

CS 301

Requirements Use Case

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Characteristics of Use Case

- ❑ Only one goal
- ❑ A single starting point
- ❑ A single ending point
- ❑ Multiple paths for getting from start to finish
 - ❑ i.e. Specify behavior for a variety of possible conditions
 - ❑ Each conditions may require specific action(s)

Characteristics of Use Case

☐ Only one goal

Find Square Root of X

**Plot minimum path between
Lat Long Points**

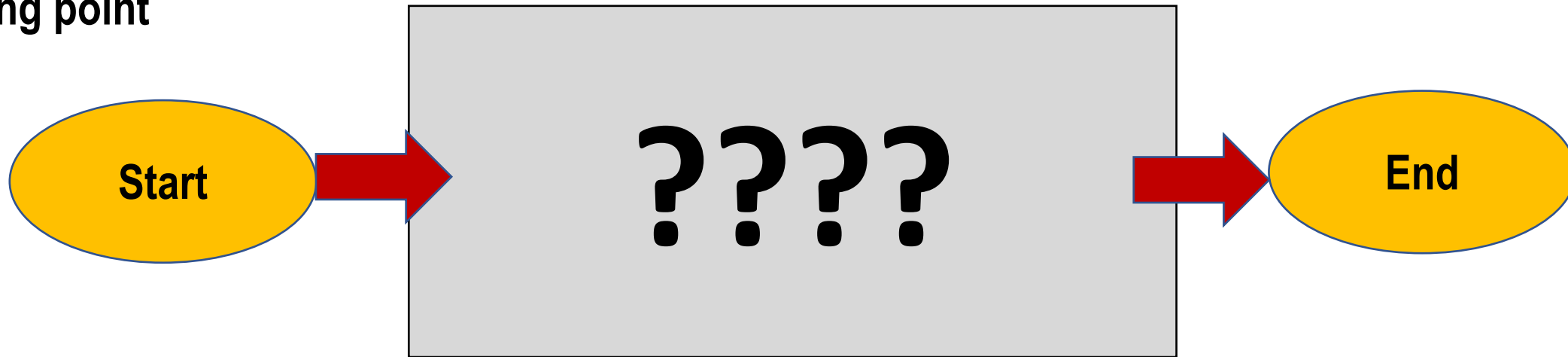
Process entry at gate

**Do Risk Rating of the
proposed Loan**

Characteristics of Use Case

Plot minimum path between
Lat Long Points

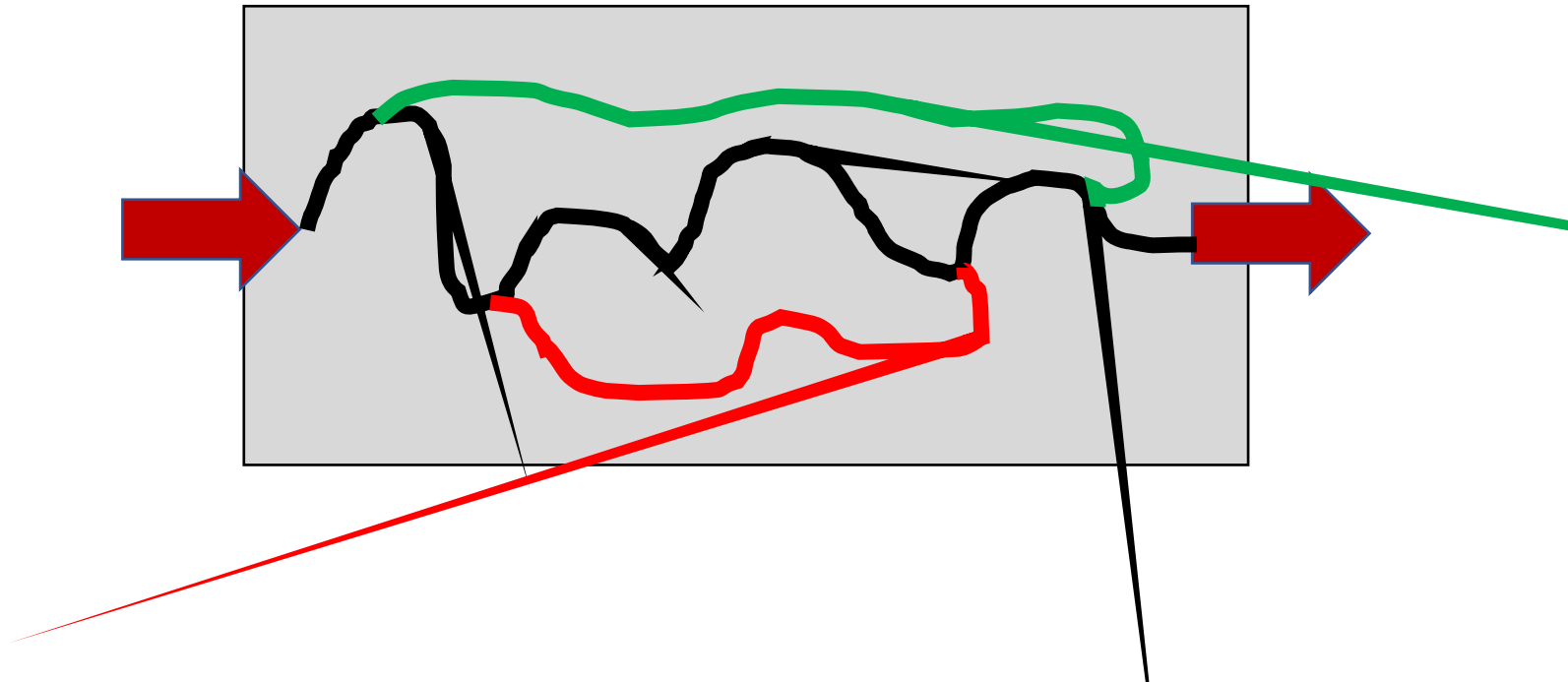
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https://commons.wikimedia.org/wiki/File:ATM_machines_in_Siam_Paragon.jpg

Use Case Specification

<https://www.visual-paradigm.com/guide/use-case/what-is-use-case-specification/>

Use Case Name: Withdraw Cash

Actor(s): Customer (primary), Banking System (secondary)

Summary Description: Allows any bank customer to withdraw cash from their bank account.

Priority: Must Have

Status: Medium Level of details

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☐ Pre-Condition:

- ☐ The bank customer has a card to insert into the ATM
- ☐ The ATM is online properly

☐ Post-Condition(s):

- ☐ The bank customer has received their cash (and optionally a receipt)
- ☐ The bank has debited the customer's bank account and recorded details of the transaction

Basic Path

1. The customer enters their card into the ATM
2. The ATM verifies that the card is a valid bank card
3. The ATM requests a PIN code
4. The customer enters their PIN code
5. The ATM validates the bank card against the PIN code
6. The ATM presents service options including "Withdraw"
7. The customer chooses "Withdraw"
8. The ATM presents options for amounts
9. The customer selects an amount or enters an amount
0. The ATM verifies that it has enough cash in its hopper
11. The ATM verifies that the customer is below withdraw limits
12. The ATM verifies sufficient funds in the customer's bank account
13. The ATM debits the customer's bank account
14. The ATM returns the customer's bank card
15. The customer takes their bank card
16. The ATM issues the customer's cash
17. The customer takes their cash

Alternative Paths

2a. Invalid card
2b. Card upside down
5a. Stolen card
5b. PIN invalid
10a. Insufficient cash in the hopper
10b. Wrong denomination of cash in the hopper
11a. Withdrawal above withdraw limits
12a. Insufficient funds in customer's bank account
14a. Bank card stuck in machine

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14. The ATM returns the customer's bank card
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16. The ATM issues the customer's cash
17. The customer takes their cash

15a. Customer fails to take their bank card

16a. Cash stuck in machine

17a. Customer fails to take their cash

Oa ATM cannot communicate with Banking System

Ob Customer does not respond to ATM prompt

Alternative Paths

11. The ATM verifies that the customer is below withdraw limits
12. The ATM verifies sufficient funds in the customer's bank account
13. The ATM debits the customer's bank account
14. The ATM returns the customer's bank card
15. The customer takes their bank card
16. The ATM issues the customer's cash
17. The customer takes their cash

Let the flow be simple.

Let the exceptions be simple^r.

Adapted with permission from

Keep it Simple , By
NEEHARIKA GUPTA

15a. Customer fails to take their bank card

16a. Cash stuck in machine

17a. Customer fails to take their cash

Oa ATM cannot communicate with Banking System

Ob Customer does not respond to ATM prompt

Business Rules

- ☐ B1: Format of PIN
- ☐ B2: Number of PIN retries
- ☐ B3: Service options
- ☐ B4: Amount options
- ☐ B5: Withdraw limit
- ☐ B6: Card must be taken away before dispense of cash



4 digit
5 digit

Business Rules

- ☐ B1: Format of PIN
- ☐ B2: Number of PIN retries
- ☐ B3: Service options
- ☐ B4: Amount options
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3 tries

2 tries

Business Rules

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Withdrawal
Check Balance

Business Rules

- ☐ B1: Format of PIN
- ☐ B2: Number of PIN retries
- ☐ B3: Service options
- ☐ B4: Amount options
- ☐ B5: Withdraw limit
- ☐ B6: Card must be taken away before dispense of cash



100,500,2000

Business Rules

- ☐ B1: Format of PIN
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- ☐ B3: Service options
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Is there a limit?

Business Rules

- ☐ B1: Format of PIN
- ☐ B2: Number of PIN retries
- ☐ B3: Service options
- ☐ B4: Amount options
- ☐ B5: Withdraw limit
- ☐ B6: Card must be taken away before dispense of cash



What happens?

Non-Functional Requirements

- ☐ NF1: Time for complete transaction
- ☐ NF2: Security for PIN entry
- ☐ NF3: Time to allow collection of card and cash
- ☐ NF4: Language support
- ☐ NF5: Blind and partially blind support



30 seconds
20 seconds

Non-Functional Requirements

- ☐ NF1: Time for complete transaction
- ☐ NF2: Security for PIN entry
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- ☐ NF5: Blind and partially blind support



Show masked

Non-Functional Requirements

- ☐ NF1: Time for complete transaction
- ☐ NF2: Security for PIN entry
- ☐ NF3: Time to allow collection of card and cash
- ☐ NF4: Language support
- ☐ NF5: Blind and partially blind support



20 seconds
30 seconds
After that?

Non-Functional Requirements

- ☐ NF1: Time for complete transaction
- ☐ NF2: Security for PIN entry
- ☐ NF3: Time to allow collection of card and cash
- ☐ NF4: Language support
- ☐ NF5: Blind and partially blind support



Language options
Ask when?

Non-Functional Requirements

- ☐ NF1: Time for complete transaction
- ☐ NF2: Security for PIN entry
- ☐ NF3: Time to allow collection of card and cash
- ☐ NF4: Language support
- ☐ NF5: Blind and partially blind support



Braille
Audio support

Use Case Contents

Use-case field	Description
Use case name	An active verb phrase that describes a particular task.
Subject area	A use role or other grouping mechanism that can be used to group use cases.
Business event	A trigger that stimulates activity within the business. Many business events occur at the interface point between the business and one of the external entities with which it interacts. Business events must be observable.
Actors	The actor that initiates this use case and all users who participate in this use case.
Use case overview	A description of the overall scope and content of the use case.
Preconditions	Constraints that must be met for the use case to be taken by the solution developer and used to create a workflow. This might include a required sequencing of use cases. For example, one or more other use cases might need to be performed successfully for this use case to begin.

Use Case Contents

Use-case field	Description
Termination outcome	A list of the successful and unsuccessful ways this use case might end. What are the possible ending results?
Condition affecting termination outcome	A list of the conditions under which the corresponding termination outcome occurs.
Use case description	A brief description of events for the most likely termination outcome. List the actions the actor does and how the system responds.
Use case associations	A list of other use cases that are associated with this use case.
Traceability to	A list of other related documents, models, and products that are associated with this use case.
Input summary	A brief summary that lists the data input by the actor.
Output summary	A brief summary that lists the data output by the system.
Usability index	A number based on how this use case ranked in terms of satisfaction, importance, and frequency.
Use case notes	Information that is not directly part of this use case - developer needs to know

Benefits of Stories

- ❑ Stories keep the focus on the user
- ❑ Stories enable collaboration
- ❑ Stories drive creative solutions
- ❑ Stories create momentum

Writing User Stories

- ❑ Definition of “done”
- ❑ Outline subtasks or tasks
- ❑ User personas
- ❑ Ordered Steps
- ❑ Listen to feedback
- ❑ Time
- ❑ Make stories visible

“As a [Time Sheet Manager], I [want to enter data as quickly as possible], [so that I can generate Time Sheet analysis within acceptable duration].”

Writing User Stories

- ☐ As a seasoned user, I want a way the application to remember my preferences to navigate more smoothly
- ☐ As a frequent use of reports, I want a system to keep track of frequently used reports and allow me to generate easily
- ☐ As an online purchaser, I expect my information to be saved to create a more streamlined checkout experience.
- ☐ As an app user I want a way to digest relevant information in the quickest way possible.