CS132: Software Engineering

Traceability

Banking System

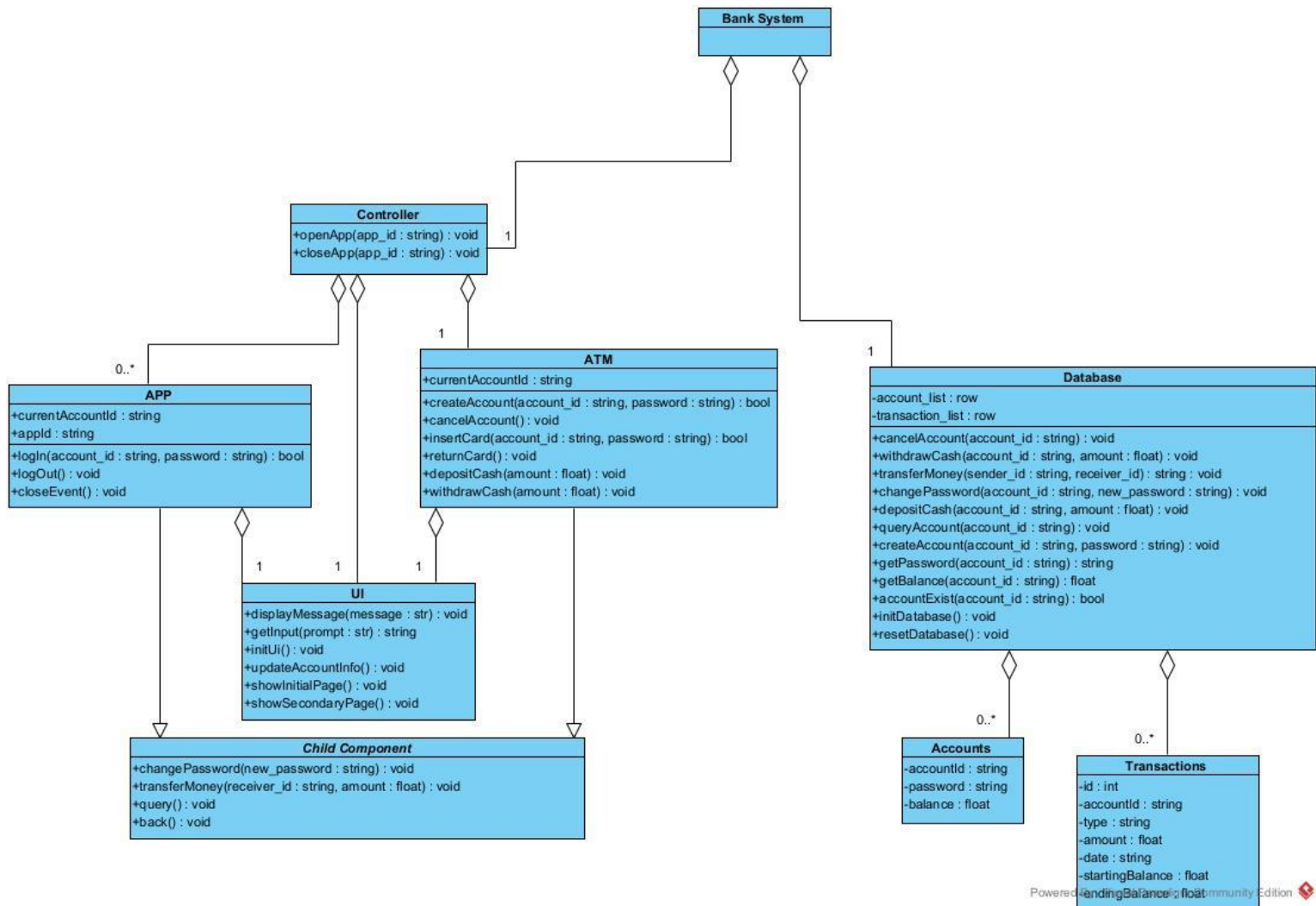Group 15

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Catalogue

System Architecture

The system architecture is shown below:

Bank System

Controller
+openApp(app_id : string) : void
+closeApp(app_id : string) : void

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APP
+currentAccountId : string
+appId : string
+logIn(account_id : string, password : string) : bool
+logOut() : void
+closeEvent() : void

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ATM
+currentAccountId : string
+createAccount(account_id : string, password : string) : bool
+cancelAccount() : void
+insertCard(account_id : string, password : string) : bool
+returnCard() : void
+depositCash(amount : float) : void
+withdrawCash(amount : float) : void

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UI
+displayMessage(message : str) : void
+getInput(prompt : str) : string
+initUi() : void
+updateAccountInfo() : void
+showInitialPage() : void
+showSecondaryPage() : void

Database
-account_list : row
-transaction_list : row
+cancelAccount(account_id : string) : void
+withdrawCash(account_id : string, amount : float) : void
+transferMoney(sender_id : string, receiver_id) : string : void
+changePassword(account_id : string, new_password : string) : void
+depositCash(account_id : string, amount : float) : void
+queryAccount(account_id : string) : void
+createAccount(account_id : string, password : string) : void
+getPassword(account_id : string) : string
+getBalance(account_id : string) : float
+accountExist(account_id : string) : bool
+initDatabase() : void
+resetDatabase() : void

Child Component
+changePassword(new_password : string) : void
+transferMoney(receiver_id : string, amount : float) : void
+query() : void
+back() : void

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Accounts
-accountId : string
-password : string
-balance : float

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Transactions
-id : int
-accountId : string
-type : string
-amount : float
-date : string
-startingBalance : float
-endingBalance : float

Software Traceability

Requirement	Is implemented by	Is validated by
R1	S2.1, S2.8, S2.2, S2.9, S2.4, S2.5	V1.1, V2.1,
R1.1	S2.1	V1.1.1, V1.1.13, V2.1, V4.1.1, V4.1.2
R1.1.1	S2.1.1	V1.1.1, V2.1, V4.1.1
R1.1.2	S2.1.1	V2.1, V1.1.13
R1.1.3	S2.1.2	V1.1.1
R1.1.4	S2.1.3	V4.1.3
R1.2	S2.8	V1.1.10, V2.1, V4.1.3
R1.2.1	S2.8.1	V1.1.10, V2.1
R1.2.2	S2.8.2	V1.1.10, V2.1
R1.2.3	S2.8.3	V4.1.3
R1.3	S2.2	V1.1.3, V4.1.3, V2.1
R1.3.1	S2.2.1, S2.2.2	V1.1.3, V2.1
R1.3.2	S2.2.3	V4.1.3, V2.1
R1.4	S2.9	V1.1.5, V4.1.3, V2.1
R1.5	S2.4	V1.1.4, V2.1
R1.5.1	S2.4.1	V1.1.4, V2.1
R1.5.2	S2.4.1	V1.1.4, V2.1
R1.5.3	S2.4.1	V1.1.4, V2.1
R1.5.4	S2.4.2	V1.1.4, V2.1
R1.5.5	S2.4.2	V4.1.3
R1.6	S2.5	V1.1.9, V2.1, V4.1.3
R1.6.1	S2.5.1	V1.1.9, V2.1
R1.6.2	S2.5.1	V1.1.9, V2.1
R1.6.3	S2.5.1	V1.1.9, V2.1
R1.6.4	S2.5.1	V1.1.9, V2.1
R1.6.5	S2.5.2	V1.1.9, V2.1
R1.6.6	S2.5.2	V4.1.3
R2	S3.1, S3.5, S3.6	V1.1, V2.2, V4.1.3
R2.1	S3.1	V1.1.2, V2.2, V4.1.3
R2.1.1	S3.1.1, S3.1.2	V1.1.2, V2.2
R2.1.2	S3.1.1	V1.1.2, V2.2
R2.1.3	S3.1.3	V1.1.2, V2.2
R2.1.4	S3.1.3	V4.1.3
R2.2	S3.5	V1.1.6, V4.1.2
R2.3	S3.6	V1.2.3, V2.2
R3	S2.3, S2.6, S2.7, S3.2, S3.3, S3.4	V1.1, V2
R3.1	S3.4, S2.7	V1.1.7, V2.1, V2.2

R3.1.1	S2.7.1, S3.4.1	V1.1.7,V2.1,V2.2
R3.1.2	S2.7.1, S3.4.1	V1.1.7,V2.1,V2.2
R3.1.3	S2.7.1, S3.4.1	V1.1.7,V2.1,V2.2
R3.1.4	S2.7.2, S3.4.2	V1.1.7,V2.1,V2.2
R3.1.5	S2.7.2, S3.4.2	V1.1.7,V2.1,V2.2
R3.1.6	S2.7.2, S3.4.2	V4.1.3
R3.2	S3.3, S2.6	V1.1.8,V2.3
R3.2.1	S2.6.2, S3.3.2	V1.1.8,V2.3
R3.2.2	S2.6.1, S3.3.1	V1.1.8,V2.3
R3.2.3	S2.6.2, S3.3.2	V1.1.8,V2.3
R3.2.4	S2.6.3, S3.3.3	V1.1.8,V2.3
R3.2.5	S2.6.3, S3.3.3	V1.1.8,V2.3
R3.2.6	S2.6.3, S3.3.3	V1.1.8,V2.3
R3.2.7	S2.6.1, S3.3.1	V4.1.3
R3.3	S3.2, S2.3	V1.1.12,V2
R3.3.1	S3.2.1, S2.3.1	V1.1.12,V2
R3.3.2	S3.2.2, S2.3.2	V1.1.12,V2
R3.3.3	S3.2.1, S2.3.1	V1.1.12,V2
R3.3.4	S3.2.2, S2.3.2	V1.1.12,V2
R4	S1.1, S1.2, S1.3	V1.2,V2
R4.1	S1.1	V1.2.2,V2.2,V2.3
R4.2.1	S1.2	V1.2.3,V2.2,V2.3
R4.2.2	S1.2	V1.2.3,V2.2,V2.3
R4.3	S1.3	V2