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Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

SCHOOL OF INFORMATION TECHNOLOGY AND ENGINEERING

FALL SEMESTER 2021-22

SWE2006- SOFTWARE PROJECT MANAGEMENT

Jth Component project

ONLINE SHOPPING APPLICATION

**Course Faculty–Prof S . Sureka
SLOT-A2**

BY

• Register Number	20MIS0418	20MIS0399	20MIS0263	20MIS0415	20MIS0401
• Name	C.DHANUSH	KAVIYA K	MAHALAKSMI	THULASI MADHAN R	THILAKRAJ C
• Contribution Review-1 & Review-2	Work breakdown structure ,diagram	Float and critical point, activity span, AOA diagram	FUNCTIONAL REQUIREMENT AND SPECIFICATION FOR REQUIREMENT	AON diagram, Forward pass, Backward pass	CASE STUDY ,STACKHOLDERS, USER STORIES

INTRODUCTION

1.1 CASE STUDY

In recent years there has been a significant increase in shopping online especially among young and adults. Online shopping can take place in many forms, namely: auction, sprees and direct shopping.

This phenomenon has sparked off a new shopping trend in our society today and it will become more pervasive in the coming years as it has created more shopping avenue for customers today, not forgetting it provides a more convenient way of shopping compared to the hassle of manual shopping.

Online shopping has provided a whole new perspective to consumers which are more prevalent among the younger generation. Online shopping is growing tremendously. As internet becomes the primary means of advertising and selling products or services worldwide. Many businesses are creating websites in addition to their retail stores, and many start their business with online store alone. Online store is the number one remote shopping method that consumer use nowadays, through phones, orders mailing and so on.

Although there are advantages on online shopping that attracts consumers, there is room for further growth of online shopping. There are many factors that contribute to consumer's satisfaction when shopping online. Most importantly, customers need to trust online business owners to shop on their websites.

Thus primarily, online vendors need to build customer's trust. There is consumers mistrust about online vendors and risk perception about online shopping, hence, security measures must be enforced to protect customers against theft or disclosure of their privacy. In addition, other technology factors, such as ease of finding products and delivery speeds are important to satisfying customers. The website should examine advantages and customers concern relating to online shopping and provide possible solution to these concerns in order to reduce negative perception and to facilitate shopping for higher customer's satisfaction.

Online payment has become crucial to our lives. Financial institutions have provided several platforms for online payments for ease of transactions. With advanced technology, industries, firms, companies, organizations, businesses and individuals can now have their websites to create awareness to the public and also get information easily and faster with the use of internet.

The proposed case study which is TRENDS shopping complex deals in computers, books, wears, electronics, and provisions and so on. It will be a great shopping complex in town with the aid of online shopping system. Due to proliferation of information technology in the society, it is imperative for the mall to widen its horizon and meet its customer expectation. With this, it is therefore important to design a website that can support online sales of goods and services.

1.2 STATEMENT OF THE PROBLEM

The current method of transaction used by TRENDS shopping complex is stressful and cumbersome to operate and manage. The following are the problems encountered with the existing system.

- ü Insufficient awareness of goods and services.
- ü Lack of easy access to information and goods.
- ü Difficulty in transaction processes.
- ü Customers have to be physically present at the shop before choosing any item for purchase.
- ü Lack of adequate storage facilities to track goods and customer's bio-data.

1.3 AIM AND OBJECTIVES OF THE STUDY

The aim of the study is to develop an online store for TRENDS shopping complex, Anyigba. It focuses on the online shopping system using the World Wide Web and the internet. After the completion of this study, the TRENDS shopping complex will be able to transact online business such as buying of goods and services with less stress when compared to how it was done previously.

The objectives of the study are:

1. To provide online advertising of goods and services.
2. To network sellers and buyers.
3. To reach the specialized market.
4. To save cost for both sellers and customers.

1.4 SIGNIFICANCE OF THE STUDY

The importance of an online shopping is to help business owners and customers by providing services on-demand anywhere in the world provided there is an internet service. In view of this, the following are the benefits of online store to TRENDS shopping complex and its customers:

- ü It brings the shop closer to the customers: This means that customers can be at the comfort of their home to order, pay and receive their goods promptly.
- ü It allows the customers to view the quality of the item they want before making any transaction.
- ü It enforces the provision of cashless economy which helps to reduce cash in circulation.
- ü It helps the company to keep accurate record of both the inflow and outflow of items.
- ü It gives the company the opportunity of focusing on other resources such as the development of man power resources.

1.5 SCOPE OF THE STUDY

The focus of this work is to design a reliable web-based application with multiple scope in a bid to shift focus from the previous method of selling items manually at TRENDS shopping complex, Anyigba.

The Acceptance Criteria

The acceptance criteria should cover all the nuances that must be built in the product in order to implement the feature. While the feature is written from the user's point of view, the acceptance criteria is written from the product's point of view.

Referring back to the above example: "*As an online customer, I need to search for products, so that I can find the ones I want to buy,*" you might list acceptance criteria like:

1. Search for a product by name or category
2. View products by category
3. View images and details for each product
4. Add to cart from the detail or search pages

It is important to clearly number each acceptance criteria. This makes it easier to reference during refinement, demos, and acceptance testing. Also, the acceptance criteria should be kept as generic as possible when it comes to referring to any specific UI element. For example, rather than using specific terms such as "link" or "button" use a more generic term such as "CTA" (call to action). If possible avoid device-specific terms such as "click" and "tap."

\STAKEHOLDERS

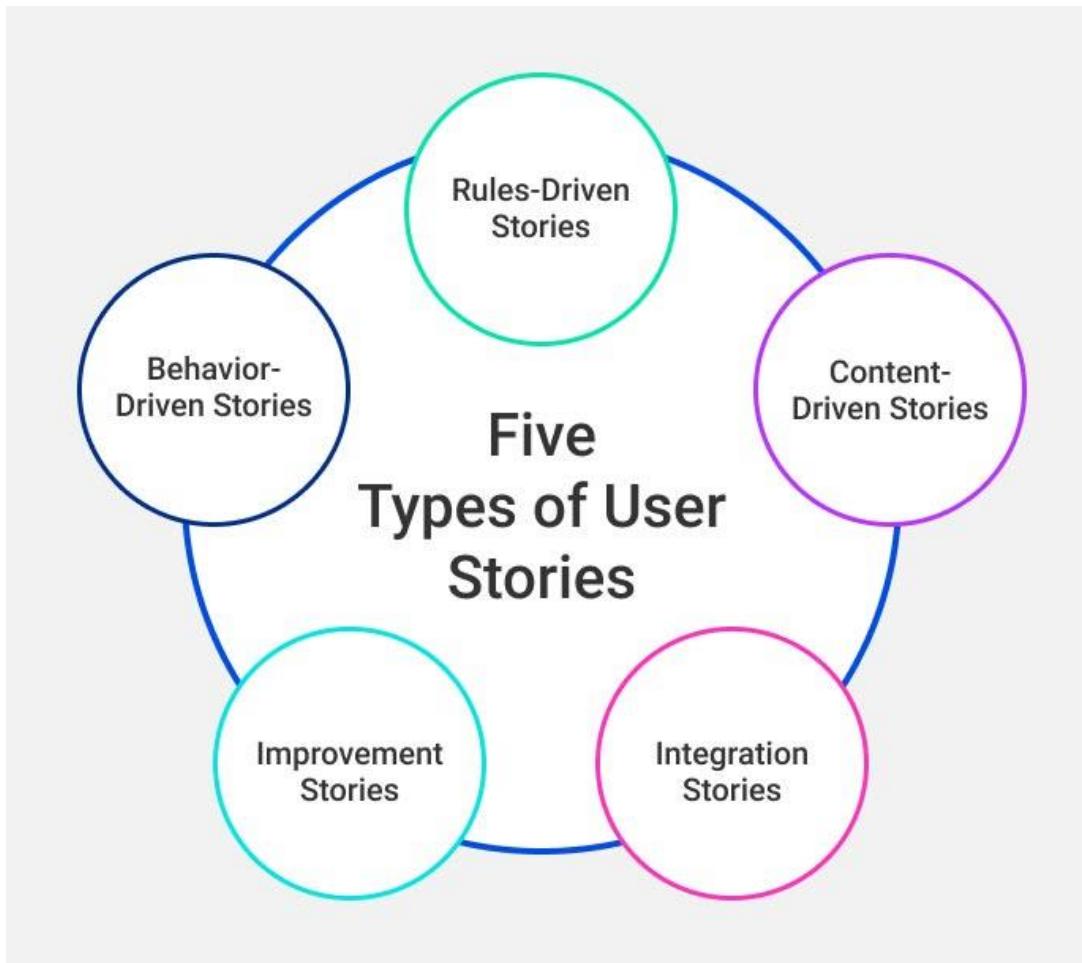
A Stakeholder is a person, or a group that has interest in an organisation's activity. There are many different stakeholders in E-commerce.

They can affect or be affected by E-commerce.

- Understanding the need of the users and other stakeholders is a effective solution
- Have varying perspectives on the Problem.
- Various needs must be addressed by the solution.

Customer/Client
Project Members
Project Manager
Seller
Buyers
Designers
Companies
Competitors

Types of User Stories



There are five different kinds of user stories that we typically encounter:

- Behavior-driven stories
- Rules-driven stories
- Content-driven stories
- Improvement stories
- Integration stories

Once a Product Owner is able to recognize the type of story needed, it becomes easier for them to focus on the criteria that are important for the story acceptance.

prime wardrobe Try before you buy >

Converse Chuck Taylor All Star Low Top Sneakers

\$52.52 - \$129.99 & Free Returns on select colors and styles

4.5 4,630 ratings | 101 customer reviews

Size: 8.5 M US Men's

Color: Yellow/White

Details: Related Items

• Synthetic
• Imported
• Round toe
• Durable construction
• Breathable mesh upper
• Performance mesh upper
• Lace-up, low-top sneaker
• Durable sole for long-lasting wear

Shop Deals of the Day

Add to Cart

Share

Women's Walking Shoes: Save \$20.00

Women's Walking Shoes: Save \$20.00

Let's take a look at the various kinds of stories that would have resulted in a product page such as this.

Behavior-Driven Stories

These are stories where the user's actions or decisions are the focus. These stories typically have a number of scenarios to be considered.

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Behavior driven stories to define the user interface available to see different views of a product, or to watch a product view.
Behavior driven stories to define the product variations presented based on size/color selections made by the user.
Behavior driven stories to define the user interactions expected to add an item to cart, or to add an item to a list.

In this example, there are multiple possible scenarios:

1. User entered the correct credentials for authentication
2. User entered incorrect credentials for authentication
3. User realizes that they forgot the credentials
4. User realizes that they do not have an account, and wants to create one now

For each scenario, we need the acceptance criteria defined. Use simple language in an active voice to state what the product needs to do. Each scenario is expected to have a “WHEN” and a “THEN” phrase. If the scenario is dependent on a specific pre-condition, then the scenario would need a “GIVEN” phrase too.

Acceptance criteria:

Scenario 1: Successful authentication

When the user enters the correct email address and password and selects “sign-in” CTA

Then route the user to My Account home page and display signed-in status on header

Scenario 2: Unsuccessful authentication

When the user enters an incorrect combination of email address and password and selects “sign-in” CTA

Then reset credentials fields and display an error message “Incorrect Credentials”

Scenario 3: Forgot credentials

When the user selects the “forgot credentials” CTA

Then route the user to the “forgot credentials” page

Scenario 4: Register

When the user selects the “register” CTA

Then route the user to the “registration” page

Rules-Driven Stories

There are also stories where the focus needs to be on the business rules. The user actions do not have much relevance within the scope of the story (there could be related stories where the user action is in focus).

The screenshot shows an Amazon product page for 'Converse Chuck Taylor All Star Low Top Sneakers'. The main product image is a yellow low-top sneaker. To the right of the image, there is a detailed product description and a price range of \$32.32 - \$129.99. Below the description, there is a section for 'Select Product Variants' showing various color options. On the far right, there is a sidebar advertisement for 'Duck Walking Shoes' featuring a small image of the shoes and some text.

Rules driven stories to define the price range to be shown for a product, or to determine whether a product is returnable or not.

Rules driven stories to define the product to be highlighted via an advertisement.

This story is about the business rules to be built to support search. There would be other stories to cover the user behavior around using the 'search' function.

Thus, the acceptance criteria for this story would look like:

1) For finding the products that match the search criteria, use the following attributes in the order listed below.

- Product name
- Product variation name
- Product short description
- Product long description
- Product reviews

2) For finding the categories that match the search criteria, use the following attributes in the order listed below.

- Category name
- Category short description
-

3) Both full and partial match should be attempted.

4) For a partial match, at least 3 characters should match.

5) Ignore all standard stop words while attempting a match.

6) Use synonyms to find a match. Refer to <link> for the list of synonyms.

7) A minimum of 3 characters needs to be entered to find a match.

Content-Driven Stories

These are stories that revolve around content generation and display.

The content-driven stories are a hybrid between behavior-driven and rules-driven stories. They do have a behavior aspect, but the rules behind the content generation/display are often more complex than the user behavior itself.

So, a rules-driven format is more suitable than a behavior-driven format for the acceptance criteria. How it differs from a rules-driven story is that the acceptance criteria, in this case, will need to refer to several snippets from the design pages and/or copy documents for it to be complete.

Keep in mind that the need for many of these stories are likely to come up only when UX/UI discussions happen. So it's quite possible that none of these stories show up when the Product Owner does the first round of user story mapping with the product stakeholder

Content driven stories to define what kind of content needs to appear on a banner, and what kind of controls are required for the business users to manage that content.

Acceptance criteria:

- 1) The loyalty program benefits needs to be displayed as a banner over the header.
- 2) It should be possible to configure via the administration console the date range during which this banner needs to be displayed.
 - The user should be mandated to enter both the ‘from’ and ‘to’ dates for the date range.
 - The banner should automatically appear and disappear according to the date range.
- 3) It should be possible to configure the banner such that it is personalized for each user. The following four user segments should be available for this configuration.
 - Anonymous user
 - Signed-in user who is not a loyalty program member
 - Signed-in user who is a loyalty program member but has no loyalty points
 - Signed-in user who is a loyalty program member and has at least one loyalty point
- 4) For each user segment, it should be possible to configure the image and the link upon clicking the image.
- 5) Set up the banner with the following images and links.
 - Anonymous user - <image link> - link to “registration page”
 - Signed-in user who is not a loyalty program member - <image link> - link to “profile page”
 - Signed-in user who is a loyalty program member but has no loyalty points - <image link> - no link
 - Signed-in user who is a loyalty program member and has at least one loyalty point - <image link> - no link

Improvement Stories

There are often situations where we need to make a small improvement over a story that has already been built.

Here is an example. Let's say we had a site where all the error messages on the registration page were in 'black' color. After getting some real customer feedback, it was understood that the error messages need to be in 'red' color for them to be noticed. So we would have a story that goes as follows.

"As a customer trying to register for an account, I need to be informed clearly if I am making any errors, so that I can fix them quickly."

Now there is no point in writing a detailed acceptance criteria covering all error scenarios. This must have already been covered in the story/stories that were built. So, simple acceptance criteria is all that is needed in this case.

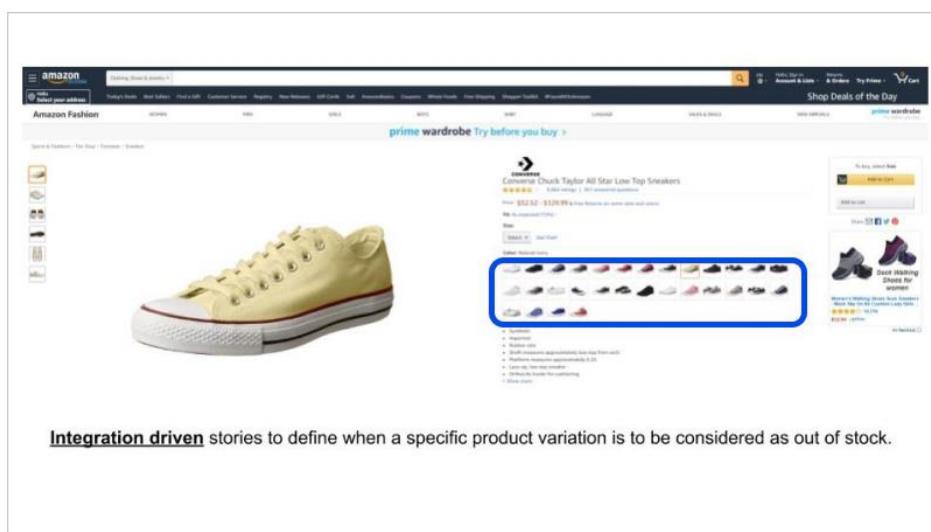
Acceptance criteria:

- Change the font color of all error messages in registration page to 'red' for all error scenarios.
Refer to story <provide link> for the list of error scenarios.

Integration Stories

When building a product backlog, there will be a need to write stories that result in a technical integration work. For example, between online shopping store and OMS (order management system), or between online shopping store and a payment gateway.

Figuring out the technical details of the integration is outside the purview of the story definition. However, the story needs to define sufficient scenarios to drive the downstream technical analysis.



Here are a couple of examples. You will notice that in one case the format is of a behavior-driven story, and in the other the rules-driven format has been used. If the integration is of a request-response nature, a behavior-driven format works best. If the integration is of an offline mode, a rules-driven format works best.

Example 1) Credit card authorization: “*As a customer about to make a purchase, I need to be able to submit my credit card details and get authorization so that I can complete my checkout.*”

Acceptance criteria:

Scenario 1: Successful authorization

When the user enters the credit-card-number, year-and-month-of-expiry and cvv and selects “sign-in” CTA and authorization is successful

Then display “payment confirmation” message and persist authorization token for future reference (i.e, for sending for settlement)

Scenario 2: Unsuccessful authorization - Incorrect card details

When the user enters incorrect credit-card-number or year-and-month-of-expiry or cvv and selects “sign-in” CTA and authorization fails

Then display “payment failed” error-message and reset the payment fields

Scenario 3: Unsuccessful authorization - Insufficient balance

When the user enters the correct credit-card-number, year-and-month-of-expiry, cvv of a card with insufficient balance and selects “sign-in” CTA and authorization fails

Then display “payment failed” error-message and reset the payment fields

Scenario 4: Unsuccessful authorization - Fraud

When the user enters the credit-card-number, year-and-month-of-expiry, cvv and selects “sign-in” CTA and authorization fails due to suspected fraud

Then display “error page” and keep the order on hold for ‘suspected fraud’

Scenario 5: Payment gateway connectivity problem

When the user enters the credit-card-number, year-and-month-of-expiry, cvv and selects “sign-in” CTA and connection to payment gateway fails

Then display “call customer service” message and reset the payment fields

Authentication

Registration:

1. Create a signup page /signup
2. Add a url/controller/template /signup
3. /signup has a form, username, email, and password.
4. "Submit" button posts to /register
5. /register creates a new user

Login:

1. Create a login page /login
2. /login shows a form for username and password
3. "Submit" button posts to /login_user
4. /login_user uses the code below

Authenticate:

1. Create a new page that is only for logged in users. A members only page. Up to you what you want to show!
2. If the user is logged in, show the page.
3. If not, redirect the user to the login page

Logout:

1. Create a new url/controller for /logout
2. When /logout is called, redirect user to the home page

Items

1. Create a new Item Model with the following fields:

Name, Description, Price

2. Create several in the admin or shell
3. Create new routes and templates to show a listing of the items

/items ->shows all items

4. Create new route and template to show just one listing
5. Create more than 10 items

Pagination

1. Add pagination to the items listing page, show 10 items per page

Search

1. Add search box to items listing page, search uses GET and query params to generate new page. The search query uses the name and description fields.

Filter

1. Allow the user to filter items by price. Use GET and query params. Filter by a range of prices (0-50, 50-100, 100+).

Json API for Items

- Add a format query param handler to /items where if the format equals json, then the response is in json

Shopping cart/order

- Create a new Model called Order (This is the shopping cart!)

An order belongs to a user, and has multiple items. A user can have many orders. An order has a status column, which is an integer field:

1 - In shopping cart

2 - Purchased

For any given user, you can only have one order with a status equal to 1.

When a user adds an item to the shopping cart, if there is no order with a status equal to 1, then create a new order for the user.

- To show cart, you will need to query for the right order - match the user (request.user) and set a condition where status is equal to one.
- Allow user to delete items from the cart
- Shows the total price of all items
- Allows them to purchase items, purchasing takes the user to payment form at /payments
- Update the /item/ template to have a "purchase" button - when clicked, the item is added to the order, and the user is redirected to /cart

Payment form

- Create a new route and template for /payments
- Create a form that allows the user to enter billing info
- On submit, the order id status changes to purchased.



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Functional requirement And Specifications of online shopping System:

Various functional modules can be implemented by the system. it provides a requirement overview of the system.

- Master Maintenance: -**

Is the system that maintains the detail of the products and their hierarchy attributes (size, weight, cost etc.) The two main components of master maintenance are as follows.

- Product master: -**

It's included the information of the products, item no, size, categories etc. it's is also the admin of vendor or seller where they can put the information of the products in websites.

- Price master: -**

Only for the price of the products and applicable discount of the products.

- Transection: -**

Transaction is a payment method in which the transfer of money of buying products. This process is secure and password protected. Three steps involved in the online transaction are Registration, Placing an order, and, Payment.

- Reporting: -**

After ordering for the product, the system will send one copy of the bill to the customer's Email-address and another one for the system data base.

- Stock Report: -**

Produce the quantity of the products available and status of the products.

- Order Report: -**

List of the products that can be buy by the customer.

- **Delivery Report:** -

List of the products that can be delivered to the customer within 48-72 hrs.

- **Registration:** -

Customer wants to buy the product then he/she must be registered, unregistered user can't go to the shopping cart.

- **Login:** -

Customer logins to the system by entering valid user id and password for the shopping.

- **Changes to Cart:** -

Changes to cart means the customer after login or registration can make order or cancel order of the product from the shopping cart.

- **Payment:** -

In this system we are dealing the mode of payment by Cash. We will extend this to credit card, debit card etc. in the future.

- **Logout:** -

After ordering or surfing for the product customer has to logout.



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Slot: A2

Topic : Online Shopping System

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• Contribution in Review-1 & Review-2	WORK BREAKDOWN STRUCTURE DIAGRAM	FLOAT AND CRITICAL PATH, ACTIVITY SPAN, AOA DIAGRAM	FUNCTIONAL REQUIREMENT AND SPECIFICATION FOR REQUIREMENT	AON DIAGRAM, FORWARD PASS, BACKWARD PASS	CASE STUDY ,STACKHOLDERS, USER STORIES

2.) (A),(B),(C) - THULASI MADHAN R

2.) (D),(E) – KAVIYA K

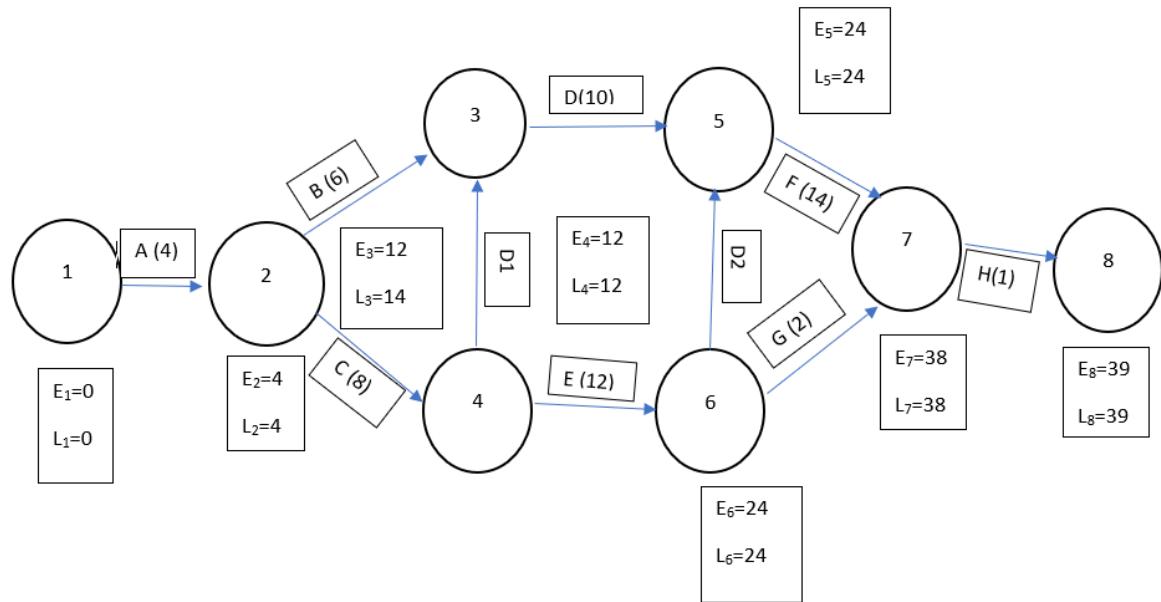
- ❖ A, B, C, D, E, F, G and H are independent activities within Project X
- ❖ A is the starting and H is the finishing activity.
- ❖ B can start just after completion of A.
- ❖ C can start after completion of A.
- ❖ D can start after completion of both B and C.
- ❖ E can start after completion of C.
- ❖ F can start after completion of D and E.
- ❖ G can start after completion of C and E.
- ❖ H can finish after completion of F and G.

Following durations are valid for each activity:**A=4 days; B=6 days; C=8 days; D=10 days; E=12 days F=14 days; G=2 days; H=1 days.**

Activity	Duration(days)	Preceders
A	4	
B	6	A
C	8	A
D	10	B, C
E	12	C
F	14	D, E
G	2	C, E
H	1	F, G
Activity	Duration(days)	Preceders
A	4	
B	6	A
C	8	A
D	10	B, C
E	12	C
F	14	D, E
G	2	C, E
H	1	F, G

(A)

ACTIVITY ON NODE (AON) DIAGRAM :



Here D1 and D2 Dummy lines

(B) FORWARD PASS, EARLY START (ES), EARLY FINISH (EF)

(b) FORWARD PASS:

To calculate earliest date on which each activity may be started and completed.

Earliest start (ES)

Early finish (EF) = ES + duration

Applying Forward Pass method:

$$E_1 = 0$$

$$E_2 = E_1 + t_1 = 0 + 4 = 4$$

$$E_3 = \text{Max} \{ E_i^0 + t_{i,3} \} [i=2,4]$$

$$= \text{Max} \{ E_2 + t_{2,3}; E_4 + t_{4,3} \}$$

$$= \text{Max} \{ 4 + 6; 12 + 0 \}$$

$$= \text{Max} \{ 10; 12 \}$$

$$= 12$$

$$E_4 = E_2 + t_{2,4} [t_{2,4} = C = 8] = 4 + 8 = 12$$

$$E_5 = \text{Max} \{ E_i^0 + t_{i,5} \} [i=3,6]$$

$$= \text{Max} \{ 12 + 10; 24 + 0 \}$$

$$= 24$$

$$E_6 = E_4 + t_{4,6} [t_{4,6} = E = 12] = 12 + 12 = 24$$

$$E_7 = \text{Max} \{ E_i^0 + t_{i,7} \} [i=5,6]$$

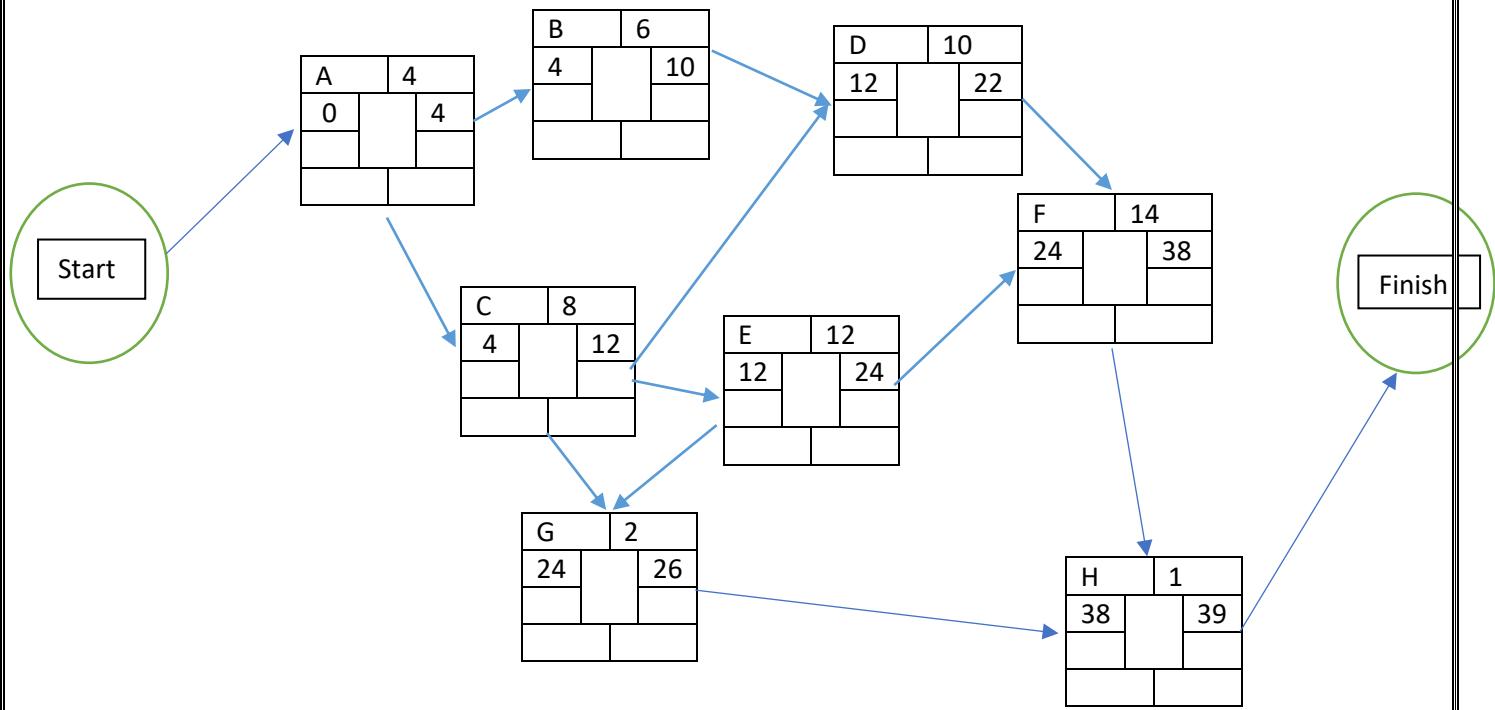
$$= \text{Max} \{ 24 + 14; 24 + 2 \}$$

$$= \text{Max} \{ 38; 26 \}$$

$$= 38$$

$$E_8 = E_7 + t_{7,8} [t_{7,8} = H = 1] = 38 + 1 = 39$$

FORWARD PASS DIAGRAM :



(C) BACKWARD PASS, LATE START (LS), LATE FINISH (LF)

(c) Backward Pass:

$$L_8 = E_8 = 39$$

$$L_7 = L_8 - t_{7,8} [t_{7,8} = H=1] = 39 - 1 = 38$$

$$L_6 = \min \{ L_7 - t_{6,7}; L_5 - t_{6,5} \}$$

$$= \min \{ 38 - 2; 24 - 0 \}$$

$$= \min \{ 36; 24 \}$$

$$= 24$$

$$L_5 = L_7 - t_{5,7} [t_{5,7} = F=14] = 38 - 14 = 24$$

$$L_4 = \min \{ L_j - t_{4,j} \} [j=6,3]$$

$$= \min \{ L_6 - t_{4,6}; L_3 - t_{4,3} \}$$

$$= \min \{ 12; 14 \}$$

$$= 12$$

$$L_3 = L_5 - t_{3,5} [t_{3,5} = D=10] = 24 - 10 = 14$$

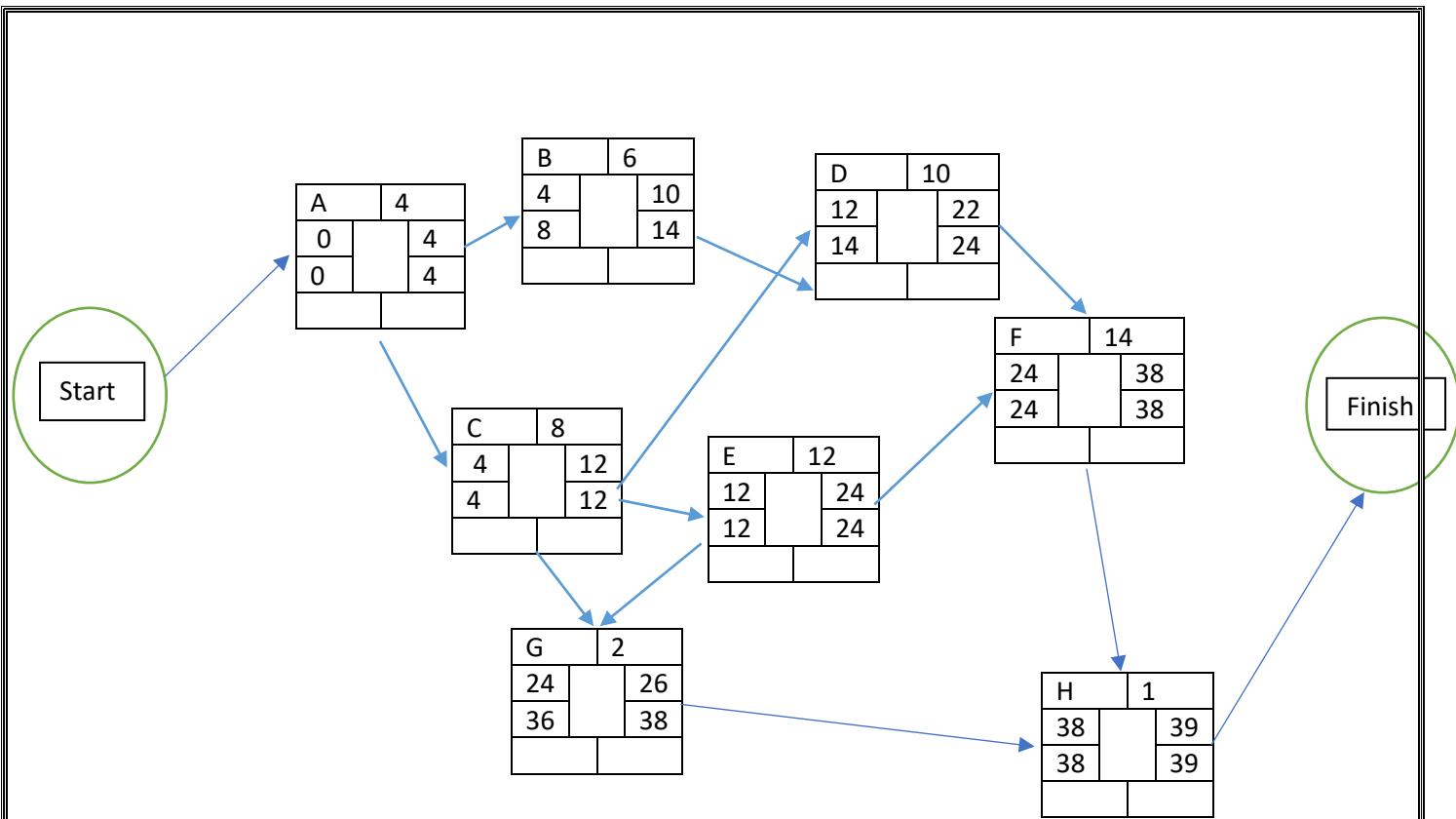
$$L_2 = \min \{ L_j - t_{2,j} \} [j=4,3]$$

$$= \min \{ L_4 - t_{2,4}; L_3 - t_{2,3} \}$$

$$= \min \{ 4; 8 \}$$

$$= 4$$

$$L_1 = L_2 - t_{1,2} [t_{1,2} = A=4] = 4 - 4 = 0$$



THIS IS A BACKWARD PASS DIAGRAM WITH CALUCLATED VALUES OF LATE START (LS) AND LATE FINISH (LF) FOR EACH ACTIVITY

(D) FLOAT AND CRITICAL PATH :

(d) The critical path in the network diagram has been shown. This has been done by double lines by joining all those events where E-values and L-values are equal.

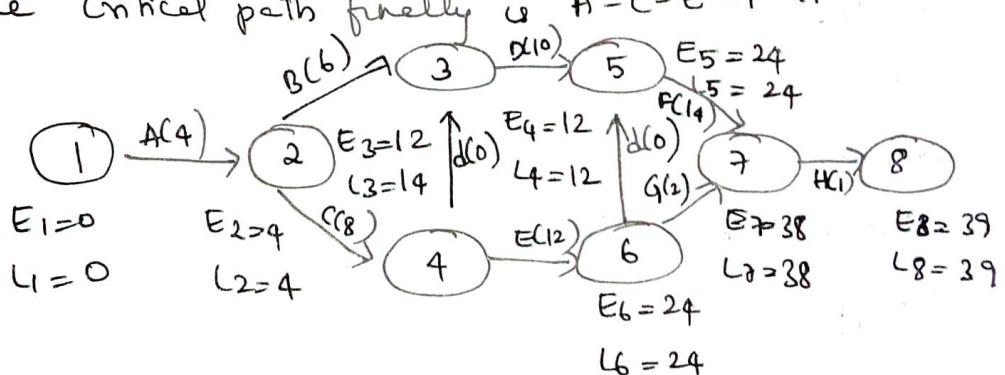
The critical path of the project is: 1-2-4-6-5-7-8
and the critical activities are A, E, C, d, F, H.

The total project time is 39.

Critical path includes all nodes with FLOAT = 0

$$\text{FLOAT} = \text{LST} - \text{EST} \text{ (for critical path)}$$

The critical path finally is A-C-E-F-H



NOTATION:

Activity Label		Duration
ES	Activity	EF
LS	descrip- tion	LF
	Activity Span	Float

$$\boxed{\text{Float} = \text{ES} - \text{LS} \text{ or } \text{EF} - \text{LF}}$$

Float Calculations:

For A:

$$\text{Float} = 0 - 0 = 0$$

For B:

$$\text{Float} = 4 - 8 = 4$$

For C:

$$\text{Float} = 4 - 4 = 0$$

For D:

$$\text{Float} = 12 - 14 = 2$$

For E:

$$\text{Float} = 12 - 12 = 0$$

For F:

$$\text{Float} = 24 - 24 = 0$$

For G:

$$\text{Float} = 24 - 36 = 12$$

For H:

$$\text{Float} = 38 - 38 = 0$$

$$\boxed{\text{Activity Span} = LF - ES}$$

Activity Span Calculations:

For A:

$$\text{Activity Span} = 4 - 0 = 4$$

For B:

$$\text{Activity Span} = 14 - 4 = 10$$

For C:

$$\text{Activity Span} = 12 - 4 = 8$$

For D:

$$\text{Activity Span} = 24 - 12 = 12$$

For E:

$$\text{Activity Span} = 24 - 12 = 12$$

For F:

$$\text{Activity Span} = 38 - 24 = 14$$

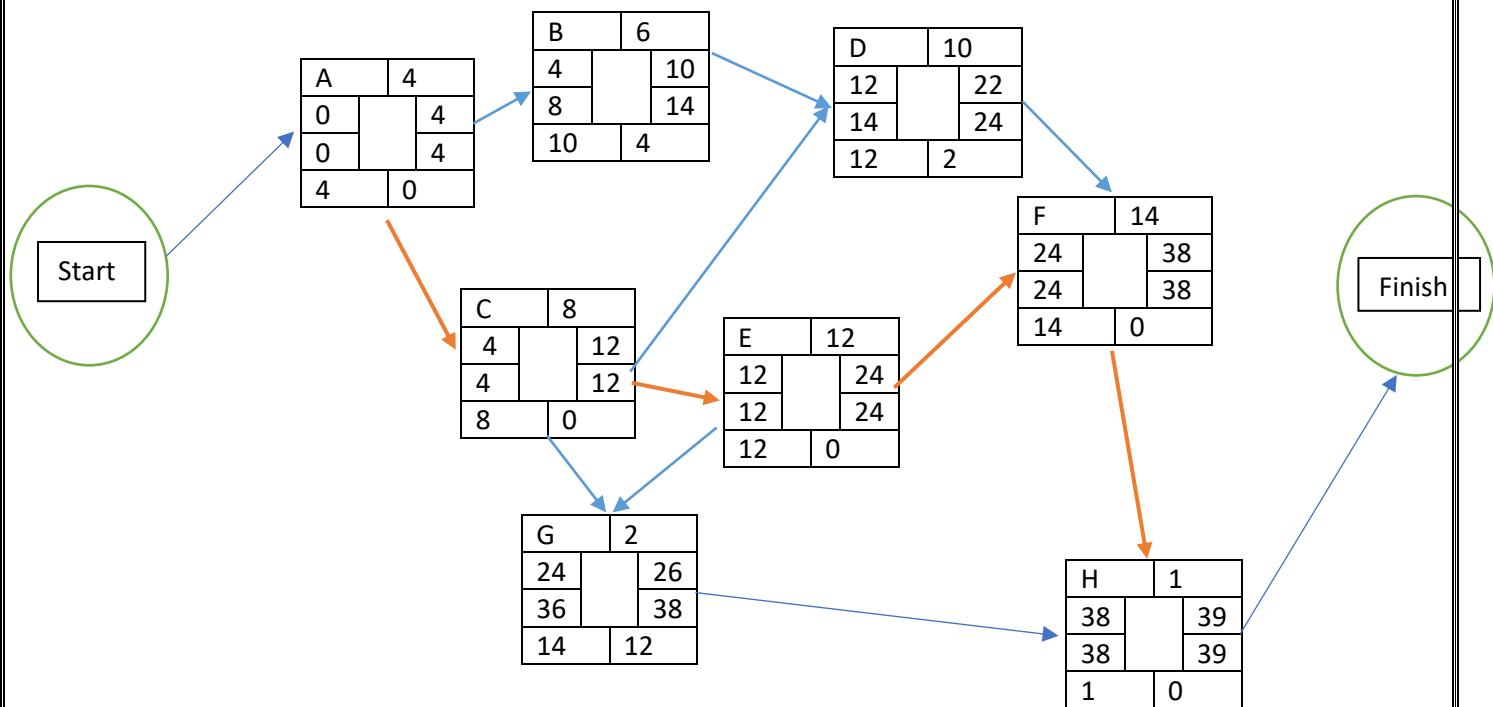
For G:

$$\text{Activity Span} = 38 - 24 = 14$$

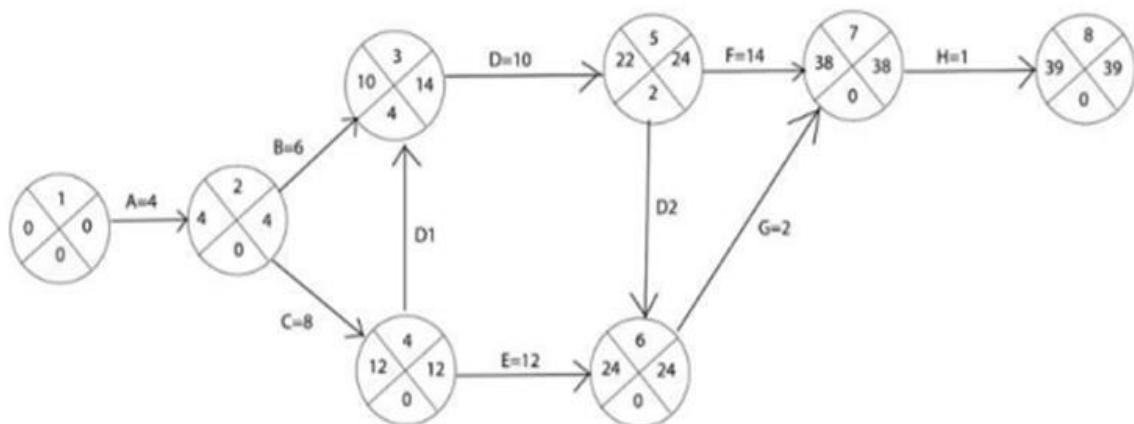
For H:

$$\text{Activity Span} = 39 - 38 = 1$$

DIAGRAM FOR FLOAT AND CRITICAL PATH



AOA DIAGRAM OF THIS PROJECT



Here D1 and D2 are Dummy lines

REVIEW 3

The critical path method is a technique that allows you to identify tasks that are necessary for project completion. The critical path in project management is the longest sequence of activities that must be finished on time to complete the entire project.

The actions taken by the project manager to avoid exceeding current length of the critical path

- Shorten the duration or work on a task on the critical path.
- Change a task constraint to allow for more scheduling flexibility.
- Break a critical task into smaller tasks that can be worked on at the same time by different resources.
- Revise task dependencies to enable more scheduling flexibility.
- Set lead time between dependent tasks where applicable.
- Schedule overtime.
- Assign additional resources to work on critical path tasks.

Effective Project Management tools can help you to manage the time more efficiently. As a Project manager , to avoid project delay we can certainly take steps to keep your project on track and mitigate the damage from delays that occur.

- Set Realistic goals for Your Projects
- Track the progress of the projects on proper interval
- gathering the right people of respective project efficient skills
- Scheduling the Project is an important Factor
- Conducting a team meeting once in a week and discussing about project situation

As You can see that here if there is a delay in 5 weeks in completion the activity G, the project manager should have a solution to reslove it without exceeding the length of the planned critical path

FIVE POTENTIAL RISKS

TECHNICAL RISK :

The most common cases of data loss or theft stem from exposure to malware. Malicious software enters a machine through email attachments, downloads, infected websites, infected devices and more. Once inside, they can spy on a user's activities, redirect him to malicious portals, track keyboard inputs and perform other highly dangerous activities. Malware authors deliberately target such malware during times of high traffic, so as to get maximum exposure and hits.

When a user visits a site and makes an online purchase, his details entered are up for grabs. This is the prize that online attackers look for and makes their efforts worthwhile. These details can be acquired by an attacker either by phishing the user, or by hacking the server of a genuine site and stealing details. Once a cybercriminal has in-depth information such as Name, DOB, Contact details, Address and more, he can cause a huge financial dent in the victims account

- secure computers, servers and wireless networks.
- secure your passwords.
- use anti-virus and anti-spyware protection, and firewalls.
- understand legal obligations for online shopping system.

COST AND OVERPAYMENT RISK :

Cost risk directly affects online consumer behavior and their intention to purchase. When consumer cost risk is high, the consumer intention to purchase online is low and when consumer cost risk is low, the consumer intention to purchase online is high.

Over the years, overpayment scams have become quite common. Usually, they depend on a seller's goodwill to give exemplary customer service. Scammers make a purchase and pay via an online transfer or check. They pay more than the original payable amount. Then, the scammer asks for the refund of the excess amount. In the urgency, the seller usually has no time to see that the online transaction/check did not go through. This kind of threat frequently links with fake order email scams which alert an online seller about the sale of an item and

the money credited to an account by using an almost identical template of the confirmation email and sender address to the actual website.

- Use proper internet connection to avoid double payment.
- Check the product price twice before paying.
- Avoid fake duplication of products to be purchased. Original products will have legal and proper details with ratings.
- Use improved and reliable third party payment processor.

PRODUCT RISK :

Product risk is limited potential to examine the product. Online shopping is a risky way of shopping because in this way people cannot touch product they just rely on some graphics and ads.

The Internet is full of fake online stores and pages that trick people into purchasing products. The truth is, there are no products and they are not for delivery. These stores show great offers and lure people into buying their fake products. There have been various incidents where buyers never got what they ordered and spent money in the online transaction. Another reason for falling for this tactic is that these people make their sites appear as legitimate online stores. There are just slight changes in the name which are not that obvious and are easy to miss.

- Always order from reputable online stores which have a history of excellent customer service.
- See that they are following quality standards of customer satisfaction and security.
- Go through the customer comments and reviews before purchase.
- Know the hallmarks of the real product.
- Check the identity of the seller.

FINANCIAL RISK :

Financial risk refers to the loss in the monetary term associated with buying. It is a loss of money in a bad purchasing experience. Financial risk is the first major and big risk during buying online. In addition, it is also the strongest predictor of online shopping behavior. Financial risk play a major role in consumer decision making for buying online. Researchers reveal that financial risk is a money loss that possibly the fraud of credit card and discloses card information that's why people avoid buying online . It is also considered that the product price is not the lowest in comparison . Furthermore, the risk is problematic online buying process. Consumer faces financial risk in the early

stage of shopping Credit card fraud is another common risk. Malicious users intercept the online stores at the payment portal. Customers redirect to the malicious user's site instead of the legitimate payment gateway after making payment of the products. As the page looks identical to the gateway of the site they were shopping from, customers get confused. The malicious users then get their hands on the customers' credit card details and use it for themselves.

- Make sure that a site is using a secure protocol for sharing information in an encrypted way.
- Use trusted website for using online payment.
- Cross check twice, as hackers spy the credit card details .
- Set strong passwords.
- Sign up for transaction alerts.

PRIVATE RISK :

In globalization with the growth of online shopping privacy risk also increases. Privacy risk refers to possible loss of personal information, in other words, use without approval Privacy risk is a very important risk considered in online shopping behavior. Furthermore, it is a big challenge for customers. In addition, during online shopping, customers must provide some information about their personal credit card, name, address, etc, and unethically use of this information due to these matters consumers reluctant to buy online. Privacy risk increases uncertainty and a significant influence on the frequency of online shopping behavior.

In addition, people react diversely for privacy risk due to different reasons such as in different Privacy risk has a significant negative relationship with online shopping behavior, culture people react different, external situations like past experience. Privacy risk influence on online shopping behavior is not clear and still interesting for the researcher so, in this study, take privacy risk with online shopping behavior.

- Make sure your software and anti-virus protection is up-to-date. Updates often contain changes that help protect you and your devices from scammers and online criminals.
- Only use reputable websites when making purchases.
- Don't use public WiFi.
- Never send personal information through email.
- Always choose strong passwords for your online accounts, using a combination of upper case, lower case, number and special characters.

THANK YOU !!



ONLINE SHOPPING SYSTEM

SCHOOL OF INFORMATION TECHNOLOGY AND ENGINEERING

FALL SEMESTER 2021-22

SWE2006 SOFTWARE PROJECT MANAGEMENT

Jth Component project

Course Faculty –Prof S.Sureka

Slot: A2

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INTRODUCTION

1.1 CASE STUDY

In recent years there has been a significant increase in shopping online especially among young and adults. Online shopping can take place in many forms, namely: auction, sprees and direct shopping. This phenomenon has sparked off a new shopping trend in our society today and it will become more pervasive in the coming years as it has created more shopping avenue for customers today, not forgetting it provides a more convenient way of shopping compared to the hassle of manual shopping.

Online shopping has provided a whole new perspective to consumers which are more prevalent among the younger generation. Online shopping is growing tremendously. As internet becomes the primary means of advertising and selling products or services worldwide. Many businesses are creating websites in addition to their retail stores, and many start their business with online store alone. Online store is the number one remote shopping method that consumer use nowadays, through phones, orders mailing and so on. Although there are advantages on online shopping that attracts consumers, there is room for further growth of online shopping. There are many factors that contribute to consumer's satisfaction when shopping online. Most importantly, customers need to trust online business owners to shop on their websites.

Thus primarily, online vendors need to build customer's trust. There is consumers mistrust about online vendors and risk perception about online shopping, hence, security measures must be enforced to protect customers against theft or disclosure of their privacy. In addition, other technology factors, such as ease of findings products and delivery speeds are important to satisfying customers. The website should examine advantages and customers concern relating to online shopping and provide possible solution to these concerns in order to reduce negative perception and to facilitate shopping for higher customer's satisfaction.

Online payment has become crucial to our lives. Financial institutions have provided several platforms for online payments for ease of transactions. With advanced technology, industries, firms, companies, organizations, businesses and individuals can now have their websites to create awareness to the public and also get information easily and faster with the use of internet. The proposed case study which is TRENDS shopping complex deals in computers, books, wears, electronics, and provisions and so on. It will be a great shopping complex in town with the aid of online shopping system. Due to proliferation of information technology in the society, it is imperative for the mall to widen its horizon and meet its customer expectation. With this, it is therefore important to design a website that can support online sales of goods and services.

STATEMENT OF THE PROBLEM

The current method of transaction used by TRENDS shopping complex is stressful and cumbersome to operate and manage. The following are the problems encountered with the existing system.

- ü Insufficient awareness of goods and services.
- ü Lack of easy access to information and goods.
- ü Difficulty in transaction processes.
- ü Customers have to be physically present at the shop before choosing any item for purchase.
- ü Lack of adequate storage facilities to track goods and customer's bio-data.

AIM AND OBJECTIVES OF THE STUDY

The aim of the study is to develop an online store for TRENDS shopping complex, Anyigba. It focuses on the online shopping system using the World Wide Web and the internet. After the completion of this study, the TRENDS shopping complex will be able to transact online business such as buying of goods and services with less stress when compared to how it was done previously.

The objectives of the study are:

1. To provide online advertising of goods and services.
2. To network sellers and buyers.
3. To reach the specialized market.
4. To save cost for both sellers and customers.

STAKEHOLDERS

A Stakeholder is a person, or a group that has interest in an Organisation's activity. There are many different stakeholders in E-commerce.

They can affect or be affected by E-commerce.

- Understanding the need of the users and other stakeholders is a effective solution
- Have varying perspectives on the Problem.
- Various needs must be addressed by the solution.

Customer/Client

Project Members

Project Manager

Seller

Buyers

Designers

Companies

Competitors

WORK BREAKDOWN STRUCTURE

A work breakdown structure (WBS) is a visual, hierarchical and deliverable-oriented deconstruction of a project. It is a helpful diagram for project managers because it allows them to break down their project scope and visualize all the tasks required to complete their projects.

Online Shop

This is the entity representing the whole online shopping system which further contains several other entities describing the entire application.

Customer :

This represents the set of customers, which are the clients who will be using this application.

Cust-id:

This is the identification number assigned by the admin to the users so as to identify them uniquely in the future.

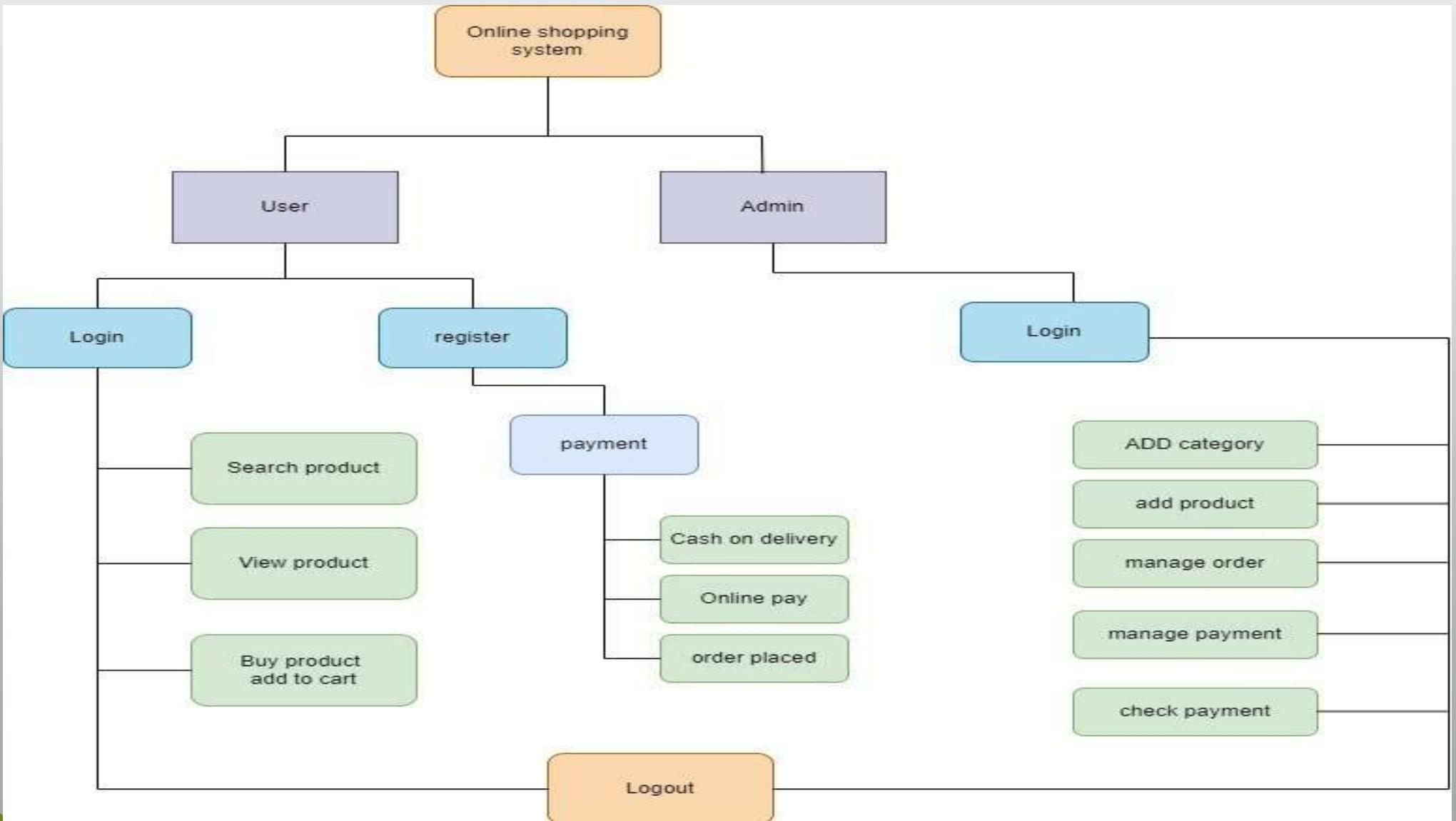
Address:

This is the user's address where the user lives so that to use it at the time of delivery or any further requirements.

Product :

This is the entity representing the items that customers choose to buy. It can be added to the cart once the user likes it and then can be easily confirmed for order.

WORK BREAKDOWN STRUCTURE DIAGRAM



FUNCTIONAL REQUIREMENT AND SPECIFICATIONS OF ONLINE SHOPPING SYSTEM:

Various functional modules can be implemented by the system. it provides a requirement overview of the system.

- **Master Maintenance:** -

Is the system that maintains the detail of the products and their hierarchy attributes (size, weight, cost etc.) The two main components of master maintenance are as follows.

- **Product master:** -

It's included the information of the products, item no, size, categories etc. it's also the admin of vendor or seller where they can put the information of the products in websites.

- **Price master:** -

Only for the price of the products and applicable discount of the products.

- **Transection:** -

Transaction is a payment method in which the transfer of money of buying products. This process is secure and password protected. Three steps involved in the online transaction are Registration, Placing an order, and, Payment.

- Reporting:** -

After ordering for the product, the system will send one copy of the bill to the customer's Email-address and another one for the system data base.

- **Stock Report:** -

Produce the quantity of the products available and status of the products.

- **Order Report:** -

List of the products that can be buy by the customer.

- Delivery Report:** -

List of the products that can be delivered to the customer within 48-72 hrs.

Registration: -

Customer wants to buy the product then he/she must be registered, unregistered user can't go to the shopping cart.

- Login: -**

Customer logins to the system by entering valid user id and password for the shopping

- Changes to Cart: -**

Changes to cart means the customer after login or registration can make order or cancel order of the product from the shopping cart.

- Payment: -**

In this system we are dealing the mode of payment by Cash. We will extend this to credit card, debit card etc. in the future.

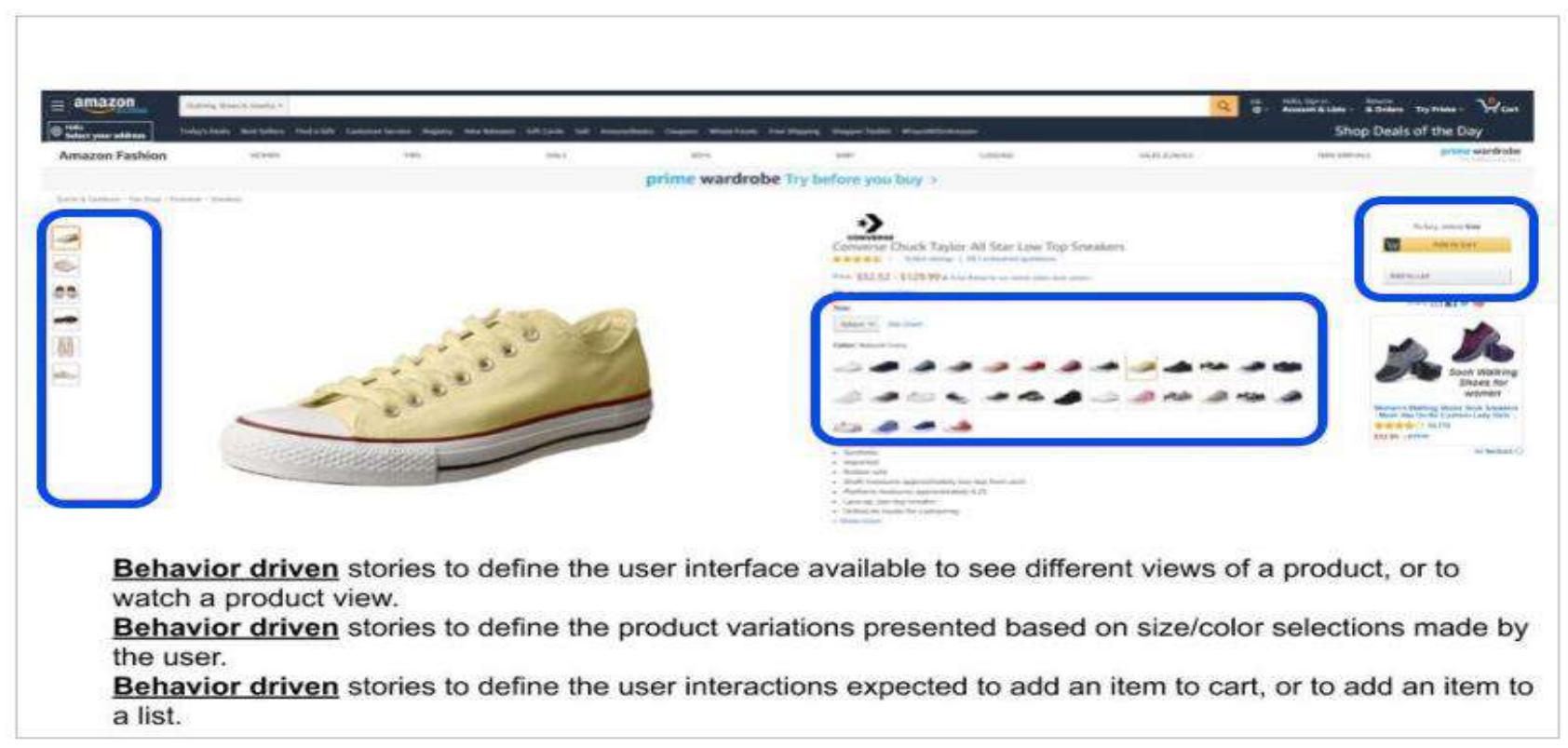
- Logout: -**

After ordering or surfing for the product customer has to logout.

□ USER-STORIES

Behavior-Driven Stories

These are stories where the user's actions or decisions are the focus. These stories typically have a number of scenarios to be considered.



Behavior driven stories to define the user interface available to see different views of a product, or to watch a product view.

Behavior driven stories to define the product variations presented based on size/color selections made by the user.

Behavior driven stories to define the user interactions expected to add an item to cart, or to add an item to a list.

Acceptance criteria:

Scenario 1: Successful authentication

When the user enters the correct email address and password and selects “sign-in” CTA
Then route the user to My Account home page and display signed-in status on header

Scenario 2: Unsuccessful authentication

When the user enters an incorrect combination of email address and password and selects “sign-in” CTA
Then reset credentials fields and display an error message “Incorrect Credentials”

Scenario 3: Forgot credentials

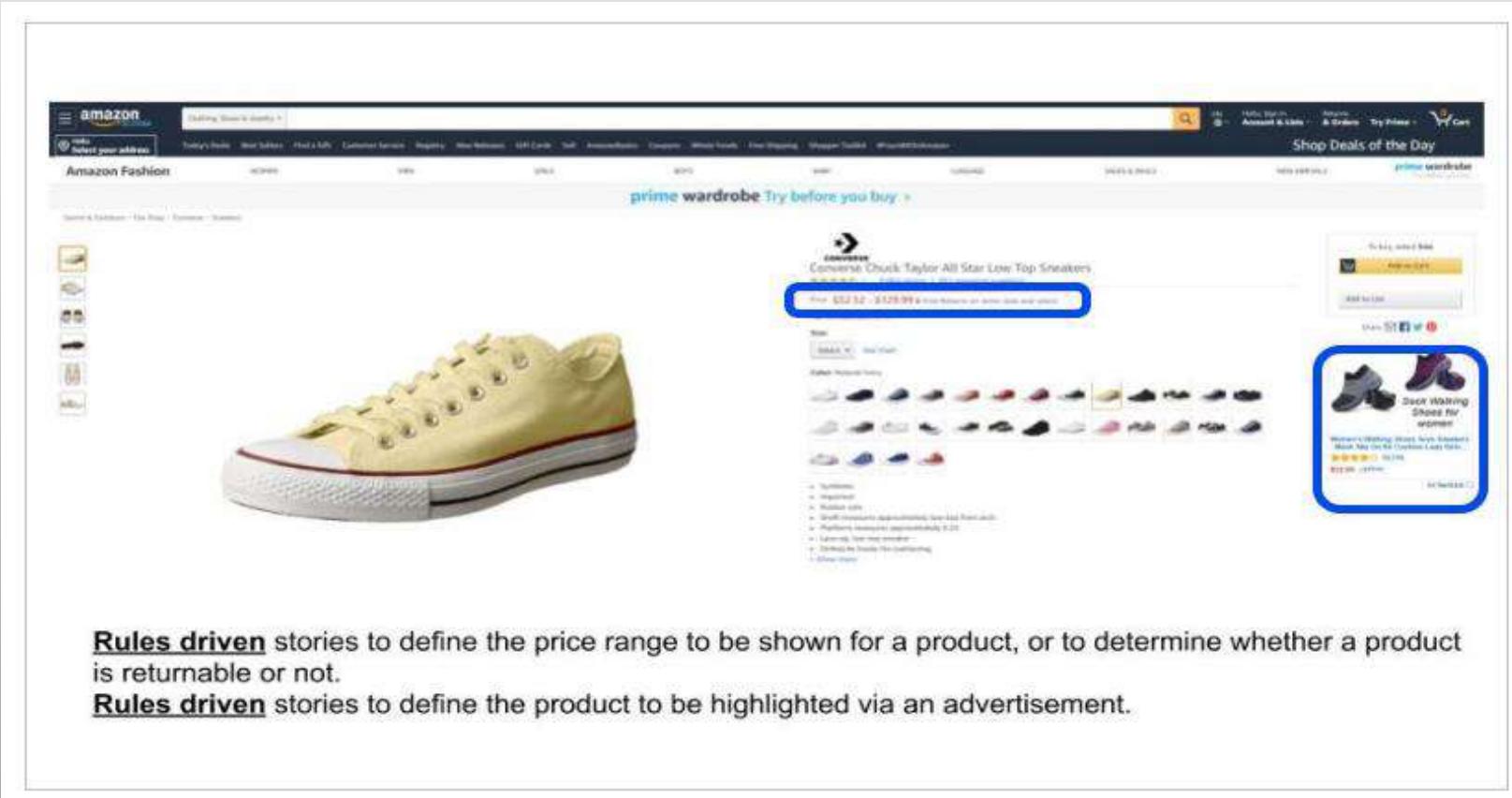
When the user selects the “forgot credentials” CTA
Then route the user to the “forgot credentials” page

Scenario 4: Register

When the user selects the “register” CTA
Then route the user to the “registration” page

Rules-Driven

This story is about the business rules to be built to support search. There would be other stories to cover the user behavior around using the 'search' function.



Rules driven stories to define the price range to be shown for a product, or to determine whether a product is returnable or not.

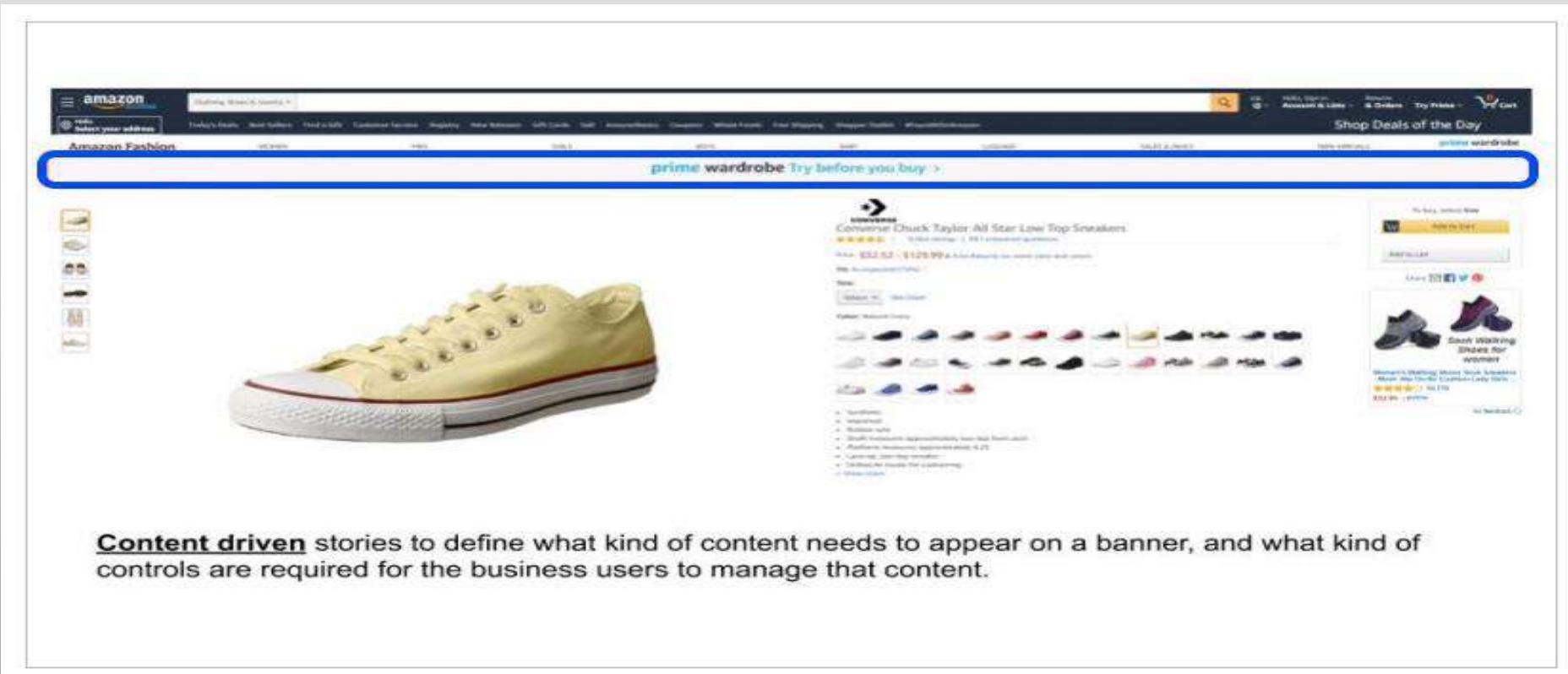
Rules driven stories to define the product to be highlighted via an advertisement.

Thus, the acceptance criteria for this story would look like:

- 1) For finding the products that match the search criteria, use the following attributes in the order listed below.
 - o Product name
 - o Product variation name
 - o Product short description
 - o Product long description
 - o Product reviews
- 2) For finding the categories that match the search criteria, use the following attributes in the order listed below.
 - o Category name
 - o Category short description
- 3) Both full and partial match should be attempted.
- 4) For a partial match, at least 3 characters should match.
- 5) Ignore all standard stop words while attempting a match.
- 6) Use synonyms to find a match. Refer to <link> for the list of synonyms.
- 7) A minimum of 3 characters needs to be entered to find a match.

Content-Driven Stories

These are stories that revolve around content generation and display. The content-driven stories are a hybrid between behavior-driven and rules-driven stories. They do have a behavior aspect, but the rules behind the content generation/display are often more complex than the user behavior itself.

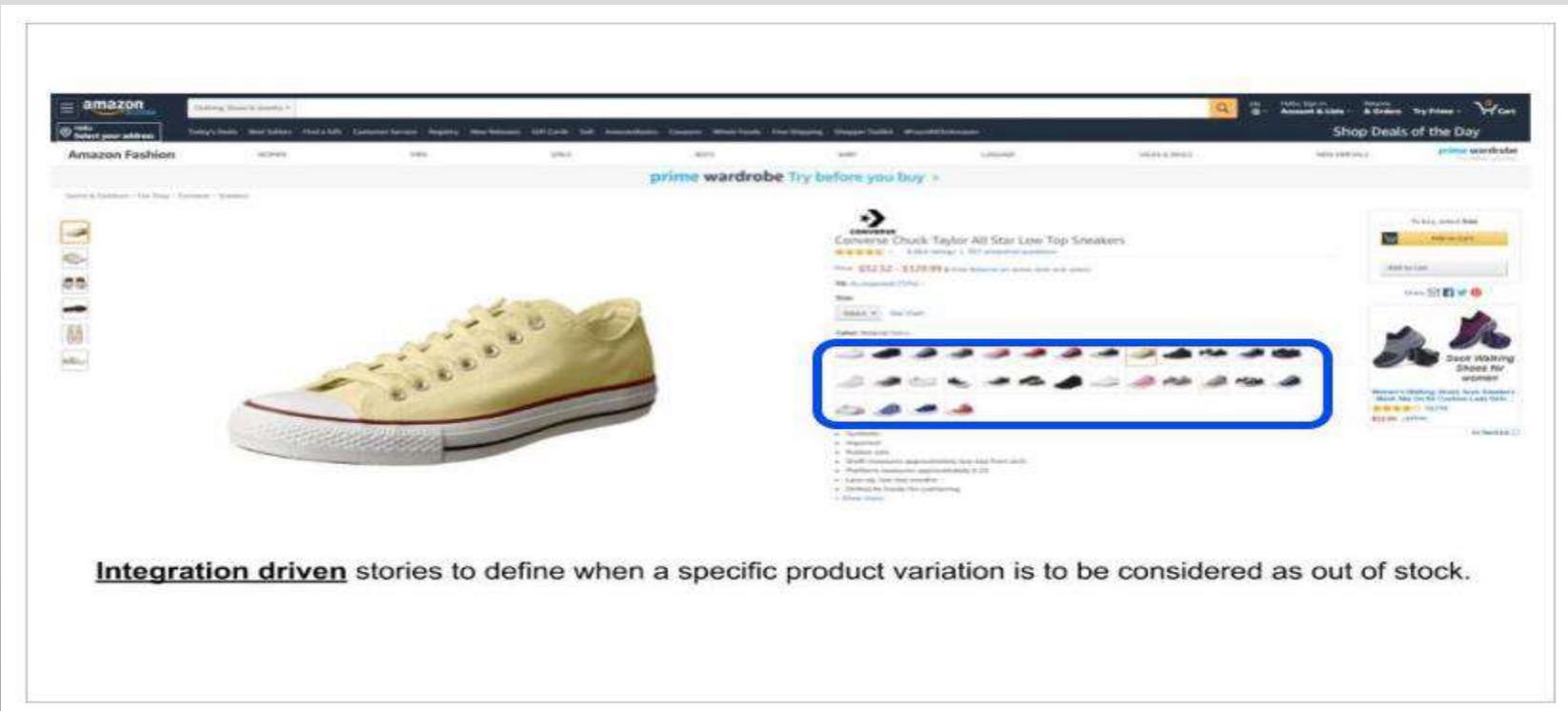


Acceptance criteria:

- 1) The loyalty program benefits needs to be displayed as a banner over the header.
- 2) It should be possible to configure via the administration console the date range during which this banner needs to be displayed.
 - The user should be mandated to enter both the ‘from’ and ‘to’ dates for the date range.
 - The banner should automatically appear and disappear according to the date range.
- 3) It should be possible to configure the banner such that it is personalized for each user. The following four user segments should be available for this configuration.
 - Anonymous user
 - Signed-in user who is not a loyalty program member
 - Signed-in user who is a loyalty program member but has no loyalty points
 - Signed-in user who is a loyalty program member and has at least one loyalty point
- 4) For each user segment, it should be possible to configure the image and the link upon clicking the image.
- 5) Set up the banner with the following images and links.
 - Anonymous user - <image link> - link to “registration page”
 - Signed-in user who is not a loyalty program member - <image link> - link to “profile page”
 - Signed-in user who is a loyalty program member but has no loyalty points - <image link> - no link
 - Signed-in user who is a loyalty program member and has at least one loyalty point - <image link> - no link .

Integration Stories

When building a product backlog, there will be a need to write stories that result in a technical integration work. For example, between online shopping store and OMS (order management system), or between online shopping store and a payment gateway.



Acceptance criteria:

Scenario 1: Successful authorization

When the user enters the credit-card-number, year-and-month-of-expiry and cvv and selects “sign-in” CTA and authorization is successful

Then display “payment confirmation” message and persist authorization token for future reference (i.e, for sending for settlement)

Scenario 2: Unsuccessful authorization - Incorrect card details

When the user enters incorrect credit-card-number or year-and-month-of-expiry or cvv and selects “sign-in” CTA and authorization fails

Then display “payment failed” error-message and reset the payment fields

Scenario 3: Unsuccessful authorization - Insufficient balance

When the user enters the correct credit-card-number, year-and-month-of-expiry, cvv of a card with insufficient balance and selects “sign-in” CTA and authorization fails

Then display “payment failed” error-message and reset the payment fields

Scenario 4: Unsuccessful authorization - Fraud

When the user enters the credit-card-number, year-and-month-of-expiry, cvv and selects “sign-in” CTA and authorization fails due to suspected fraud

Then display “error page” and keep the order on hold for ‘suspected fraud’

Scenario 5: Payment gateway connectivity problem

When the user enters the credit-card-number, year-and-month-of-expiry, cvv and selects “sign-in” CTA and connection to payment gateway fails

Then display “call customer service” message and reset the payment fields **Authentication**

Registration:

1. Create a signup page /signup
2. Add a url/controller/template /signup
3. /signup has a form, username, email, and password.
4. "Submit" button posts to /register
5. /register creates a new user

Login:

1. Create a login page /login
2. /login shows a form for username and password
3. "Submit" button posts to /login_user
4. /login_user uses the code below

Authenticate:

1. Create a new page that is only for logged in users. A members only page. Up to you what you want to show!
2. If the user is logged in, show the page.
3. If not, redirect the user to the login page

Logout:

1. Create a new url/controller for /logout
2. When /logout is called, redirect user to the home page

Items

1. Create a new Item Model with the following fields:

Name, Description, Price

2. Create several in the admin or shell
3. Create new routes and templates to show a listing of the items

/items ->shows all items

4. Create new route and template to show just one listing
5. Create more than 10 items

Pagination

1. Add pagination to the items listing page, show 10 items per page

Search

1. Add search box to items listing page, search uses GET and query params to generate new page. The search query uses the name and description fields.

Filter

1. Allow the user to filter items by price. Use GET and query params. Filter by a range of prices (0-50, 50-100, 100+).

Json API for Items

- Add a format query param handler to /items where if the format equals json, then the response is in json

Shopping cart/order

- Create a new Model called Order (This is the shopping cart!)

An order belongs to a user, and has multiple items. A user can have many orders. An order has a status column, which is an integer field:

- 1 - In shopping cart
- 2 - Purchased

Payment form

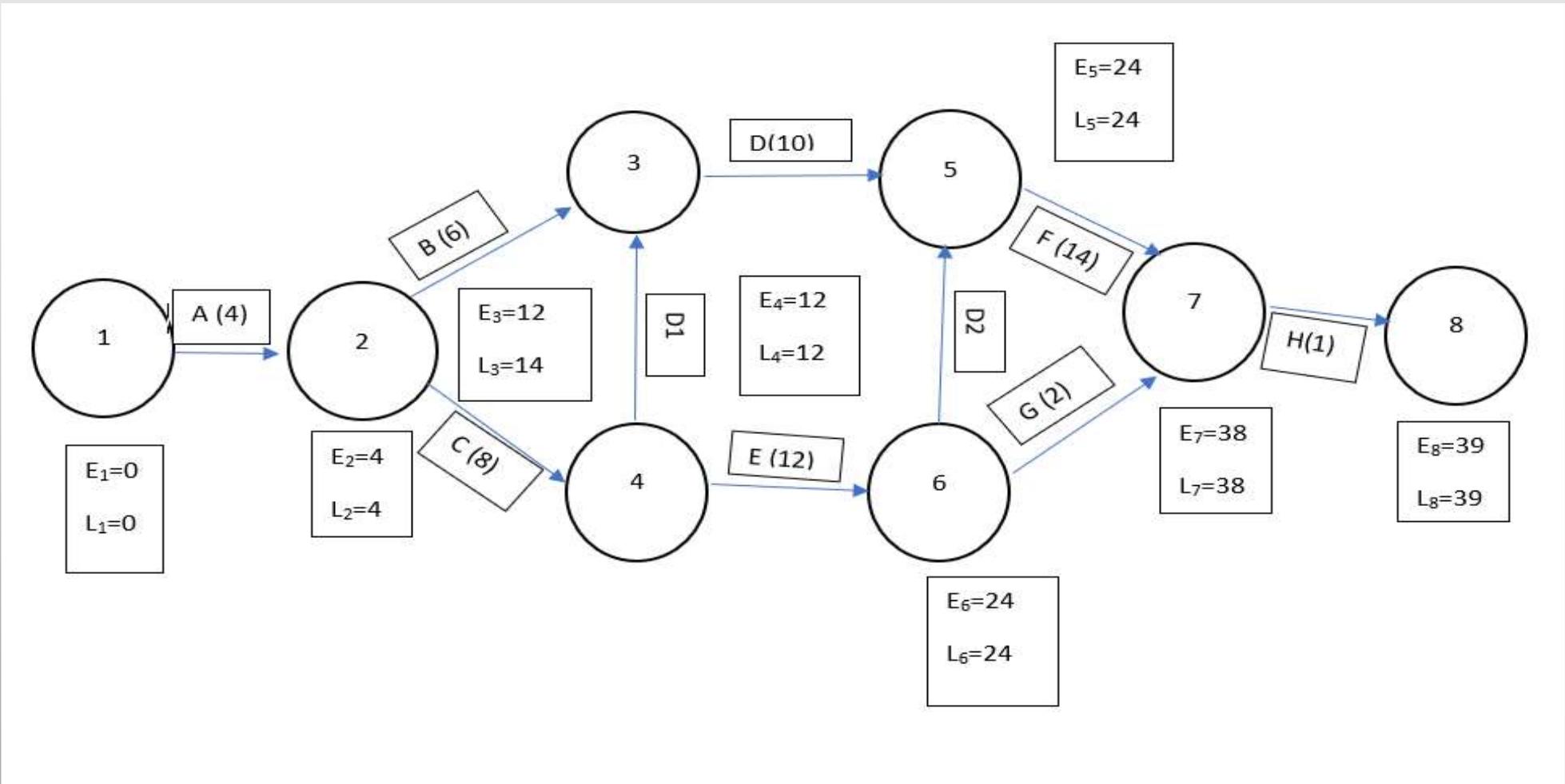
- Create a new route and template for /payments
- Create a form that allows the user to enter billing info
- On submit, the order id status changes to purchased.

Following durations are valid for each activity:
A=4 days; B=6 days; C=8 days; D=10 days; E=12 days F=14 days; G=2 days; H=1 days.

Activity	Duration(days)	Preceders
A	4	
B	6	A
C	8	A
D	10	B, C
E	12	C
F	14	D, E
G	2	C, E
H	1	F, G
Activity	Duration(days)	Preceders
A	4	
B	6	A
C	8	A
D	10	B, C
E	12	C
F	14	D, E
G	2	C, E
H	1	F, G

(A)

ACTIVITY ON NODE (AON) DIAGRAM :



Here D1 and D2 Dummy lines.

(B) FORWARD PASS, EARLY START (ES), EARLY FINISH (EF)

(b) FORWARD PASS:

To calculate earliest date on which each activity may be started and completed.

Earliest start (ES)

Early finish (EF) = ES + duration

Applying Forward Pass method:

$$E_1 = 0$$

$$E_2 = E_1 + t_1 = 0 + 4 = 4$$

$$E_3 = \text{Max} \{ E_i + t_{i,3} \mid i = 2, 4 \}$$

$$= \text{Max} \{ E_2 + t_{2,3}; E_4 + t_{4,3} \}$$

$$= \text{Max} \{ 4 + 6; 12 + 0 \}$$

$$= \text{Max} \{ 10; 12 \}$$

$$= 12$$

$$E_4 = E_2 + t_{2,4} \quad [t_{2,4} = C = 8] = 4 + 8 = 12$$

$$E_5 = \text{Max} \{ E_i + t_{i,5} \mid i = 3, 6 \}$$

$$= \text{Max} \{ 12 + 10; 24 + 0 \}$$

$$= 24$$

$$E_6 = E_4 + t_{4,6} \quad [t_{4,6} = E = 12] = 12 + 12 = 24$$

$$E_7 = \text{Max} \{ E_i + t_{i,7} \mid i = 5, 8 \}$$

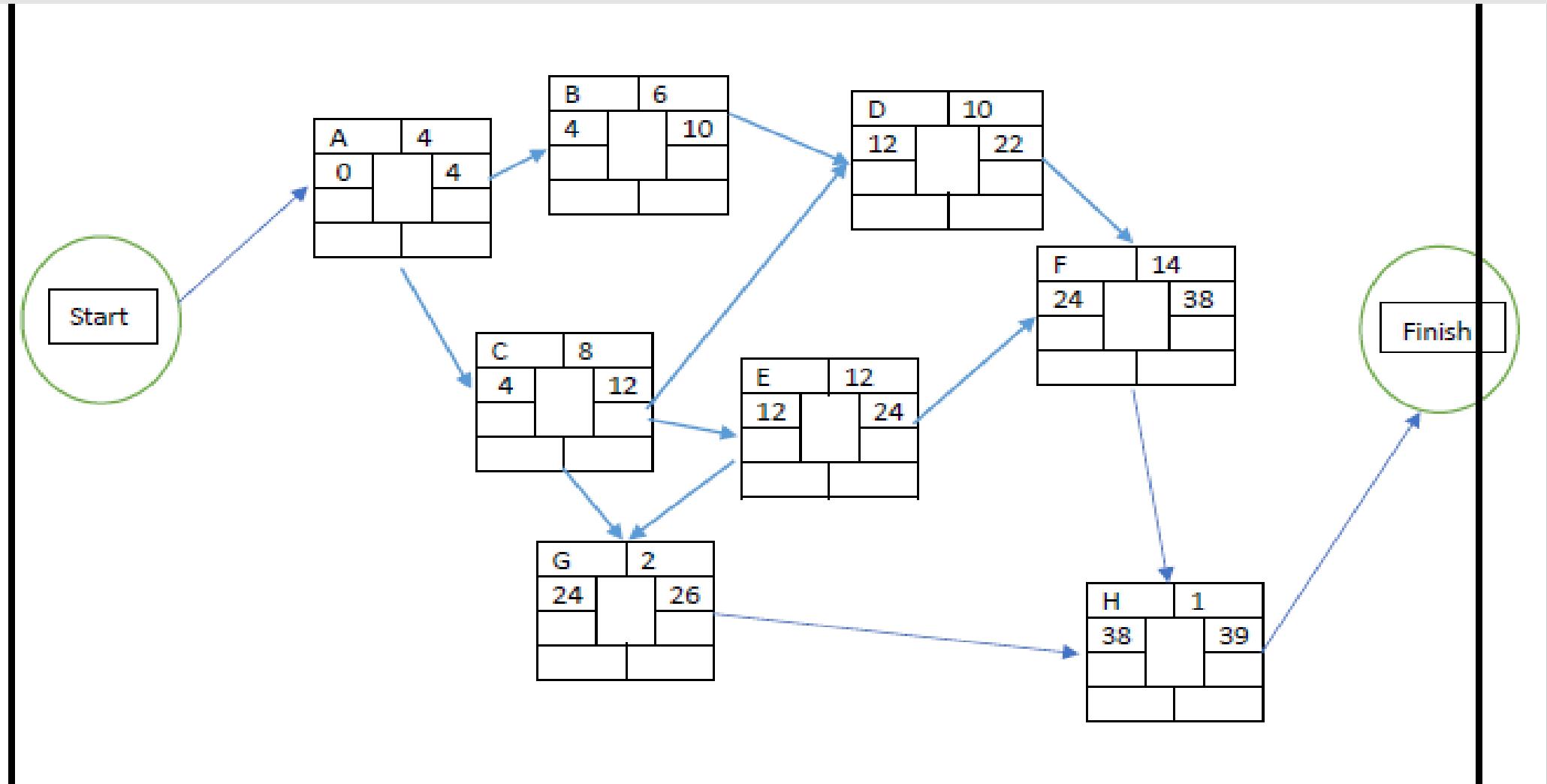
$$= \text{Max} \{ 24 + 14; 24 + 2 \}$$

$$= \text{Max} \{ 38; 26 \}$$

$$= 38$$

$$E_8 = E_7 + t_{7,8} \quad [t_{7,8} = H = 1] = 38 + 1 = 39$$

FORWARD PASS DIAGRAM :



(C) BACKWARD PASS, LATE START (LS), LATE FINISH (LF)

② Backward Pass:

$$L_8 = E_8 = 39$$

$$L_7 = L_8 - t_{7,8} [t_{7,8} = H=1] = 39 - 1 = 38$$

$$\begin{aligned} L_6 &= \min \{L_7 - t_{6,7}; L_5 - t_{6,5}\} \\ &= \min \{38 - 2; 24 - 0\} \\ &= \min \{36; 24\} \\ &= 24 \end{aligned}$$

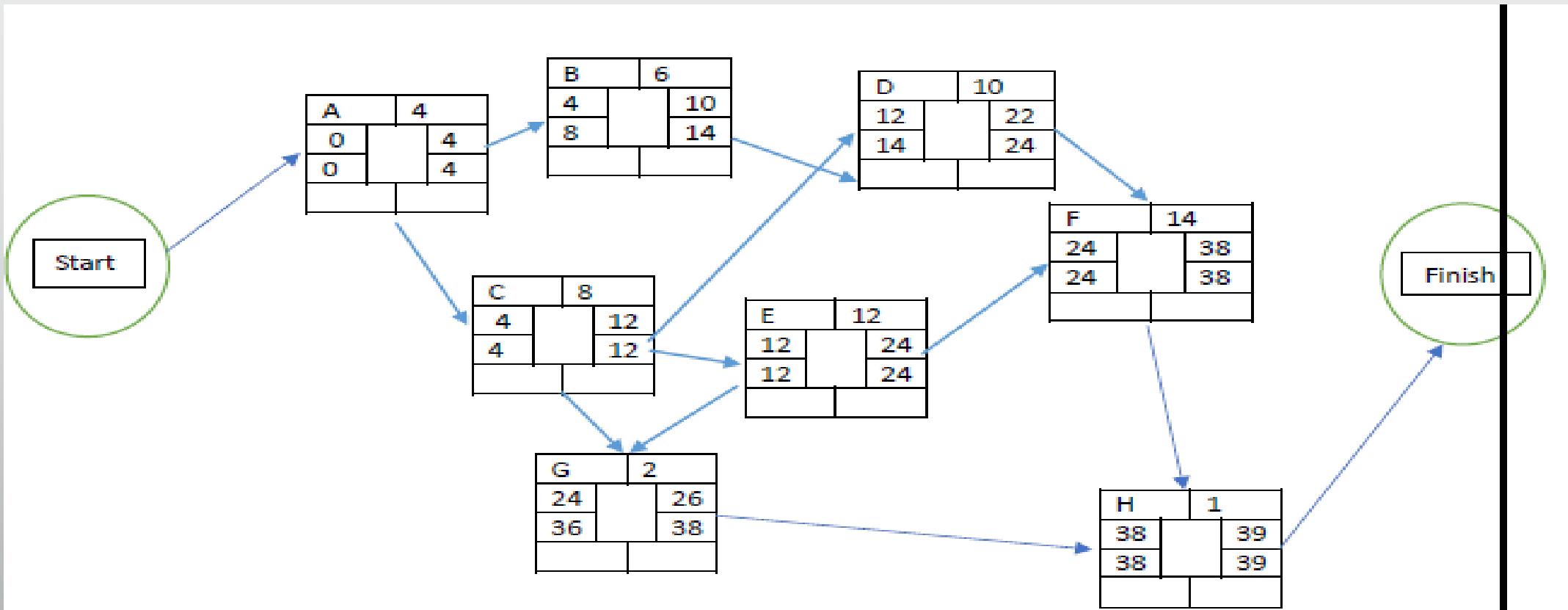
$$L_5 = L_7 - t_{5,7} [t_{5,7} = F=14] = 38 - 14 = 24$$

$$\begin{aligned} L_4 &= \min \{L_5 - t_{4,5} [j=63]\} \\ &= \min \{L_6 - t_{4,6}; L_3 - t_{4,3}\} \\ &= \min \{12; 14\} \\ &= 12 \end{aligned}$$

$$L_3 = L_5 - t_{3,5} [t_{3,5} = 0 = 10] = 24 - 10 = 14$$

$$\begin{aligned} L_2 &= \min \{L_5 - t_{2,5} [j=43]\} \\ &= \min \{L_4 - t_{2,4}; L_3 - t_{2,3}\} \\ &= \min \{4; 8\} \\ &= 4 \end{aligned}$$

$$L_1 = L_2 - t_{1,2} [t_{1,2} = A=4] = 4 - 4 = 0$$



**THIS IS A BACKWARD PASS DIAGRAM WITH CALCULATED
VALUES OF LATE START (LS) AND LATE FINISH (LF) FOR EACH
ACTIVITY**

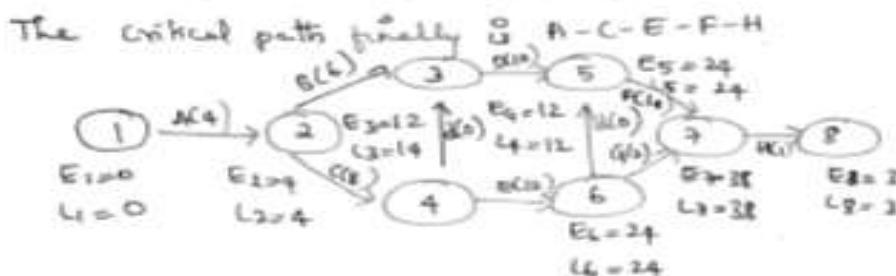
(D) FLOAT AND CRITICAL PATH :

(d) The critical path in the network diagram has been shown. This has been done by double lines by joining all those events where E-values and L-values are equal.

The critical path of the project is: 1-2-4-6-5-7-8
and the critical activities are A, E, C, D, F, H.
The total project time is 39.

Critical path includes all nodes with FLOAT=0

$$\text{FLOAT} = \text{LST} - \text{EST} \text{ (for critical path)}$$



NOTATION:

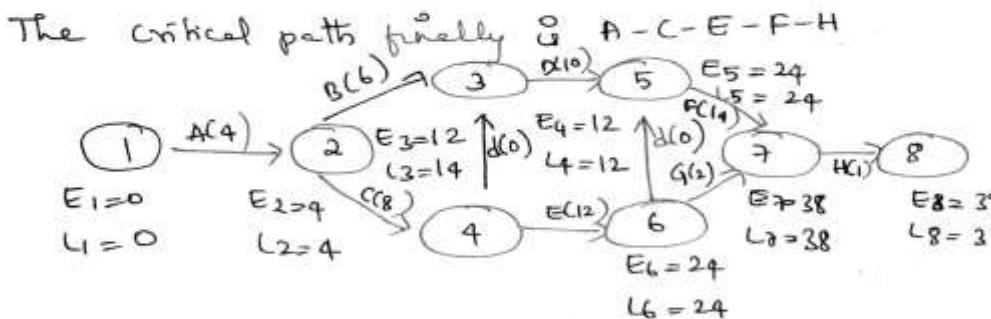
Activity Label		Duration
ES	Activity	EF
LS	duration	LF
Activity Span		Float

(d) The critical path in the network diagram has been shown. This has been done by double lines by joining all those events where E-values and L-values are equal.

The critical path of the project is: 1-2-4-6-5-7-8 and the critical activities are A, E, C, d, f, H. The total project time is 39.

Critical path includes all nodes with FLOAT = 0

$$\text{FLOAT} = \text{LST} - \text{EST} \text{ (for critical path)}$$



NOTATION:

Activity Label	Duration	
ES	Activity	EF
LS	descrip- -tion	LF
Activity Span		float

Float = ES - LS or EF - LF

Float Calculations:

For A:

$$\text{Float} = 0 - 0 = 0$$

For B:

$$\text{Float} = 4 - 8 = 4$$

For C:

$$\text{Float} = 4 - 4 = 0$$

For D:

$$\text{Float} = 12 - 14 = 2$$

For E:

$$\text{Float} = 12 - 12 = 0$$

For F:

$$\text{Float} = 24 - 24 = 0$$

For G:

$$\text{Float} = 24 - 36 = 12$$

For H:

$$\text{Float} = 38 - 38 = 0$$

$$\boxed{\text{Activity Span} = LF - ES}$$

Activity Span Calculations:

For A:

$$\text{Activity Span} = 4 - 0 = 4$$

For B:

$$\text{Activity Span} = 14 - 4 = 10$$

For C:

$$\text{Activity Span} = 12 - 4 = 8$$

For D:

$$\text{Activity Span} = 24 - 12 = 12$$

For E:

$$\text{Activity Span} = 24 - 12 = 12$$

For F:

$$\text{Activity Span} = 38 - 24 = 14$$

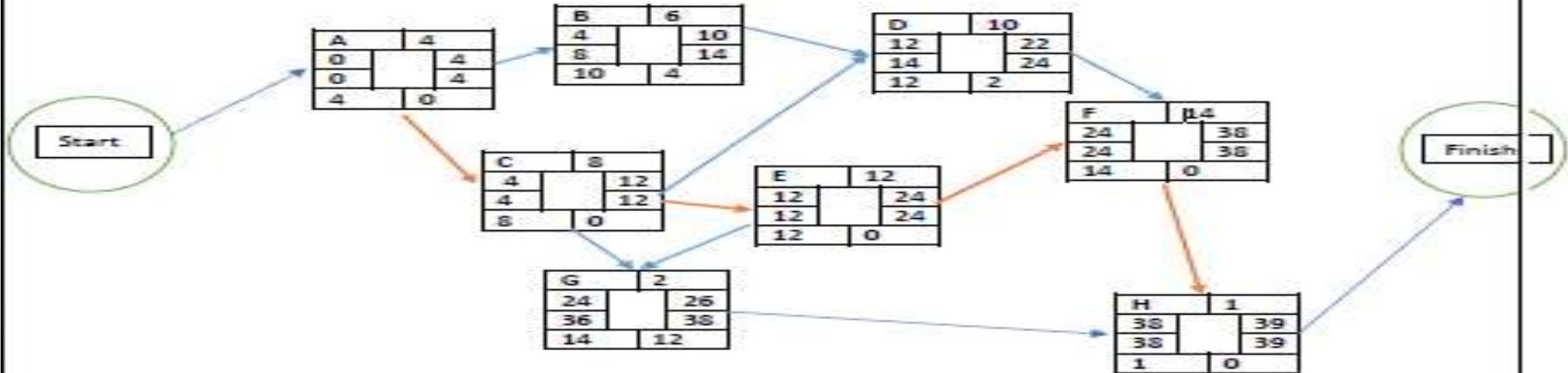
For G:

$$\text{Activity Span} = 38 - 29 = 14$$

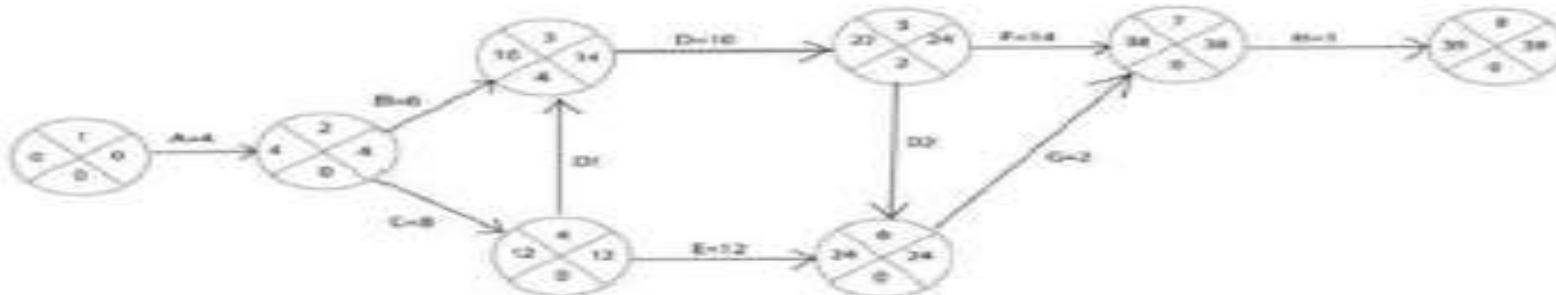
For H:

$$\text{Activity Span} = 39 - 38 = 1$$

DIAGRAM FOR FLOAT AND CRITICAL PATH



AOA DIAGRAM OF THIS PROJECT



Here D1 and D2 are Dummy lines

REVIEW 3

The critical path method is a technique that allows you to identify tasks that are necessary for project completion. The critical path in project management is the longest sequence of activities that must be finished on time to complete the entire project.

The actions taken by the project manager to avoid exceeding current length of the critical path

- Shorten the duration or work on a task on the critical path.
- Change a task constraint to allow for more scheduling flexibility.
- Break a critical task into smaller tasks that can be worked on at the same time by different resources.
- Revise task dependencies to enable more scheduling flexibility.
- Set lead time between dependent tasks where applicable.
- Schedule overtime.
- Assign additional resources to work on critical path tasks.

Effective Project Management tools can help you to manage the time more efficiently. As a Project manager , to avoid project delay we can certainly take steps to keep your project on track and mitigate the damage from delays that occur.

- ⊕ Set Realistic goals for Your Projects
- ⊕ Track the progress of the projects on proper interval
- ⊕ gathering the right people of respective project efficient skills
- ⊕ Scheduling the Project is an important Factor
- ⊕ Conducting a team meeting once in a week and discussing about project situation

As You can see that here if there is a delay in 5 weeks in completion the activity G, the project manager should have a solution to resolve it without exceeding the length of the planned critical path

FIVE POTENTIAL RISKS

TECHNICAL RISK :

The most common cases of data loss or theft stem from exposure to malware. Malicious software enters a machine through email attachments, downloads, infected websites, infected devices and more. Once inside, they can spy on a user's activities, redirect him to malicious portals, track keyboard inputs and perform other highly dangerous activities. Malware authors deliberately target such malware during times of high traffic, so as to get maximum exposure and hits.

When a user visits a site and makes an online purchase, his details entered are up for grabs. This is the prize that online attackers look for and makes their efforts worthwhile. These details can be acquired by an attacker either by phishing the user, or by hacking the server of a genuine site and stealing details. Once a cybercriminal has in-depth information such as Name, DOB, Contact details, Address and more, he can cause a huge financial dent in the victims account.

- secure computers, servers and wireless networks.
- secure your passwords.
- use anti-virus and anti-spyware protection, and firewalls.
- understand legal obligations for online shopping system.

COST AND OVERPAYMENT RISK :

Cost risk directly affects online consumer behavior and their intention to purchase. When consumer cost risk is high, the consumer intention to purchase online is low and when consumer cost risk is low, the consumer intention to purchase online is high.

Over the years, overpayment scams have become quite common. Usually, they depend on a seller's goodwill to give exemplary customer service. Scammers make a purchase and pay via an online transfer or check. They pay more than the original payable amount. Then, the scammer asks for the refund of the excess amount. In the urgency, the seller usually has no time to see that the online transaction/check did not go through. This kind of threat frequently links with fake order email scams which alert an online seller about the sale of an item and the money credited to an account by using an almost identical template of the confirmation email and sender address to the actual website.

- Use proper internet connection to avoid double payment.
- Check the product price twice before paying.
- Avoid fake duplication of products to be purchased. Original products will have legal and proper details with ratings.
- Use improved and reliable third party payment processor.

PRODUCT RISK :

Product risk is limited potential to examine the product. Online shopping is a risky way of shopping because in this way people cannot touch product they just rely on some graphics and ads.

The Internet is full of fake online stores and pages that trick people into purchasing products. The truth is, there are no products and they are not for delivery. These stores show great offers and lure people into buying their fake products. There have been various incidents where buyers never got what they ordered and spent money in the online transaction. Another reason for falling for this tactic is that these people make their sites appear as legitimate online stores. There are just slight changes in the name which are not that obvious and are easy to miss.

- Always order from reputable online stores which have a history of excellent customer service.
- See that they are following quality standards of customer satisfaction and security.
- Go through the customer comments and reviews before purchase.
- Know the hallmarks of the real product.
- Check the identity of the seller.

FINANCIAL RISK :

Financial risk refers to the loss in the monetary term associated with buying. It is a loss of money in a bad purchasing experience. Financial risk is the first major and big risk during buying online. In addition, it is also the strongest predictor of online shopping behavior. Financial risk play a major role in consumer decision making for buying online. Researchers reveal that financial risk is a money loss that possibly the fraud of credit card and discloses card information that's why people avoid buying online . It is also considered that the product price is not the lowest in comparison . Furthermore, the risk is problematic online buying process. Consumer faces financial risk in the early stage of shopping Credit card fraud is another common risk. Malicious_users intercept the online stores at the payment portal. Customers redirect to the malicious user's site instead of the legitimate payment gateway after making payment of the products. As the page looks identical to the gateway of the site they were shopping from, customers get confused. The malicious users then get their hands on the customers' credit card details and use it for themselves.

- Make sure that a site is using a secure protocol for sharing information in an encrypted way.
- Use trusted website for using online payment.
- Cross check twice, as hackers spy the credit card details .
- Set strong passwords.
- Sign up for transaction alerts.

PRIVATE RISK :

In globalization with the growth of online shopping privacy risk also increases. Privacy risk refers to possible loss of personal information, in other words, use without approval Privacy risk is a very important risk considered in online shopping behavior. Furthermore, it is a big challenge for customers. In addition, during online shopping, customers must provide some information about their personal credit card, name, address, etc, and unethically use of this information due to these matters consumers reluctant to buy online. Privacy risk increases uncertainty and a significant influence on the frequency of online shopping behavior.

In addition, people react diversely for privacy risk due to different reasons such as in different Privacy risk has a significant negative relationship with online shopping behavior, culture people react different, external situations like past experience. Privacy risk influence on online shopping behavior is not clear and still interesting for the researcher so, in this study, take privacy risk with online shopping behavior.

- Make sure your software and anti-virus protection is up-to-date. Updates often contain changes that help protect you and your devices from scammers and online criminals.
- Only use reputable websites when making purchases.
- Don't use public WiFi, never send personal information through email. Always choose strong passwords for your online accounts, using a combination of upper case, lower case, number and special characters.