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# **Stereotypes**

UseCase					
Tagged Value Definitions	Level				
	Туре	Enumeration			
	Enumeration Values	Summary, User, Subfunction			
	Complexity				
	Туре	Enumeration			
	Enumeration Values	Low, Medium, High			
	Use Case Status				
	Туре	Enumeration			
	Enumeration Values	Name Only, Initial, Base, Complete, Deferred			
	Implementation Status	Implementation Status			
	Туре	Enumeration			
	Enumeration Values	Scheduled, Started, Partially Complete, Complete, Partially Deferred			
	Preconditions				
	Туре	Multi-line Text			
	Post-conditions				
	Туре	Multi-line Text			
	Author				
	Туре	Text			
	Assumptions				
	Туре	Multi-line Text			

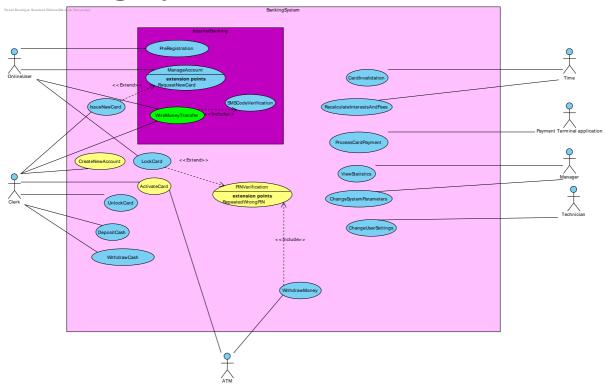
requirement						
Tagged Value Definitions	Text					
	Туре	HTML				
	ID .					
	Туре	Text				
	source					
	Туре	Text				
	kind	kind				
	Туре	Enumeration				
	Enumeration Values Functional, Performance, Interface					
	verifyMethod					
	Туре	Enumeration				
	Enumeration Values	Analysis, Demonstration, Inspection, Test				
	risk					
	Туре	Enumeration				
	Enumeration Values	High, Medium, Low				
	status					
	Туре	Enumeration				
	Enumeration Values	Proposed, Approved, Rejected, Deferred, Implemented, Mandatory, Obsolete				

#### Include

Extend

### Use Case Diagram

# **Banking System**



## **Summary**

Name	Documentation
₹ OnlineUser	
₹ Clerk	
₹ ATM	
₹ Time	
Payment Terminal application	
🚶 Manager	
🚶 Technician	
DepositCash	
UnlockCard	
LockCard	
PINVerification	
	Use Case 1
	Brief UC1 verifies the PIN number of card
	Description
	Primary ATM
	Actors
	Secondar Customer
	Actors

	Precondit	Card is activated and unlocked
	ions	3.100.00
	Main	
	Main Flow of Events	<ol> <li>UC is evoked when card is inserted into ATM</li> <li>WHILE number of attempts &lt;= 3 AND access is not allowed</li> <li>System prompts the user to enter PIN code</li> <li>User enters PIN code into ATM</li> <li>System compares PIN code to database entry</li> <li>IF PIN matches database entry</li> <li>Allow ATM to access user data</li> <li>IF access is not allowed</li> <li>extension point(LockCard)</li> </ol>
	Alternativ	, , ,
	Flows	
	III	ATM has access to user data or the card is locked
IssueNewCard		
CardInvalidation		
ActivateCard		
, ouvalocard	Use Case	2
		UC2 activates the card
	Description	
	Primary Actors	Clerk, ATM
	Secondar Actors	
	ions	Card is not activated
	Main Flow of Events	<ol> <li>UC is evoked when card activation is requested</li> <li>Actor enters card information</li> <li>Specified card is marked as active in database</li> </ol>
	Alternativ Flows	Card does not exists or is not valid
	Post-con ditions	Card is activated
WithdrawMoney		
WithdrawCash		
_		
SMSCodeVerification		

ManageAccount	Includes transfer history and card requests		
WireMoneyTransfer		1 12	
CreateNewAccount			
	Use Case	3	
	ID		
	III	UC3 creates new account	
	Description		
	11	Clerk	
	Actors Secondary	Cuatamar	
	Actors	Customer	
	Precondit		
	ions		
	Main	UC is evoked when customer requests	
	Flow of	opening an account	
	Events	Customer presents his/her personal ID	
		3. IF customer didn't pre-register online	
		<ul><li>3.1. Clerk fills in customer's personal data</li><li>3.2. Clerk fills in requested account type</li></ul>	
		3.2. Clerk fills in requested account type 3.3. Clerk fills in requested currency	
		Customer signs the documents	
		5. IF customer is not registered in the bank	
		yet	
		5.1. Clerk creates new user account for the	
		customer	
		5.2. System saves the new user account	
		System saves the newly created bank     account in database	
		7. Bank account is assigned to customer's	
		user account	
		8. Account login information is given to	
		customer	
	Alternative	e	
	Flows	A coount is expected	
	ditions	Account is created	
	ditions.		
PreRegistration			
ChangeUserSettings			
ChangeSystemParameters			
ViewStatistics			
ProcessCardPayment			
RecalculateInterestsAndFees			
InternetBanking			
BankingSystem			
<b>D</b>	•		

### **Documentation**

#### **Functional Requirements**

- FR001 A clerk will be able to create an account for a customer using customer's ID.
- FR002 A customer will be able to pre-fill a registration form online and and then, visiting a bank, a clerk will be able to finish the account creation using the form.
- FR003 Only when creating an account a customer will be able to choose a type of the account (current or saving account), account currency (CZK or EUR).
- FR004 A timer will be periodically (at the end of the month) computing fees and interests for the past month.
- FR005 A clerk will be able to set a money transfer after a customer's request.
- FR006 A customer can set a money transfer using a online interface (internet banking).
- FR007 Every online money transfer must be authorized by a code which will be sent to the user's cell phone via SMS
- FR008 Every transaction code is valid for 5 minutes
- FR009 Transaction is canceled if wrong code is submitted 3 times
- FR010 A client can view his/her transfer history using the internet banking.
- FR011 Card payments at shops or online will be processed by the external system.
- FR012 Money in cash can be deposited or withdrawn in person at the bank's cash desk, served by bank cashier.
- FR013 Money in cash can be withdrawn from an ATM using a card.
- FR014 Card can be delivered to a customer by post (including authorization PIN sent separately) or he/she can pick it up at the bank.
- FR015 The card can be only activated by a clerk or through an ATM.
- FR016 Card has a validity date. After the date the card will be invalidated.
- FR017 Card can by blocked by a customer through online banking.
- FR018 A clerk can unblock a card that is blocked.
- FR019 Bank managers can view system statistics.
- FR020 Bang managers can change system parameters.
- FR021 Technicians can maintain the system and change user settings.

#### **Non-Functional Requirements**

- NFR001 Every ATM has a working connection to the bank server.
- NFR002 SMS authorization code will be sent in less than 30s after request.
- NFR003 Card activation and lock/unlock has to take effect in less than a minute after request.
- NFR004 A transaction details must be available for up to 10 years after transaction.
- NFR005 There must be a redundant copy of every server and connection element.
- NFR006 In case of hardware failure, system must switch to the redundant copy in less than 30s.
- NFR007 Every bank employee is authenticated using a USB token and a password.
- NFR008 Creating a new account can take up to 24h.
- NFR009 All system preferences and user data changes has to be saved as separate revisions in case of rollback.
- NFR010 An internal money transfer has to be completed in less than a day. A money transfer to any other bank has to be completed in less than a week.

### **Details**





- ₽ ATM
- **₹** Time
- Payment Terminal application
- Manager
- **Rechnician**
- DepositCash
- UnlockCard
- LockCard
- PINVerification

#### **Extension Points**

#### RepeatedWrongPIN

- IssueNewCard
- CardInvalidation
- ActivateCard
- WithdrawMoney
- WithdrawCash
- SMSCodeVerification
- ManageAccount

#### **Extension Points**

#### RequestNewCard

- WireMoneyTransfer
- CreateNewAccount
- PreRegistration
- ChangeUserSettings
- ChangeSystemParameters

- ViewStatistics
- ProcessCardPayment
- RecalculateInterestsAndFees
- InternetBanking

#### Children

Name	Documentation
ManageAccount	Includes transfer history and card requests
PreRegistration	
WireMoneyTransfer	
SMSCodeVerification	

### BankingSystem

### Children

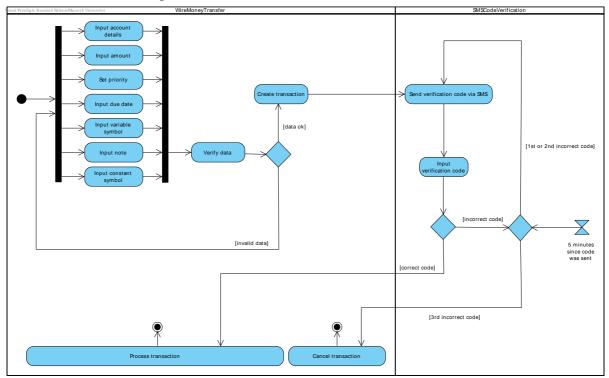
Name	Documentat	ion	
RecalculateInterestsAndFees			
ProcessCardPayment			
ViewStatistics			
ChangeSystemParameters			
ChangeUserSettings			
CreateNewAccount			
	Use Case ID		
	Brief Description	UC3 creates new account	
		Clerk	
	Actors		
	Secondar	Customer	
	Actors		
	Precondit		
	ions		
	Main	UC is evoked when customer requests	
	Flow of	opening an account	
	Events	2. Customer presents his/her personal ID	
		<ul> <li>3. IF customer didn't pre-register online</li> <li>3.1. Clerk fills in customer's personal data</li> <li>3.2. Clerk fills in requested account type</li> <li>3.3. Clerk fills in requested currency</li> <li>4. Customer signs the documents</li> <li>5. IF customer is not registered in the bank yet</li> <li>5.1. Clerk creates new user account for the customer</li> </ul>	

	Alternativ Flows Post-con ditions	5.2. System saves the new user account 6. System saves the newly created bank account in database 7. Bank account is assigned to customer's user account 8. Account login information is given to customer  e  Account is created
WithdrawCash		
WithdrawMoney		
ActivateCard	-	
- i divato da la	Use Case ID Brief	UC2 activates the card
	Description	
	Primary Actors	Clerk, ATM
	Secondar Actors	Customer
	Precondit ions	Card is not activated
	Main Flow of Events	<ol> <li>UC is evoked when card activation is requested</li> <li>Actor enters card information</li> <li>Specified card is marked as active in database</li> </ol>
	Alternativ Flows	£ard does not exists or is not valid
		Card is activated
CardInvalidation		
IssueNewCard	+	
PINVerification		
	Use Case ID	1
	Brief Description	UC1 verifies the PIN number of card
	Primary Actors	АТМ
	Secondar Actors	Customer

I In the	<u> </u>		
Precondition	dit Card is activated and unlocked		
ions			
Main			
Flow of Events	<ol> <li>UC is evoked when card is inserted into ATM</li> <li>WHILE number of attempts &lt;= 3 AND access is not allowed</li> <li>System prompts the user to enter PIN code</li> <li>User enters PIN code into ATM</li> <li>System compares PIN code to database entry</li> <li>IF PIN matches database entry</li> <li>Allow ATM to access user data</li> <li>IF access is not allowed</li> <li>extension point(LockCard)</li> </ol>		
Alternativ	40		
Flows			
Post-con	ATM has access to user data or the card is		
ditions	locked		
LockCard			
UnlockCard			
DepositCash			

### **Activity Diagram**

# WireMoneyTransfer



### **Summary**

Name	Documentation
₩ Swimlane	Documentation
ш	
SMSCodeVerification	
Input account details	
☐ Input amount	
Set priority	
☐ Input due date	
Input variable symbol	
☐ Input note	
Input constant symbol	
Verify data	
Create transaction	
Send verification code via SMS	
Input verification code	
Cancel transaction	
Process transaction	
≥ 5 minutes since code was sent	

### **Details**

# Swimlane Activity Partitions

WireMoneyTransfer					
Quality Score	Fair	Fair			
Quality Reason	Problem		Suggestion		
	Name does not contain gloss	sary terms	Define name as term in glossary		
Contained Elements	Name	Docum	Documentation		
	<ul><li>N/A</li></ul>				
	→I N/A				
	Input account details				
	Input amount				
	Set priority				
	Input due date				
	Input variable symbol				
	Input note				
	<b>ൂ→</b> N/A				
	Create transaction				
	Input constant symbol				
	Cancel transaction				
	Process transaction				
	N/A				
	N/A				
	Verify data				
	<b>→</b> C N/A				

SMSCodeVerification					
Quality Score	Fair				
Quality Reason	Problem		Suggestion		
	Name does not contain glossary terms		Define name as term in glossary		
Contained Elements	Name	Documentation			
	Input verification code				
	<b>₩</b> N/A				
	<b>¾</b> \$ N/A				
	Send verification code via				
	5 minutes since code was sent				



- Input account details
- Input amount
- Set priority
- Input due date
- Input variable symbol
- **■Input note**
- Input constant symbol
- **≱N/A**
- Verify data
- **¾**KN/A
- Create transaction
- Send verification code via SMS
- Input verification code
- **¾** N/A
- **¾**SN/A
- Cancel transaction
- N/A
- Process transaction
- N/A
- 5 minutes since code was sent