System Planning: Project Charter

Initech's Information Technology Asset Management System

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Table of Contents

Company History

Initech is in the logistics market dealing with computers. They are responsible for tracking all the computers that they hold in their stock, supplying them to the customers, and providing them with services when needed. Overall 7 functions are going on simultaneously which are responsible for the growth of the company.

Serialized Asset tracking: This team is responsible for keeping the track of all the computers that have been stored in their stockroom or the ones which they have supplied to the customers. They make sure that the information data is consistent and that there is no duplication of the record. (Owner: Asset Manager and Director of IT Service Management)

Stockroom Management: This team is responsible for holding the data which consists of several computers of different brands, whether they are in the stock and at which stockroom location they are stored. (Owner: Asset Manager and Facilities Management Director)

Asset Entry: The stockroom technician who works in this team is responsible for tagging the new computer with unique IDs and adding the data to the database and removing the old models from the database.

User Request Process: It is a user interface through which the customers can submit an order for a computer.

Fulfillment Process: The service team working here is responsible for updating the data in the database after every transaction that took place.

Support Process: The support services team is responsible for providing services to the customers. (E.g.: Install the software, replace the hard drive, add more RAM, computer refresh)

Retire Process: The technician team is responsible for the extraction of raw materials from the old, disposed computers for recycling and also making sure that no personal data is leaked during this process.

Problem Statement

After the implementation of the Specify and Acquire stages an audit was conducted on the remaining stages (Deploy, Service, and Retire) and several problems were found.

The problems were:

- Data inconsistency
- Lack of reporting features
- Inability to integrate with external sources
- Duplicate Data (model number, names, and manufacturers)
- Inability to track the asset stage. (Deploy, Service, and Retire stage)

Technology Solution Statement

All the problems which were noticed revolve around the inability to store the data in a systematic matter and the lack of updates. The use of relational database management might help the company in overcoming these challenges.

Project Benefits

The relational database is built to store and maintain a large amount of data and is nowadays in use by almost all corporate institutions. It brings in a lot of benefits as it is very reliable and requires very minimum knowledge to establish and maintain.

Some of the key features of using a relational database are:

- A relational database can hold an enormous amount of data at any given time. In a relational database, the information is stored in tables that are related to each other. As the tables are related to each other, it makes the data retrieval process easier, as with the use of a few SQL queries one can retrieve the complete information of an asset that is stored in the database. As the data keeps on adding to the database and becomes more complex, the need for data normalization becomes a necessity. Relational databases support the use of data normalization and ensure that integrity is maintained when using data from the database.
- The relational databases are built in a very strict and well-organized manner, to avoid duplication of data. They have very high accuracy and a very high standard which makes them an ideal choice for storing data. RDBMS databases are also widely used for data integrity as they provide consistency across all tables. The data integrity ensures the features like correctness and user-friendliness.
- The company employees who have the access to the database can easily log in to the database server and insert, update, and delete data accordingly. The relational database also provides an option of access level so that the employees can only access the data for which he/she is authorized. This makes sure that there is no data is being inserted, modified, or deleted by an unauthorized person and keeps the data safe.

Stakeholders

The three kinds of stakeholders which may support our idea are:

- **Computer Manufacturing Companies:**

  These companies would want to know the kind of devices and what specifications of the devices are popular within the market and would also want to know their product popularity within the community. This would help them in coming up with ideas that are trending currently in the community. Economic and technological factors are the ones which will interest them the most by investing in our project, as they would be able to figure out what specification of a laptop to sell and at what price so that to earn the greatest profit.

- **Company Owners And Investors:**

  These types of stakeholders will gain direct profit by investing in our project as they hold equity in the business. An efficient and fast-paced workflow would generate a lot of income which would please them. The growth of the company will also bring the owners and investors into the spotlight, and they will become popular. Economic and social factors will play a role in their decision-making.

- **Media:**

  Every business needs a media publication relationship to spread the word about its brand. Businesses often need to interact with the press to make an important announcement or advertise their product. The impact of media will help the company in expanding its border and would also attract other different computer manufacturing companies to approach us for selling their product. In the long-term, the media will also be benefited by supporting our project and advertising our services. Economic and social factors will play a role in their decision-making.

Project Plan

Task Name	% Complete	Duration	Start	Finish	Predecessors	Resource Names
Initech Project Plan			**MON 1/08/2022**			
Initiating						
Finalize project team		5 days	MON 1/08/2022	FRI 5/06/2022		Project Manager
develop project charter		5 days	MON 8/08/2022	FRI 12/08/2022	4	Project Manager
Systems Planning						
Develop scope statement		8 days	MON 15/08/2022	WED 24/08/2022	5	Project Manager
develop and refine other plans		20 days	THURS 25/08/2022	THURS 22/09/2022	7	Project Manager
Systems Analysis						
Concept						
Evaluate current systems		5 days	FRI 23/09/2022	THURS 29/09/2022	8	Network Engineer,System Design Engineer
Define requirements		15 days	FRI 30/09/2022	FRI 21/10/2022	11	System Design Engineer
Define user requirements		12 days	MON 24/10/2022	TUES 8/11/2022	12	System Design Engineer
Define content requirements		16 days	WED 9/11/2022	FRI 2/12/2022	13	Senior Developer
Define system requirements		18 days	MON 5/12/2022	THURS 29/12/2022	14	System Design Engineer
Define server owner requirements		16 days	FRI 30/12/2022	TUES 24/01/2023	15	Network Engineer
Define specific functionality		21 days	WED 25/01/2023	THURS 23/02/2023	16	System Analyst
Define risks and risk management approach		13 days	FRI 24/02/2023	TUES 14/03/2023	17	Project Manager
Develop project plan		10 days	WED 15/03/2023	TUES 28/03/2023	18	Project Manager
Brief database development team		1 day	WED 29/03/2023	WED 29/03/2023	19	Project Manager
Systems Design						
database design						
Define registration for recreational programs		10 days	THURS 30/03/2023	WED 12/04/2023	20	Senior Developer
Design registration for classes and programs		10 days	THURS 13/04/2023	WED 26/04/2023	23	System Analyst
Design tracking system		7 days	THURS 27/04/2023	FRI 5/05/2023	24	System Design Engineer
Design incentive system		10 days	MON 8/05/2023	FRI 19/05/2023	25	System Design Engineer
Systems Implementation			**MON 22/05/2023**			
database development						
Develop registration for recreational programs		10 days	MON 22/05/2023	MON 5/06/2023	26	Senior Developer
Develop registration for classes and programs		10days	TUES 6/06/2023	TUES 20/06/2023	29	System Analyst
Develop tracking system		8 days	WED 21/06/2023	FRI 30/06/2023	30	Senior Developer
Develop incentive system		6 days	MON 3/07/2023	TUES 11/07/2023	31	System Analyst
Conduct verification testing		9 days	WED 12/07/2023	MON 24/07/2023	32	Testing Team
Conduct validation testing		7 days	TUES 25/07/2023	WED 2/08/2023	33	Testing Team
Conduct pilot testing		4 days	THURS 3/08/2023	MON 7/08/2023	34	Testing Team
Roll Out						
Move site to production server		3 days	TUES 8/08/2023	THURS 10/08/2023	35	System Test Engineer
Determine roll out schedule		3 days	FRI 11/08/2023	TUES 15/08/2023	37	Project Manager
Communicate roll out plan to users		1 day	WED 16/08/2023	WED 16/08/2023	38	Project Manager
Conduct user training		5 days	THURS 17/08/2023	WED 23/08/2023	39	Software Test Engineer,System Test Engineer
Deploy system		1 day	THURS 24/08/2023	THURS 24/08/2023	40	System Test Engineer
Support						
Determine what support resources are needed		3 days	FRI 25/08/2023	TUES 29/08/2023	41	Support Team Manager
Make appropriate staffing changes		3 days	WED 30/08/2023	FRI 1/09/2023	43	Support Team Manager
Determine method that users will attain support		3 days	TUES 5/09/2023	THURS 7/09/2023	44	Support Team Manager
Determine support process		6 days	FRI 8/09/2023	FRI 15/09/2023	45	Support Team Manager
Launch support		1 day	MON 18/09/2023	MON 18/09/2023	46	Support Team Manager
Systems Support						
Hold formal customer review		1 day	TUES 19/09/2023	TUES 19/09/2023	47	Project Manager
Closing						
Prepare final report and presentation		5 days	WED 20/09/2023	THURS 26/09/2023	49	Project Manager
Deliver final report presentation		1 day	FRI 27/09/2023	FRI 27/09/2023	51	Project Manager

Technology Toolss

Access Conversion Tool:

We will an access conversion tool to convert data that were stored in multiple different old spreadsheets so that it can be stored in our database.

Database technology:

Appropriate database technology is to be chosen which would fulfill our requirements and could be maintained for a long period. Many criteria have to be taken into consideration while choosing a database.

The criteria are:

- Data sizes — MBs, GBs, TBs, PBs
- Point queries or bulk data queries — Redis, Key-Value Stores, Snowflake, Google Cloud SQL.
- Quick response time requirements — Elasticsearch, MemSQL
- A large number of concurrent users — Use of caching, Redis, DynamoDB
- Balanced read-write, mostly read, mostly write, transactions and analytical processing
- Document data (JSON), Geographical data (GIS), Time data, Multimedia data
- Rapid ingestion with large volumes, trickle feeds, scheduled jobs, Data Lakes

A database architecture must make sure to choose the right option in each of the given criteria to reduce the complexity of the database and also the cost of the operation.

Database Security Tools:

Database security tools perform vulnerability assessments, monitor database access and activity to detect intrusion, and attempt to prevent threats and block malicious or unauthorized behavior that may lead to data loss.

Unauthorized access to a database compromises a potential lack of data confidentiality, integrity, and availability. Since company databases frequently comprise valuable customer data and different sensitive information, protecting databases from malicious motives is of high priority.

Best Database Security Tools include Oracle Audit Vault and Database Firewall, Sophos Intercept X for Server, IBM Security Guardium, Imperva Data Security (formerly

SecureSphere for Data), Symantec Data Center Security, McAfee Data Center Security Suite, Trend Micro ServerProtect, DbProtect, FortiDB, and Cisco Secure Workload (Tetration).

Current Solutions

Commercial-off-the-shelf (COTS) products that could solve the business problem are:

Microsoft SQL Server:

Microsoft SQL Server is a relational database management system developed by Microsoft. As a database server, it is a software product with the primary function of storing and retrieving data as requested by other software applications—which may run either on the same computer or on another computer across a network (including the Internet).

MYSQL:

MySQL is a fast, easy-to-use RDBMS being used for many small and big businesses. It is released under an open-source license. It uses a standard form of the well-known SQL data language. It can also support up to 50 million rows or more in a table and the default size of 4GB can be increased up to 8 million TB. It is also customizable and can be modified according to our needs.

Oracle DB:

Oracle Database is a multi-model database management system produced and marketed by Oracle Corporation. It is a database commonly used for running online transaction processing (OLTP), data warehousing (DW), and mixed (OLTP & DW) database workloads.

Using commercial-off-the-self products might seem a good option for our company, but we must also keep note of some of the drawbacks.

- They can be more expensive over time.
- May not be supported after time.
- May have integration issues.
- Upgrades could cost extra in the future.

References

- https://en.wikipedia.org/wiki/Oracle_Database
- https://towardsdatascience.com/choosing-a-database-technology-d7f5a61d1e98
- https://webuilddatabases.com/solutions/technology/
- https://www.trustradius.com/database-security
- https://www.activecampaign.com/blog/types-of-stakeholders