CS 5363 Spring 2023 Project

Title - LUBBOCK SUPER MARKET

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Project Description:

Lubbock Supermarket (LS) is a family-owned and operated business that has been serving the Lubbock community for over 50 years. As a result of the COVID-19 pandemic, LS has experienced a decline in in-store sales. To mitigate these losses and reach a wider audience, LS has decided to move its business online. LS has hired a team of consultants to develop a custom online sales platform that will meet the specific needs of the business. The project is expected to take several months to complete and will allow LS to offer its customers a convenient and efficient way to shop online.

LS is committed to providing its customers with the best possible shopping experience, both in-store and online. The new online sales platform will allow LS to offer its customers a wider selection of products, competitive prices, and convenient delivery options. LS is confident that the new platform will help the business to continue to serve the Lubbock community for many years to come.

The project will take our team through various situations that may happen on a real project. The project's objective is to design and develop a custom online sales system that will enable LS to increase its revenue and retain its loyal customer base.

Part – 1:

1) Measurable Organizational Value (MOV):

The first phase of the project life cycle is conceptualization, where the project's purpose or goal is defined as the measurable organizational value (MOV). For a project to provide real value, it must align with and support the organization's vision, mission, and strategy.

a) Identify the desired area of impact*:*

- Customer:
  Lubbock Supermarket strives to enhance the customer experience by introducing new products, services, or promotions to improve customer satisfaction.

- Strategic:
  This Project can increase its market share by expanding its reach, developing new products and services, or acquiring competitors.

- Financial:
  The supermarket can improve its financial performance by increasing revenue, reducing costs, and developing new revenue streams.

- Operational:
  The supermarket can improve its operational efficiency by adopting new technologies, training programs, or both. This can reduce errors, improve

productivity, and optimize processes, resulting in lower costs and better customer service.

- Social:
  The supermarket can contribute positively to society by implementing initiatives that promote knowledge, safety, and a cleaner environment.

The most appropriate area of impact would be **financial**. The project is focused on reducing the operating costs and improving the efficiency of the supermarket. Therefore, the main goal is to increase revenue and reduce costs, which aligns with the financial area of impact.

b) Identify the desired value of the project:

- Better: Online sales will provide customers with an additional option to purchase products, increasing convenience and satisfaction.
- Faster: Online sales will increase the speed of transactions and reduce cycle time.
- Cheaper: Online sales will reduce costs by enabling the supermarket to operate more efficiently.
- Do more: Online sales will help the supermarket to increase market share and sales.

The desired value of the project for Lubbock Supermarket would be to "**do more**" by increasing sales through online sales. This would help the organization earn profit and retain their loyal customers who are currently hesitant to shop in-person due to the pandemic.

c) Develop an appropriate metric:

- Increase in online sales revenue: This metric would measure the total revenue generated through the online sales system after implementation.
- Number of online orders: This metric would measure the total number of orders placed online by customers after the implementation of the system.
- Customer satisfaction rating: This metric would measure the overall satisfaction of customers with the online sales system.
- Conversion rate: This metric would measure the percentage of website visitors who make a purchase on the website.
- Return on investment (ROI): This metric would measure the financial return on the investment made in the online sales system.

d) Set a time frame for achieving the MOV:

Increase online sales revenue by 20% within the next 6 months.

Time frame: 6 months from the launch of the online sales platform

e) Summarize the MOV in a clear, concise statement or table:

The measurable organizational value (MOV) of the Lubbock Supermarket project is to increase online sales revenue by 20% within the next 6 months. This will be achieved by

developing a custom online sales platform that will meet the specific needs of the business and provide customers with a convenient and efficient way to shop online. The project is aligned with the organization's goals of increasing revenue and reducing costs, and it has a clear and measurable objective. By setting a time frame for achieving the MOV, the project team can ensure that the project is completed on time and within budget.

Area of Impact	**Desired Value**	**Metric**	**Time Frame**
Customer	Enhanced customer experience	Customer satisfaction rating	Within 3 months of launch
Strategic	Increased market share	Market share growth rate	Within 6 months of launch
Financial	Increased revenue	Increase in online sales revenue by 20%	Within 6 months of launch
Operational	Improved operational efficiency	Reduction in order processing time	Within 3 months of launch
Social	Positive contribution to society	Community impact rating	Within 6 months of launch

1) A comparison of alternatives:

a) Total Cost of Ownership (TCO):

Maintain the status quo:

There are no direct or upfront costs associated with maintaining the current system. However, there may be some opportunity costs such as missed efficiency gains or lost revenue due to outdated technology. Ongoing support and maintenance costs are minimal since the current system is already in place.

Advantages:

No upfront costs,
Minimal ongoing support and maintenance costs and
Known system and processes.

Disadvantages:

May miss out on efficiency gains or lost revenue due to outdated technology.
System may not be able to meet the needs of the business in the future
Purchase a software package.

Purchase a software package:

The direct or upfront costs for purchasing a software package can vary widely depending on the vendor and features. For example, a basic inventory management software may cost around $1,000 while a more advanced enterprise resource planning (ERP) system can cost upwards of $100,000 or more. Indirect costs such as hardware upgrades, customization, data migration, training, and consulting fees can range from a few thousand dollars to hundreds of thousands of dollars. Ongoing support and maintenance costs can include license fees, upgrades, bug fixes, and technical support. These costs can be a percentage of the software license fee, typically around 20% per year.

Advantages:
- Quick and easy to implement.
- Proven technology
- Wide range of features and functionality

Disadvantages:
- High upfront costs
- May not be a perfect fit for the business
- Ongoing support and maintenance costs
- Build a custom system.

Build a custom system:

The direct or upfront costs for building a custom system can vary widely depending on the scope and complexity of the project. A basic custom system can cost around $50,000 while a more advanced system can cost upwards of $500,000 or more. Indirect costs such as hardware upgrades, data migration, training, and consulting fees can range from a few thousand dollars to hundreds of thousands of dollars. Ongoing support and maintenance costs can include server hosting, bug fixes, and technical support. These costs can be a percentage of the development cost, typically around 15% per year.

Advantages:
- Can be tailored to the specific needs of the business.
- Can be more efficient and effective than a software package.
- Can be more secure.

Disadvantages:
- High upfront costs
- Long implementation time
- May not be as reliable as a software package.
- Ongoing support and maintenance costs

Alternative	Direct/Upfront Costs	Indirect Costs	Maintenance Costs	TCO
Status Quo	N/A	N/A	N/A	N/A
New Software Package	$50,000	$10,000	$5,000 per year	$85,000
Custom System	$100,000	$20,000	$10,000 per year	$170,000

References:

1. "Total Cost of Ownership for Business Software" by TechSoup - https://www.techsoup.org/support/articles-and-how-tos/total-cost-of-ownership-for-business-software
2. "Total Cost of Ownership (TCO) Calculator" by Microsoft - https://www.microsoft.com/en-us/download/details.aspx?id=27825
3. "Calculating Total Cost of Ownership for Enterprise Software" by CIO - https://www.cio.com/article/2381390/calculating-total-cost-of-ownership-for-enterprise-software.html
4. "Calculating Total Cost of Ownership (TCO) for IT Projects" by ProjectManager.com - https://www.projectmanager.com/blog/calculating-total-cost-of-ownership-tco-for-it-projects

b) Total Benefits of Ownership (TBO):

Maintain Status Quo:

Maintaining the status quo may not offer any direct benefits, but it does offer some indirect and ongoing benefits. By not implementing a new system, a company may avoid the risks and costs associated with such a change. This includes the potential productivity losses that can occur during the implementation of a new system, as well as the costs of hardware upgrades, data migration, and customization. Additionally, the company can continue to use its current system without the need for retraining staff, which can save time and resources.

Advantages:

- No upfront costs
- No risk of implementation failure
- Familiarity with current system.

Disadvantages:

- May not meet current or future needs.
- May not be efficient or effective.
- May be a security risk.

Purchase Software:

Purchasing a software package can offer direct benefits such as increased efficiency and productivity due to task automation, improved data accuracy, and the ability to perform more complex tasks. The software can also offer indirect benefits such as increased job satisfaction and employee engagement by providing better tools and resources to accomplish tasks. Ongoing benefits may include increased agility and the ability to adapt to changing business needs, improved data security and compliance, and easier collaboration and communication among team members. Additionally, software vendors often provide regular updates and technical support to ensure the software remains up-to-date and meets the changing needs of the business.

Advantages:
- Proven solution
- Available off-the-shelf
- Can be implemented quickly
- Can be customized to meet some needs

Disadvantages:
- Can be expensive
- May not meet all needs
- May not be as efficient or effective as a custom system
- May not be secure.

Build Custom System:

Building a custom system can offer direct benefits such as a more tailored solution that meets specific business needs, increased efficiency, and productivity due to task automation, improved data accuracy, and the ability to perform more complex tasks. The custom system can also offer indirect benefits such as increased job satisfaction and employee engagement by providing better tools and resources to accomplish tasks. Ongoing benefits may include increased agility and the ability to adapt to changing business needs, improved data security and compliance, and easier collaboration and communication among team members. Additionally, building a custom system can potentially result in cost savings over the long term as the system is designed to meet specific needs without excess functionality that may be present in off-the-shelf software solutions. However, building a custom system can also require significant upfront costs, including the need for specialized expertise, which can be a challenge for smaller organizations.

Advantages:
- Can be tailored to meet specific needs
- Can be as efficient and effective as possible
- Can be secure

Disadvantages:
- Can be expensive
- Can take a long time to implement
- May not be as reliable as a proven solution
- May not be as secure as a proven solution

Alternative	Direct Benefits	Indirect Benefits	Ongoing Benefits
Maintain Status Quo	No direct benefits	Avoidance of costs and risks associated with implementing a new system	Avoidance of disruption and productivity losses during implementation of a new system
Purchase Software	Increased efficiency and productivity, improved data accuracy, ability to perform more complex tasks	Increased job satisfaction and employee engagement due to better tools and resources	Increased agility, improved data security and compliance, easier collaboration, and communication among team members
Build Custom System	Tailored solution that meets specific business needs, increased efficiency and productivity, improved data accuracy, ability to perform more complex tasks	Increased job satisfaction and employee engagement due to better tools and resources	Increased agility, improved data security and compliance, easier collaboration and communication among team members, potential cost savings over the long term

3. Recommendation among alternatives:

Based on the comparison of Total Cost of Ownership (TCO) and Total Benefits of Ownership (TBO) between the LS software package and the custom-built system discussed earlier, it is recommended that the organization opt for the software package. This choice strikes a balance between upfront costs and ongoing benefits. The TCO for purchasing a software package is $85,000, which is significantly lower than the TCO for building a custom system, which amounts to $170,000. Moreover, the TBO for purchasing a software package includes several proven benefits such as quick implementation, access to a broad range of features and functionality, increased agility, and enhanced data security and compliance. While a custom-built system may offer some advantages like being tailored to specific business needs and providing better security, its high upfront costs and long implementation time make it a less favorable option. Maintaining the status quo also has some benefits such as no upfront costs and minimal ongoing support and maintenance expenses. However, it may miss out on efficiency gains or lost revenue due to outdated technology. Therefore, it is recommended that the organization consider **"purchasing a software package** "for its business needs.

PART – 2:

1) Resources required for the project's completion:

a) People

- **Project manager**: In charge of overall project delivery. He is responsible for planning, communication and managing the project within the budget.
- **Business analyst**: Responsible for analyzing business requirements, gathering user stories, and defining system features.
- **Software Developers**: Responsible for designing, coding, testing, and deploying the online shopping system.
- **UI/UX Designer**: Responsible for designing the user interface and user experience of the online shopping system.
- **Quality Assurance (QA) Analyst**: Responsible for testing and ensuring the quality of the online shopping system.
- **System Administrator**: Responsible for managing the hosting environment, server setup, and system maintenance.
- **Technical Writer**: Responsible for writing technical documentation and user manuals.
- **Customer service representative**: Responsible for dealing with customer support by helping them with the software issues and transactions.

b) Technology

- **Hardware**: Laptops, software licenses, programming frameworks, and tools are all included in the development environment.
- **Hosting Environment**: Web hosting, domain registration, SSL certificates, and database hosting are all included so that communication with the team happens frequently without any trouble. There should not be any internet issues while using or running the software.
- **Online Payment Gateway**: Used to safely process payments online. Transaction charges based on sales volume are estimated costs.
- **Customer Relationship Management (CRM):** Used to manage client information and orders by integrating the duties and responsibilities of project management with those of customer relationship management, as well as, in the case of software, its features.

c) Facilities

- **Office space** and **meeting room** with desks, chairs laptops etc. for developing the software and communicating with the team members by giving presentations.

d) Other

- **Team members' transportation** costs to and from Lubbock, Texas, for client meetings or on-site work.
- Costs associated with **training team members** that need to learn new applications or technologies.

2) An estimate for the cost of each resource:

Category	Resources	Cost
People	Project Manager	$500/day
	Business Analyst	$320/day
	Software Developers	2 developers, $450/day
	UI/UX Designer	$380/day
	QA Analyst	$310/day
	System Administrator	$300/day
	Technical Writer	$200/day
	Customer Support Representative	$25/hour
Technology	Development Environment	$10,000/year
	Hosting Environment	$2,000/year
	Online Payment Gateway	$20,000/year
	CRM System	$500/year
Facilities	Office space	$2,000/month
Other	Travel	$2000/year
	Training	$3,000/year

3) Since you will be paid for your work with LS, decide which contract makes the most sense for you and your client.

Fixed-price agreements: These agreements set a fixed fee for the project, regardless of the actual time and resources needed to complete it. If the project requirements and scope are clearly specified and there is little chance of adjustments or delays, this might be appropriate.

References:

- Tonnel | Builds | Dorahacks. (n.d.). Retrieved April 28, 2023, from https://dorahacks.io/buidl/4222
- Salary: Customer support (April 2023). Glassdoor. (n.d.). Retrieved April 27, 2023, from https://www.glassdoor.com/Salaries/customer-support-salary-SRCH_KO0,16.html

PART – 3:

1) Use Case Diagram:

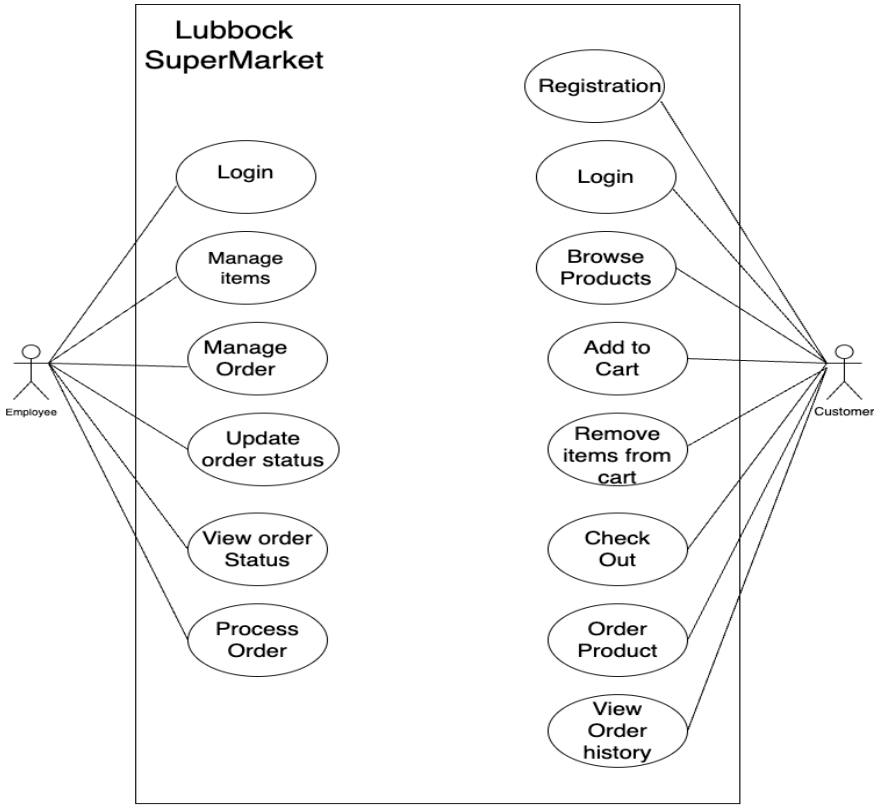
Unified Modeling Language (UML) use case diagrams are a particular kind of behavioral diagram that show how a system interacts with users or other external entities. The various use cases, actors, and their connections to one another inside a system are shown graphically.

Use case diagrams are helpful for assessing and creating complex systems because they make it easier to pinpoint a system's functional requirements and the players responsible for its operation. They are frequently used in the software development process to facilitate stakeholder engagement and to show how the system behaves from the user's perspective.

The reasons why an organization would want to use case diagrams include:

1. Identify functional requirements.
2. Facilitate communication and collaboration.
3. Support system design.
4. Plan testing.
5. Document system behavior.

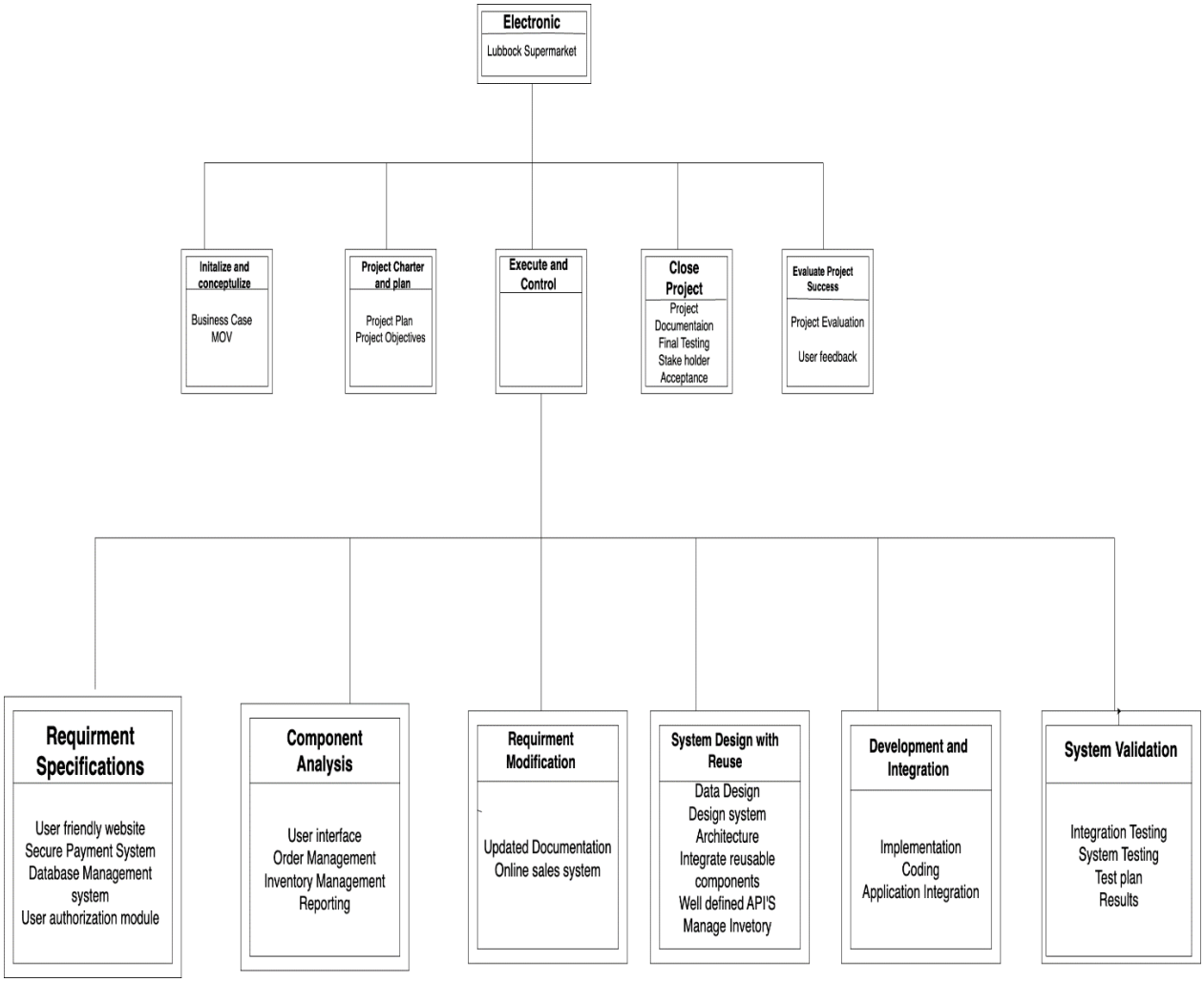
Use Case for Lubbock Supermarket:



2) Deliverable Structure Chart:

A delivery structure chart (DSC), a project management tool, visually groups the deliverables, sub-deliverables, and work packages needed to complete a project. The project's scope is broken down into more manageable, more granular parts in a hierarchical manner. The project's scope, deliverables, and activities are all clearly and orderly displayed in the deliverable structure chart. The relationships between the various project components may be better understood, possible hazards can be found, and resource allocation can be done well with its assistance.

The deliverable Structure Chart below is modified using a reuse-oriented:



3) WORK BREAK DOWN STRUCTURE:

The project's scope is hierarchically broken down into smaller, more manageable components using the project management tool known as a work breakdown structure (WBS). It divides the job into more manageable, smaller chunks of labor that can be better planned, scheduled, and tracked. Starting with the highest-level deliverables, the WBS often divides them into smaller, more granular components. The work package is described at each level of breakdown, along with any pertinent constraints, assumptions, or dependencies.

WORK BREAK DOWN STRUCTURE:

0.0 Lubbock Supermarket:

1.0 Initializing and conceptualizing the project.

1.1 Define Business requirements.

1.2 Evaluate online sales software options.

2.0 Development of business case

2.1 Gathering information about online system and understanding them.

2.2 Clear action plan should be developed.

2.3 Define Measurable Organization Value

2.4 Calculate both TCO and TBO

2.5 Milestone: Business Case has been completed.

3.0 Developing Project Plan and Charter

3.1 Analyzing business case with stakeholders or client.

3.2 Suggesting Recommendation to client.

3.3 Milestone: Project charter and plan completed.

4.0 Requirement Specification

4.1 Gather all the document functional requirements.

4.2 Identify reusable components.

4.3 Create a user-friendly website for online shopping.

4.4 Secure payment system

4.5 Milestone: Requirement specification are fulfilled.

5.0 Component Analysis

5.1 Evaluate reusable complete integration with functional requirements.

5.2 Determine what reusable parts need to be modified.

5.3 Milestone: Component Analysis Completed

6.0 Requirement Modification

6.1 Modify functional requirements to fit with reusable components.

6.2 Update documentation to reflect changes.

6.3 Modify online sales system according to client requirement.

6.4 Milestone: Requirement modification is done according to project Requirement

7.0 System Design with Reuse

7.1 Design a system architecture with a function component reuse

7.2 select and integrate reusable components into the design.

8.0 Development and Integration

8.1 Develop code for reusable components.

8.2 Integrate components into system.

8.3 Gather all involves and give to client.

8.3.1 Build resources require software and hardware.

8.3.2 Bring hardware to Lubbock Supermarket

8.3.3 Install software on every PC.

8.4 Train using software.

8.5 Milestone: Implementation and integration completed.

9.0 System Validation

9.1 Perform integration and system testing.

9.2 conduct quality assurance

9.3 Verify system meets functional requirements and quality standards.

9.4 Milestone: System Validation Completed

10.0 Closing the Project

10.1 Submit every invoice to client.

10.2 Submit final documentation.

10.3 Conduct final review and approval of deliverables.

11.0 Evaluate Project Success

11.1 Measure performance against project goals and metrics

11.2 Evaluate the custom application system for Lubbock Supermarket

12.0 Milestone: Successfully completed custom application System Lubbock Supermarket

References: Reuse-oriented model (Sommerville, 2011, p. 35) - researchgate. (n.d.). Retrieved April 28, 2023, from https://www.researchgate.net/figure/Reuse-oriented-model-Sommerville-2011-p-35_fig3_344402595

PART – 4:

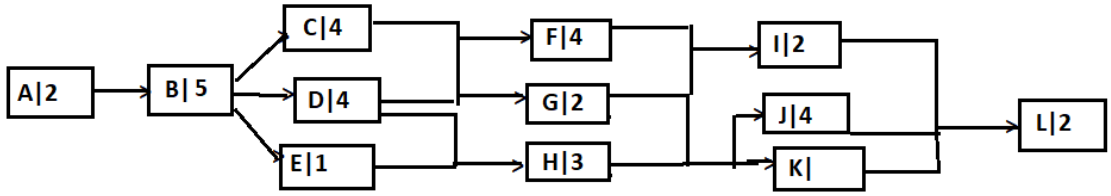
1) Table for the activities for AON:

Here considering the above given project description which includes some project deliverables and the time frame for the deliverables, we can derive a table for the Activity on the Node. Here we have mentioned estimated days in weeks. That is as follows:

Activity	Description for activity	Estimated Days (Weeks)	Predecessor
A	Evaluate current computer-based system of LS	2	None
B	Gather LS future requirements	5	A
C	Design the website layout	4	B
D	Setup server and payment gateway	4	B
E	Estimate web traffic based on the LS customers and requirements	1	B
F	Test designed LS web pages and links if provided any	4	C, D
G	Test the payment gateway	2	C, D
H	Move webpages to production environment	3	D, E
I	Advertise and promote the new LS mart website launch and online delivery	2	F, G, H
J	Train the LS employees with the new system	4	H
K	Support and maintenance of the LS website	2	H

L	Evaluate and report website and online sales of LS mart	2	I, J, K

2) AON Network Diagram for the above table:



3) Critical path for the project based on the above table and network diagram:

When considering the critical path, we take the longest path in the network. So, here there are possibilities for 5 paths.

Possible Path	Path	Total Time
Path 1	A + B + D + H + K + L	18
	2 + 5 + 4 + 3 + 2 + 2	
Path 2	A + B + E + H + I + L	15
	2 + 5 + 1 + 3 + 2 + 2	
Path 3	A + B + E + H + J + L	17
	2 + 5 + 1 + 3 + 4 + 2	
Path 4	A + B + E + H + K + L	15
	2 + 5 + 1 + 3 + 2 + 2	
Path 5	A + B + C + F + I + L	19
	2 + 5 + 4 + 4 + 2 + 2	

Path 6	A + B + C + G + I + L	17
	2 + 5 + 4 + 2 + 2 + 2	
Path 7	A + B + D + F + I + L	19
	2 + 5 + 4 + 4 + 2 + 2	
Path 8	A + B + D + G + I + L	17
	2 + 5 + 4 + 2 + 2 + 2	
Path 9	A + B + D + H + I + L	18
	2 + 5 + 4 + 3 + 2 + 2	
Path 10	A + B + D + H + J + L	20
	2 + 5 + 4 + 3 + 4 + 2	

Here, the critical path in the above table is shaded and it is path 10 with the total time of 20 weeks (about 4 and a half months).

References:

- Textbook page 153 table 6.1, figure 6.4 and table 6.2

PART – 5:

Project risk identification framework is used to identify and understand the risk sources and the impacts of the project. In this part, we are identifying a total of five risks to our project. Also, identifying one risk for each of the five phases of the project methodology depicted in the outer ring of the framework and then, using the framework for analyzing each risk by moving from the outer ring to the center I.e., MOV.

1)

1.1. Cost Risk (Conceptualize and Initialize):

a. Unknown-Known: The developers would have known at the time of estimation (Estimated cost) how much is needed, whether it is sufficient or not to develop this project. It may or may not be sufficient.

b. External: It will be an external risk because of the economic conditions, also the entry of new competitors or changes in the market share of existing competitors could affect the project's cost.

c. Source of risks: Organization, Technology.

d. Affects the **schedule** and the **budget** of the project.

e. Mov might change, Revised Mov- Budget and scope.

1.2. Scope Creep (Develop Project charter and plan):

a. unknown-known risks: The project's scope grows beyond what was originally planned, and it can be caused by changes in requirements, uncontrolled stakeholder requests, or poor project management. The risk is that the project team may not be aware of all the changes that have occurred.

b. Internal: The project team may be unable to effectively manage changes to the project scope, which can lead to delays, cost overruns, and a final product that does not meet the original objectives.

c. Process and **people** come under this because of not having a clear schedule for the hired people on the development of their application.

d. The **scope** gets affected, in this case of LS, the team should have a process in place to manage changes, requests, and modifications to the scope. Any changes should be evaluated against the project's goals, feasibility, and impact on resources, budget, and schedule. A clear and well-defined scope helps to prevent scope creep and ensure project success.

e. MOV would change. It may be decreased because of the people who do not have knowledge.

1.3. Technical risks (Execute and control):

a. Unknown-Known risks: Alice and bob have insufficient knowledge of the people who they hired. Also, they don't know which technology they are using and how it will be helpful for them to growth, but they assume they can work for the growth.

b. Internal: It will be an internal risk, only affecting the outcome to Alice, bob(owners) without affecting the external team (maybe customers).

c. source of risks-people, Organization.

d. quality and Schedule: If the people who were hired do not have sufficient knowledge, they will make several mistakes while developing the application and it may not work well once it's completed.

e. It will change the MOV of the project because the application developed does not bring any profit.

1.4. Organization Risk (Close project):

a. Unknown-Known risk: It's possible that Alice and Bob did not completely anticipate the difficulties associated with this transformation, including adjustments to procedures, systems, and consumer behavior. In addition, unanticipated difficulties like technological difficulties, resource shortages, or unexpected costs could appear during the project. The project's success and the achievement of the intended return on investment depend on the ability to identify risk.

b. External: The external organizational risk for LS is competition from other supermarkets that have already developed their online sales presence. Due to these competitors possibly getting an early start on developing and enhancing their online sales systems, this could put LS at a disadvantage.

c. Legal: Risk is something that makes an event's result unpredictable and unfavorable. A commercial organization that deals with legal issues is subject to legal hazards. This involves the fallout from breaking laws, rules, or regulations.

d. Scheduling: When establishing the online sales solution, there is a chance that there will be delays or deadlines that are missed. Any delays or missed deadlines could have an influence on the project's financial benefits and make Alice and Bob unwilling to move forward with it because they are only willing to engage in it if it offers a reasonable return on investment.

e. Mov may change, Revised Mov-Development organizational changes.

1.5. Performance risks (Evaluate project success):

a. Unknown-Known risks: The project's success measures are not well understood by the owners, but they assume that the recruited staff can work on it and may be involved in how well the online sales software system performs.

b. External: Market conditions, alterations to laws or regulations, and unforeseeable occurrences like pandemics or natural disasters are just a few examples of risks that LS and its staff cannot manage. In this instance, the COVID-19 pandemic has had a substantial effect on LS's business, causing a drop in earnings because of consumers' unwillingness to make in-person purchases.

C. Source of risks: People and environment.

d. Affects the **Budget**

e.MOV might change.

2) Owner and Strategy:

Risk	Owner	Response Strategy
Cost risk	Consultant or developer	The team should begin by performing a cost-benefit analysis to estimate the overall cost of putting in place the online sales system and the anticipated return on investment. They should also create a thorough budget that accounts for all project-related expenses.
Scope creep	Alice and bob (owners)	By avoiding it as much as you can by describing and documenting the project scope in detail from the start. Defining the project's goals, objectives, deliverables, and any limitations or presumptions that might have an impact on the project's scope are all included.
Technical risks	Alice and bob (owners)	Before choosing an online sales software, thoroughly analyzing the current system to find any potential compatibility concerns, and making sure the online sales system is secure by putting in place the necessary security measures, like encryption and frequent system updates.
Organizational risks	Alice and bob (owners)	The project may be kept on schedule and problems can be resolved right away by clearly defining roles and responsibilities within the project team and developing clear procedures for decision-making, issue resolution, and change control. Effective team communication is necessary to prevent misunderstandings.

Performance risks	Alice and bob (owners)	By precisely specifying the performance requirements for the online sales system, doing performance testing, keeping an eye on system performance, and developing risk-reduction strategies.

References:

- Textbook page-197
- https://www.tutorialspoint.com/management_concepts/project_risk_management.htm