. MMS application is developed for mini marts to manage inventory, staff, supplier and finance records.

1.3. Overview

A fully functional MMS application that featured with user friendly is provided at the end of the development process. With the developed application, users can manage the business of mini mart systematically.

2. Current System

Current system can be divided into two component on the bases on working. The initial component which is responsible for creating account, change password and authenticating an account with privilege access as on the bases on type of user. The final component which provide access on features on the bases of authentication type, now this component further more can be divided into two subcomponent. One subcomponent is responsible for searching, adding, deleting and finalizing customer data with slip and the other subcomponent for creating list or updating list for items present in store.

In other words:

User maybe a worker or admin and both have different privileges, when they are authenticated, they have less or full access. Worker can only insert or search customer data and admin can access all these stuff plus can change item list and other stuff.

As it has some problems and need some updates like admin access should be increase and need to be managed well which not present in current system, it will be updated or evaluated as per customer demand as customer required.

3. Software Requirement Specification

3.1. Functional Requirement

- Sign Up:
  The user will create account with authentication of admin key
- Sign In:
  Authentication start with two different login availability user and admin
- Manage all Customer Record:
  Show total price and real date time and searching option for customer record.
- Customer data inserted by code:
  We have to put only specific code number and quantity in order to insert item in database with add button
- Data Item list creation:
  List page contain list of the item with functions of add values, delete, update and search
- Delete Record (effective):
  Delete the current mistake of insertion and delete record of the particular customer
- Manageability:
  Differentiate/ Separate feature for User and Super User
- Availability:
  PDF creation

3.2. Non-Functional Requirement

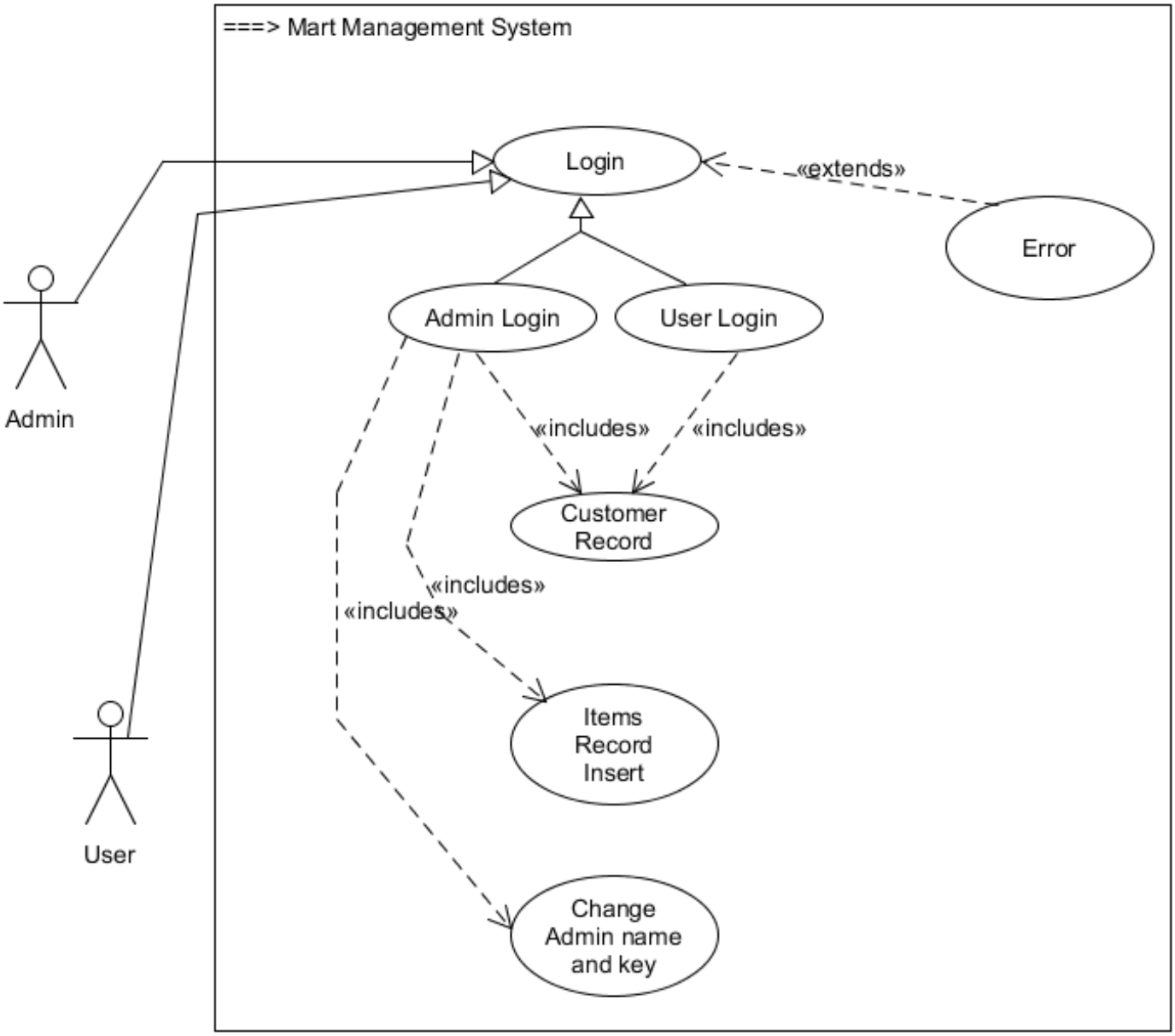
- Maintainability:
  Maximum efficiency, readability and safety.
- Privacy and Security
- Usability:
  Easy to Search, Easy Update feature (Special feature by own when default function was not working)
- User Friendly:
  Mostly background process and less features on screen
- Platform capability:
  Independent to machine architecture.
- Documentation:
  Short and easily to understandable.

3.3. System Models

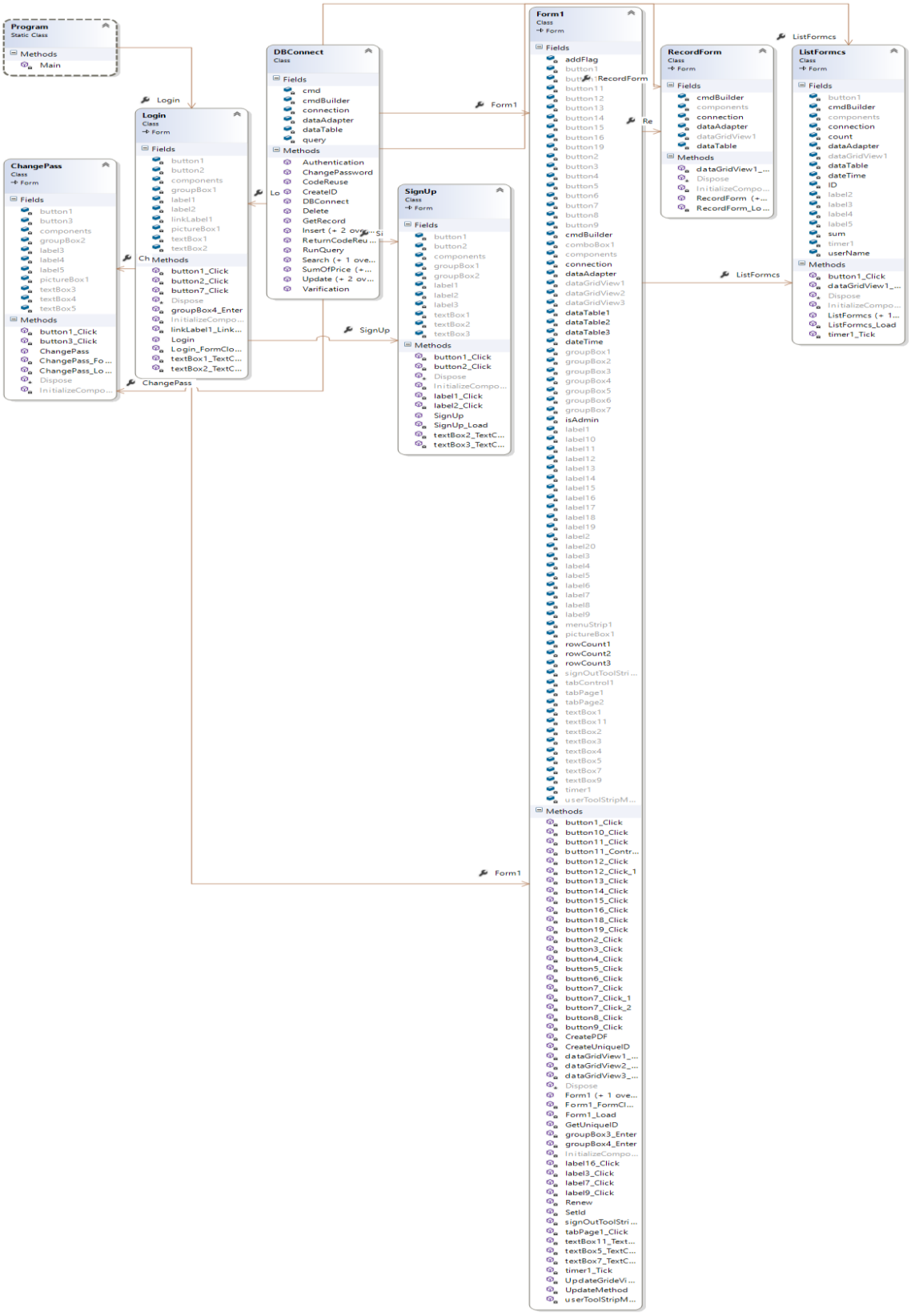
3.3.1. Scenarios

As in agile process software is updated iteratively whenever a new functionality is needed to include or need to change functionality. Evaluation is a part of software because it need to be evolve because often business requirement changes as the time passes. Software started to use when it is seemed to cover a basic or most required or necessary part of software functionality and evolved as the time passes. In business time change so quickly and here we need rapid application development so as hurry as possible they want solution is to be in use and they can take advantage of it.

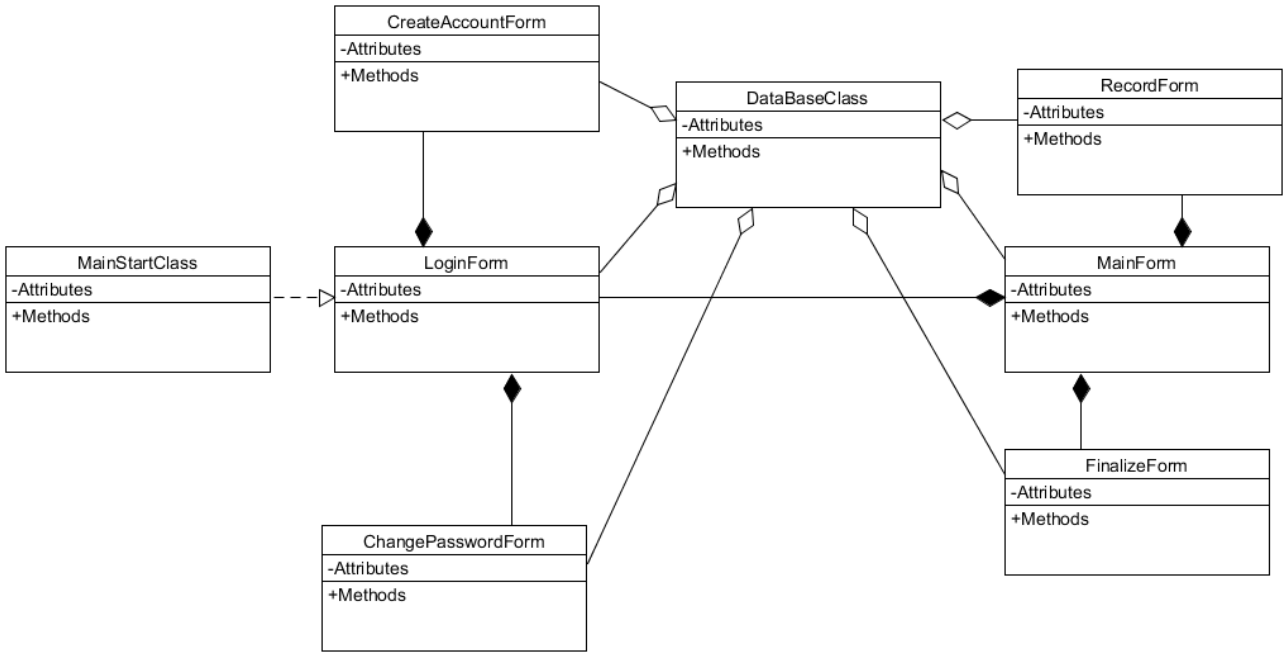
3.3.2. Use case Diagram:



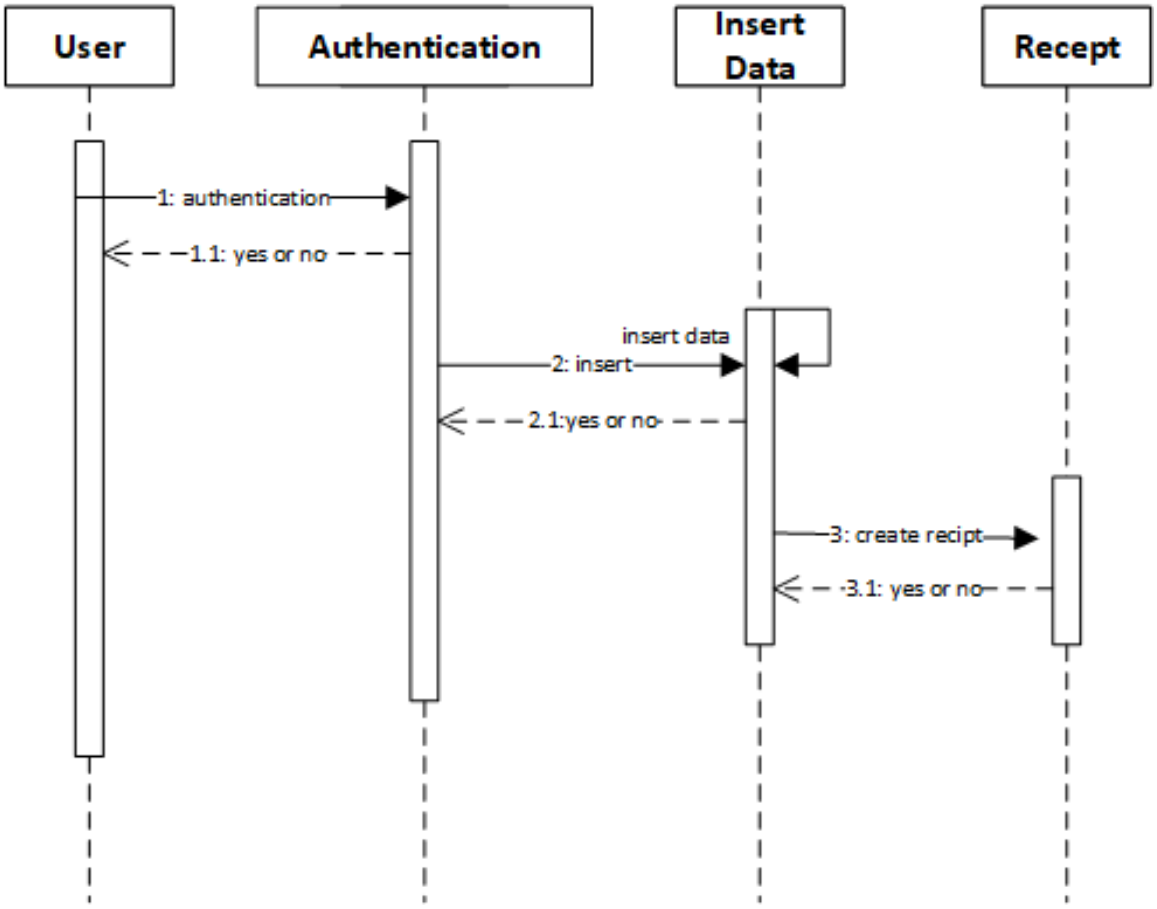
3.3.3. UML Class Diagram



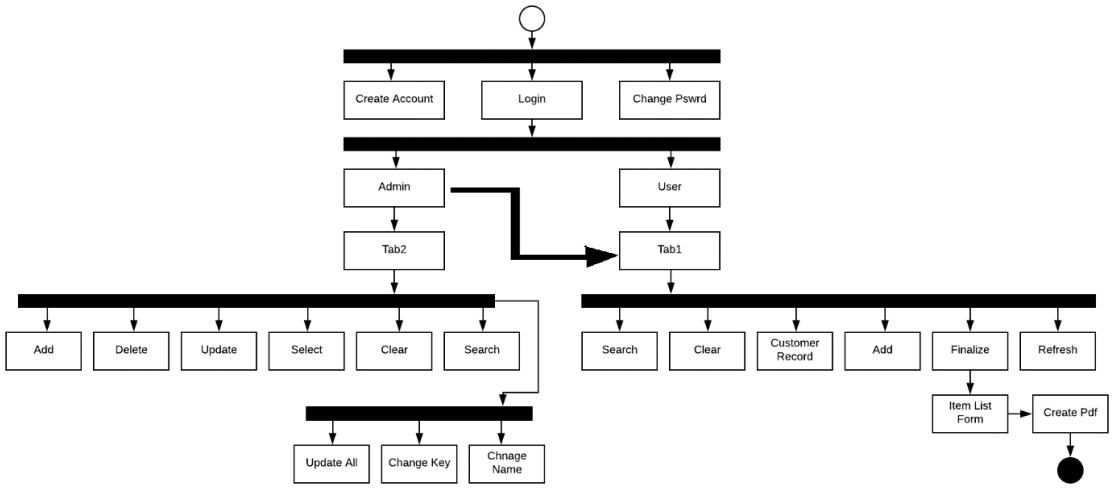
3.3.4. UML Class Relation Diagram:



3.3.5. Sequence Diagram



3.3.6. Activity Diagram



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5. Software Development Tools

Following are the tools which is frequently used during the development process.

5.1. Analysis Tools

Before you start writing a program, you have to understand what it's supposed to do. That usually means understanding something about the 'real world' and how it works. That something is often referred to as a 'process' or 'business rules.' In order to understand the process, programmers do something called 'analysis.' Analysis is defined as breaking something down into its inter-related components in order to understand it. The object of the analysis can be raw data, a business process, or learning how to program.

Use the following tools to collect or analyze data:

5.1.1. **Box and Whisker Plot**: A tool used to display and analyze multiple sets of variation data on a single graph.

5.1.2. **Check sheet**: A generic tool that can be adapted for a wide variety of purposes, the check sheet is a structured, prepared form for collecting and analyzing data.

5.1.3. **Control chart**: A graph used to study how a process changes over time. Comparing current data to historical control limits leads to conclusions about whether the process variation is consistent (in control) or is unpredictable (out of control, affected by special causes of variation).

5.1.4. **Design of experiments**: A method for carrying out carefully planned experiments on a process. Usually, design of experiments involves a series of experiments that start by looking broadly at a great many variables and then focus on the few critical ones.

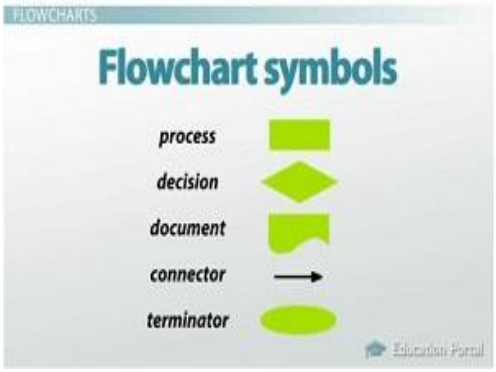
5.1.5. **Histogram**: The most commonly used graph for showing frequency distributions, or how often each different value in a set of data occurs.

5.1.6. **Scatter diagram**: A diagram that graphs pairs of numerical data, one variable on each axis, to look for a relationship.

5.1.7. **Stratification**: A technique that separates data gathered from a variety of sources so that patterns can be seen.

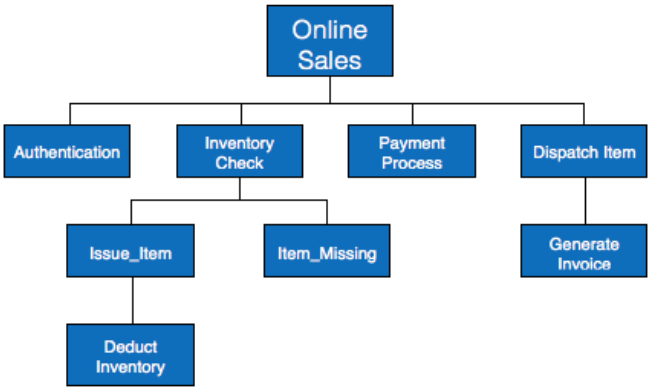
5.1.8. **Survey**: Data collected from targeted groups of people about their opinions, behavior or knowledge.

5.1.9. Flowcharts:



Flowcharts were originally developed so programmers could map out the steps their programs needed to take to accomplish the programmed task. It turns out that they are also useful for mapping out real-world processes. There are a relatively large number of flowchart symbols

5.1.10. HIPO Diagram:



HIPO (Hierarchical Input Process Output) diagram is a combination of two organized method to analyze the system and provide the means of documentation. HIPO model was developed by IBM in year 1970.

HIPO diagram represents the hierarchy of modules in the software system. Analyst uses HIPO diagram in order to obtain high-level view of system functions. It decomposes functions into sub-functions in a hierarchical manner. It depicts the functions performed by system.

HIPO diagrams are good for documentation purpose. Their graphical representation makes it easier for designers and managers to get the pictorial idea of the system structure.

5.2. Design Tools

Definition:

Software analysis and design includes all activities, which help the transformation of requirement specification into implementation. Requirement specifications specify all functional and non-functional expectations from the software. These requirement specifications come in the shape of human readable and understandable documents, to which a computer has nothing to do.

Software analysis and design is the intermediate stage, which helps human-readable requirements to be transformed into actual code.

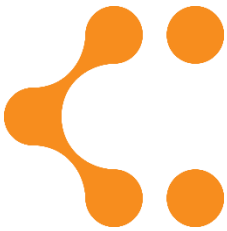
5.2.1. Microsoft Visio:

Microsoft Visio is one of the top diagramming tools right now, suitable for everything from flow charts to floor plans. It can be used for creating diagrams both simple and complex. It has a wide range of inbuilt shapes, stencils and objects. You can make your own shapes as well and import them.

5.2.2. Visual Paradigm:

Visual Paradigm is a software tool designed for software development teams to model business information system and manage development processes. Visual Paradigm supports key industry modeling languages and standards such as Unified Modeling Language (UML), SysML, SoaML, BPMN, XMI, etc. It offers complete tool-set software companies need for requirements capturing, process analysis, system design, database design, and etc.

5.2.3. Lucidchart:



Lucidchart is the best marketing documentation tool to build different types of flowcharts for your marketing processes. Starting with visualizing simple sketches of your future content campaign and ending with comprehensive user journey flow, Lucidchart will help you organize all stages and ideas in one beautiful diagram.

5.3. Project Management Tools

Definition:

Project management tools are aids to assist an individual or team to effectively organize work and manage projects and tasks. The term usually refers to project management software you can purchase online or even use for free.

Despite its name, project management tools are not just for project managers. Project management tools are made to be completely customizable so they can fit the needs of teams of different sizes and with different goals.

5.3.1. Microsoft PPM:

Desktop application available as a simple Office 365 subscription that allows you to work from anywhere. Plan resources, manage team schedules, calculate what-ifs scenarios, and easily collaborate with all the project stakeholders.

5.3.2. Zoho Sprints:

Zoho Sprints is a free online agile project management tool built for Scrum teams to plan, track and iterate their work in Sprints. Be ready to embrace the changing customer requirements and ship the right products on time. Add user stories to your backlog, estimate and prioritize work items, stay on track with personalized Scrum boards

and swimlanes, get actionable insights from velocity, burn up and burn down charts, cumulative flow diagrams

5.3.3. Teamwork Projects:

Teamwork Projects combines high-performance features that build smarter workflows and close communication gaps so you can focus on getting things done. Features include task management, time tracking, milestones, Gantt charts, instant high-level reports and more. Teamwork for Enterprise provides a best in class collaboration platform to enable peak efficiency and high performing teams with additional support and security layers

5.3.4. Freedcamp:

Freedcamp is free for unlimited users and projects. The company's vision is to build a truly freemium product available to all free of charge for most of its functionality. Free accounts are currently limited to 10MB file size limit with unlimited storage on all plans. Freedcamp provides paid features free to non-profits, teachers and students. You can add components you need such as Tasks, Milestones, Discussions, Time Tracking and more, when you create a project in Freedcamp.

5.3.5. Agile CRM:

"Agile CRM's software manages projects effectively with streamlined drag-and-drop project management tool, it¿s easy to manage tasks between your sales and marketing teams. The project management software encompasses different options to check and track the status of your projects. "

5.4. Database Management Tools

Definition:

Stands for "Database Management System." In short, a DBMS is a database program. Technically speaking, it is a software system that uses a standard method of cataloging, retrieving, and running queries on data. The DBMS manages incoming data, organizes it, and provides ways for the data to be modified or extracted by users or other programs.

5.4.1. Microsoft Access:

Microsoft Access is a pseudo-relational database engine from Microsoft. It is part of the Microsoft Office suite of applications that also includes Word, Outlook and Excel, among others. Access is also available for purchase as a stand-alone product. Access uses the Jet Database Engine for data storage.

Access is used for both small and large database deployments. This is partly due to its easy-to-use graphical interface, as well as its interoperability with other applications and platforms such as Microsoft's own SQL Server database engine and Visual Basic for Applications (VBA).

5.4.2. SQL Server:

A relational database management system developed by Microsoft as a database server, designed to store and retrieve different requests. Choose your preferred language and platform and build modern applications creatively. Take advantage of breakthrough performance and availability while turning raw data into meaningful reports that can be delivered to any device or platform.

5.4.3. MySQL:

MySQL Enterprise Edition includes the most comprehensive set of advanced features, management tools and technical support to achieve the highest levels of MySQL scalability, security, reliability, and uptime. It reduces the risk, cost, and complexity in developing, deploying, and managing business-critical MySQL applications.

5.4.4. Oracle Database:

Leading enterprise-grade relational database that offers secure data management and transaction processing.

5.4.5. MongoDB:

By offering the best of traditional databases as well as the flexibility, scale and performance todays applications require, we let innovators deploy apps as big as they can possibly dream. From startups to enterprises, for the modern and the mission-critical, MongoDB is the database for giant ideas.

5.5. Documentation Tools

Definition:

Have you guessed what all this is about? This is what software documentation is typically associated with in the man's mind. Such an obnoxious view on documentation today is caused by people's ignorance of powerful software documentation tools that can really streamline document creation.
Technical writing is not an easy task. Knowing that software documentation is essential, everyone still avoids taking the responsibility of it. Indeed, automatic software documentation tools can take the hassle out of writing documentation and tackle a number of your challenges at work.

5.5.1. Software Documentation Tools for Gathering and Managing Requirements

5.5.1.1. Jira:

Jira is known as popular issue tracking software, but many teams have reported that it is also an awesome tool to manage your user stories and requirements in the hassle-free format.

5.5.1.2. Trello:

Trello is a task management application based on the Kanban system that can help you organize your requirements in a simple-to-use format. It a visual collaboration tool that helps you manage current tasks with the help of interactive boards.

5.5.2. Software Documentation Tools for Writing Software Architecture Documentation

5.5.2.1. Read The Docs:

Read the Docs is a free platform for software documentation hosting with freely available source code. It facilitates writing technical documentation by automating building, versioning, and hosting for you.

5.5.2.2. GenMyModel:

GenMyModel can be utilized to create Unified Language Modeling (UML) diagrams and flowcharts for their further use in software architecture design and team collaboration environments.

5.5.3. Software Documentation Tools to Document Databases

5.5.3.1. Dataedo:

Dataedo is an excellent tool to document your SQL Server, Oracle, and MySQL databases. It can describe each table and column (data dictionary), procedure and function, build ER diagrams from existing schema and generate HTML, PDF or Excel documents.

5.5.3.2. SchemaSpy:

SchemaSpy is an open source Java-based tool (requires Java 8 or higher) that analyzes the metadata of a schema in a database and generates HTML and PNG-based entity relationship diagrams.

5.5.4. Software Documentation Tools to Create End-User Documentation

5.5.4.1. Oracle UPK:

Oracle UPK is a unique platform to generate, deploy, control and maintain software training content to ensure better end user adoption. Oracle UPK delivers context-sensitive help directly within the application to walk the user through a business process reducing help desk calls.

5.5.4.2. StepShort Manuals:

StepShort Manuals offers the best solution for large enterprises to generate user manuals and online guides just in a few clicks. With StepShot, you may bid farewell to the traditional way of documenting things and get the work done in a timely manner without switching between multiple applications.

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