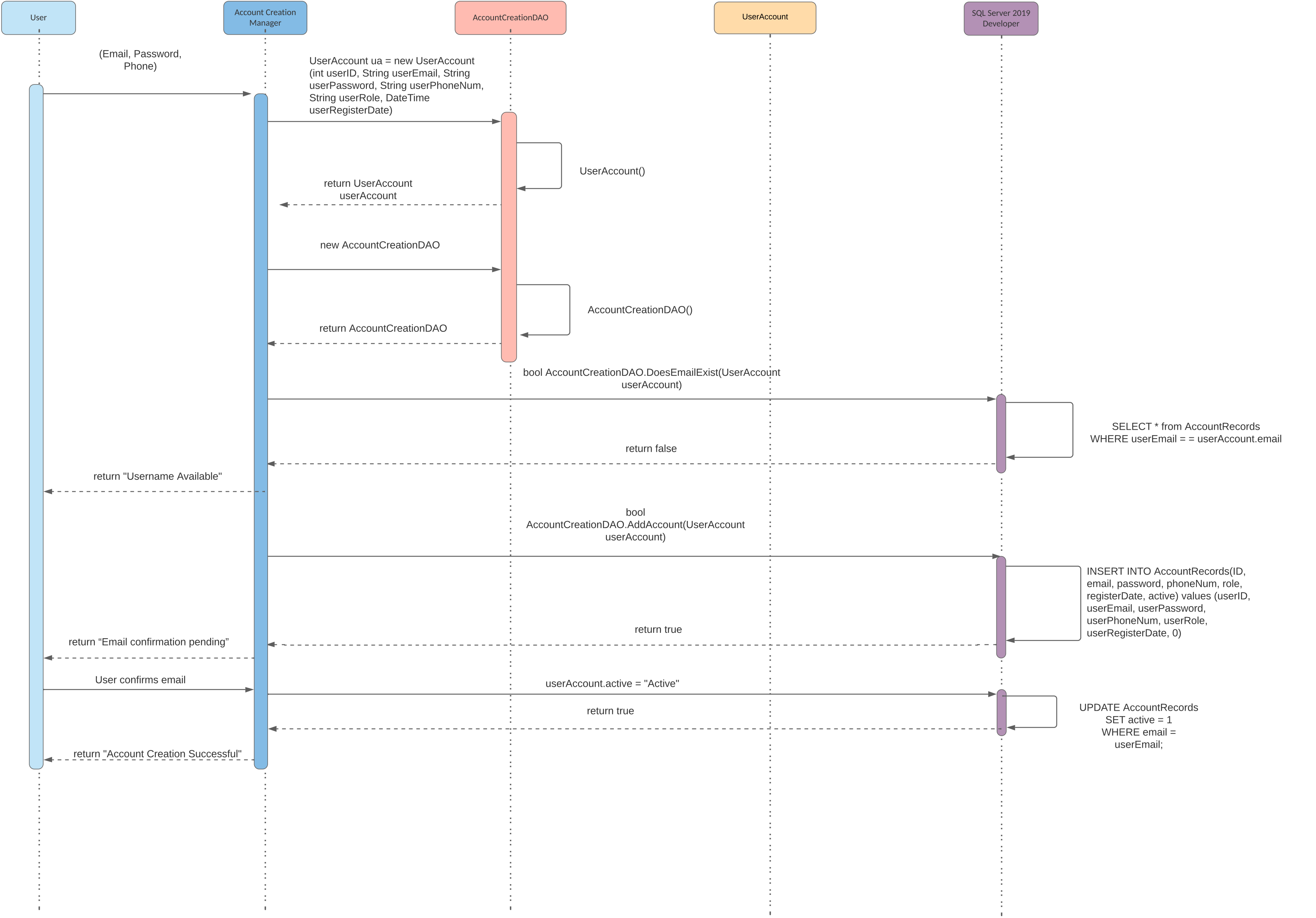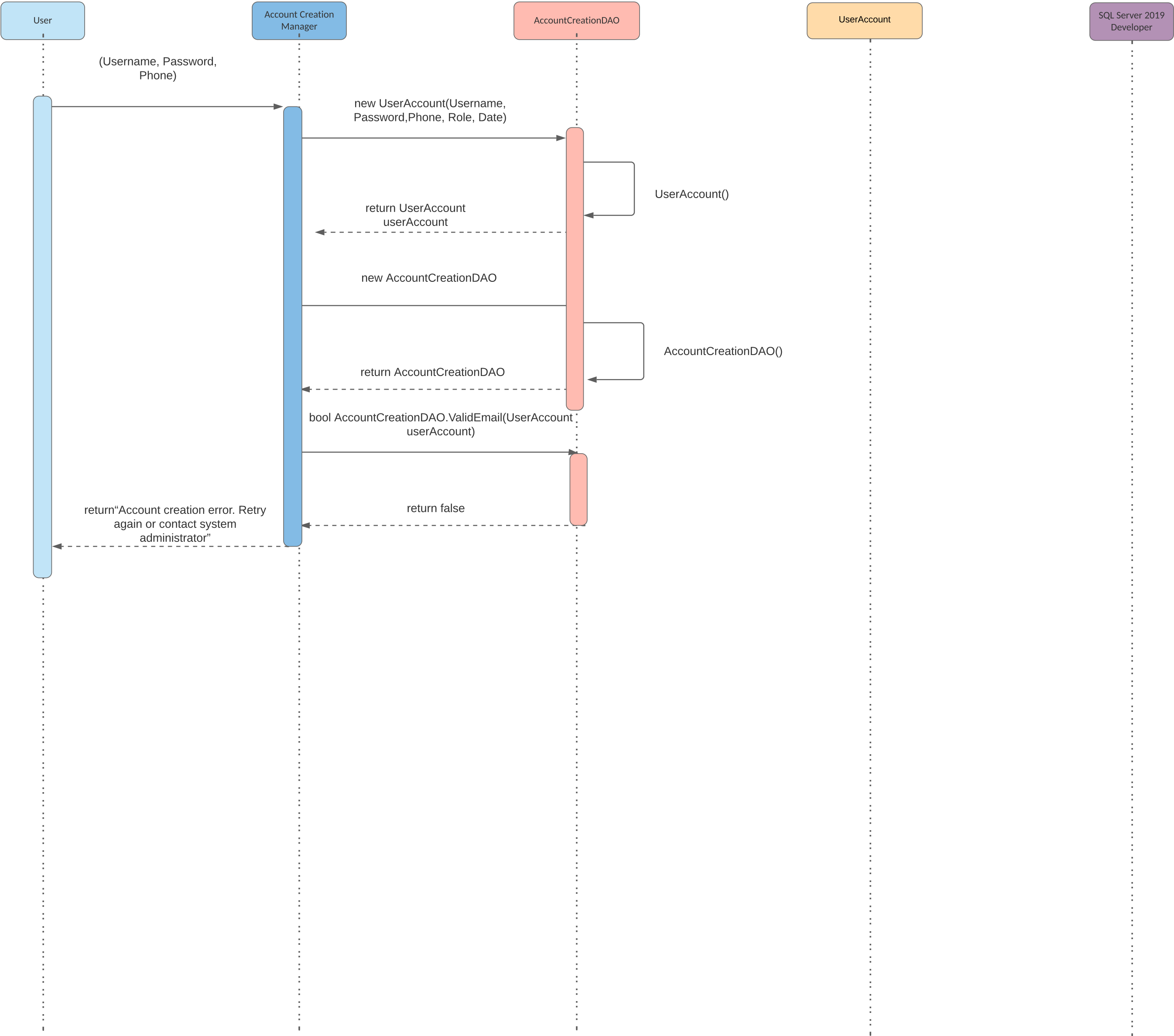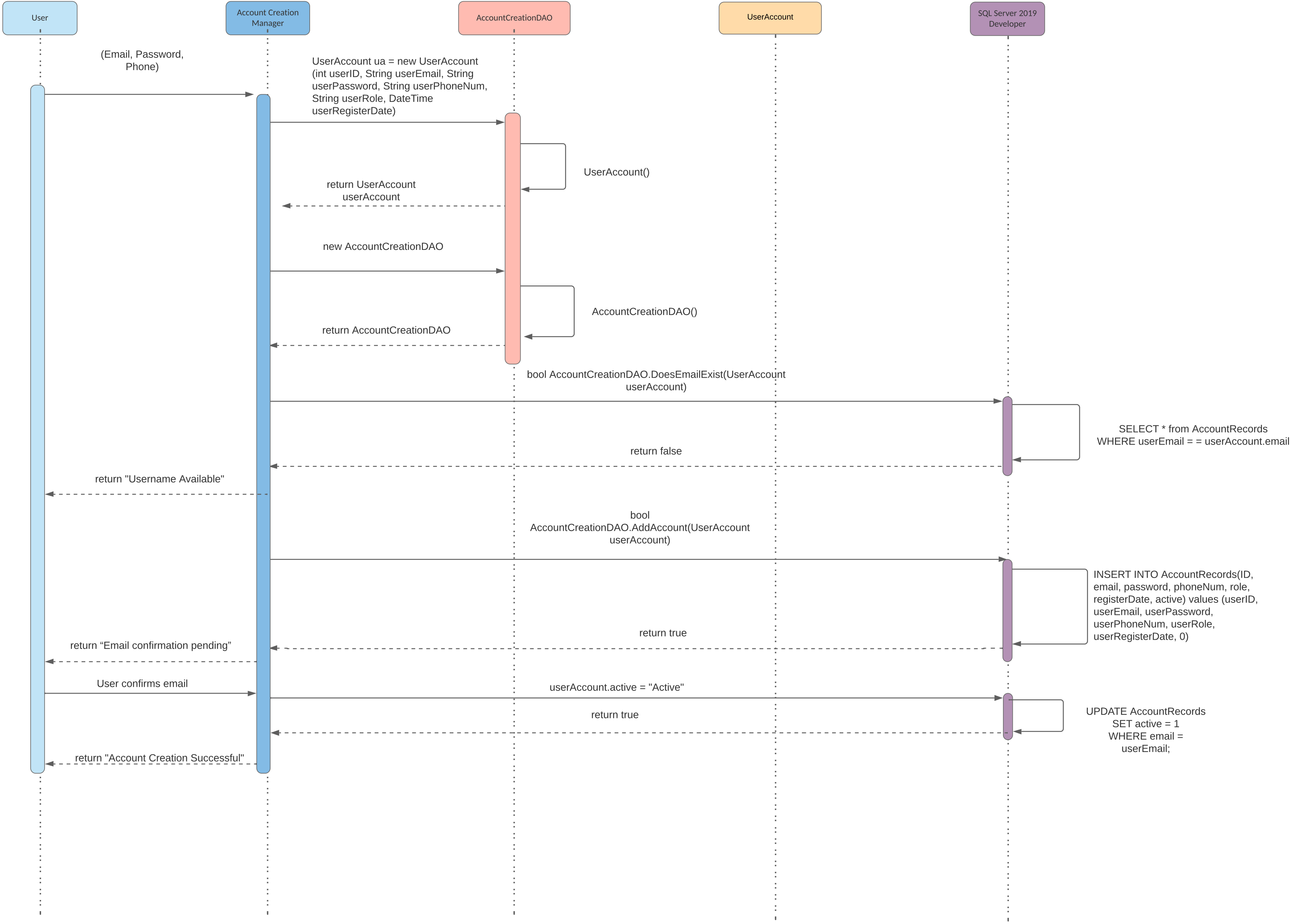**Success Case 1:**
User registers with a valid email and valid passphrase. A system message displays "Email confirmation pending". The user receives a confirmation email within 15 seconds upon invocation of system message. The user completes email confirmation within 24 hours. User is notified of username. A system message displays "Account created successfully"

User	Account Creation Manager	AccountCreationDAO	UserAccount	SQL Server 2019 Developer

(Email, Password, Phone)

UserAccount ua = new UserAccount (int userID, String userEmail, String userPassword, String userPhoneNum, String userRole, DateTime userRegisterDate)

UserAccount()

return UserAccount userAccount

new AccountCreationDAO

AccountCreationDAO()

return AccountCreationDAO

bool AccountCreationDAO.DoesEmailExist(UserAccount userAccount)

SELECT * from AccountRecords WHERE userEmail == userAccount.email

return false

return "Username Available"

bool AccountCreationDAO.AddAccount(UserAccount userAccount)

INSERT INTO AccountRecords(ID, email, password, phoneNum, role, registerDate, active) values (userID, userEmail, userPassword, userPhoneNum, userRole, userRegisterDate, 0)

return true

return "Email confirmation pending"

User confirms email

userAccount.active = "Active"

return true

UPDATE AccountRecords SET active = 1 WHERE email = userEmail;

return "Account Creation Successful"

Failure Case 1:
User registers with an
invalid email or invalid
passphrase. A system
message
displays "Account creation
error. Retry again or contact
system
administrator" or no system
message.

User

Account Creation
Manager

AccountCreationDAO

UserAccount

SQL Server 2019
Developer

(Username, Password,
Phone)

new UserAccount(Username,
Password,Phone, Role, Date)

UserAccount()

return UserAccount
userAccount

new AccountCreationDAO

AccountCreationDAO()

return AccountCreationDAO

bool AccountCreationDAO.ValidEmail(UserAccount
userAccount)

return false

return"Account creation error. Retry
again or contact system
administrator"

Failure Case 2:
User registers with a valid
email and valid passphrase.
A system message
displays "Email confirmation
pending". The user does not
receives a
confirmation email at all or
an email within 15 seconds
upon invocation of
system message.

User	Account Creation Manager	AccountCreationDAO	UserAccount	SQL Server 2019 Developer

(Email, Password, Phone)

UserAccount ua = new UserAccount
(int userID, String userEmail, String
userPassword, String userPhoneNum,
String userRole, DateTime
userRegisterDate)

UserAccount()

return UserAccount
userAccount

new AccountCreationDAO

AccountCreationDAO()

return AccountCreationDAO

bool AccountCreationDAO.DoesEmailExist(UserAccount
userAccount)

SELECT * from AccountRecords
WHERE userEmail = = userAccount.email

return false

return "Username Available"

bool
AccountCreationDAO.AddAccount(UserAccount
userAccount)

INSERT INTO AccountRecords(ID,
email, password, phoneNum, role,
registerDate, active) values (userID,
userEmail, userPassword,
userPhoneNum, userRole,
userRegisterDate, 0)

return true

return "Email confirmation pending"

User confirms email

userAccount.active = "Active"

return true

UPDATE AccountRecords
SET active = 1
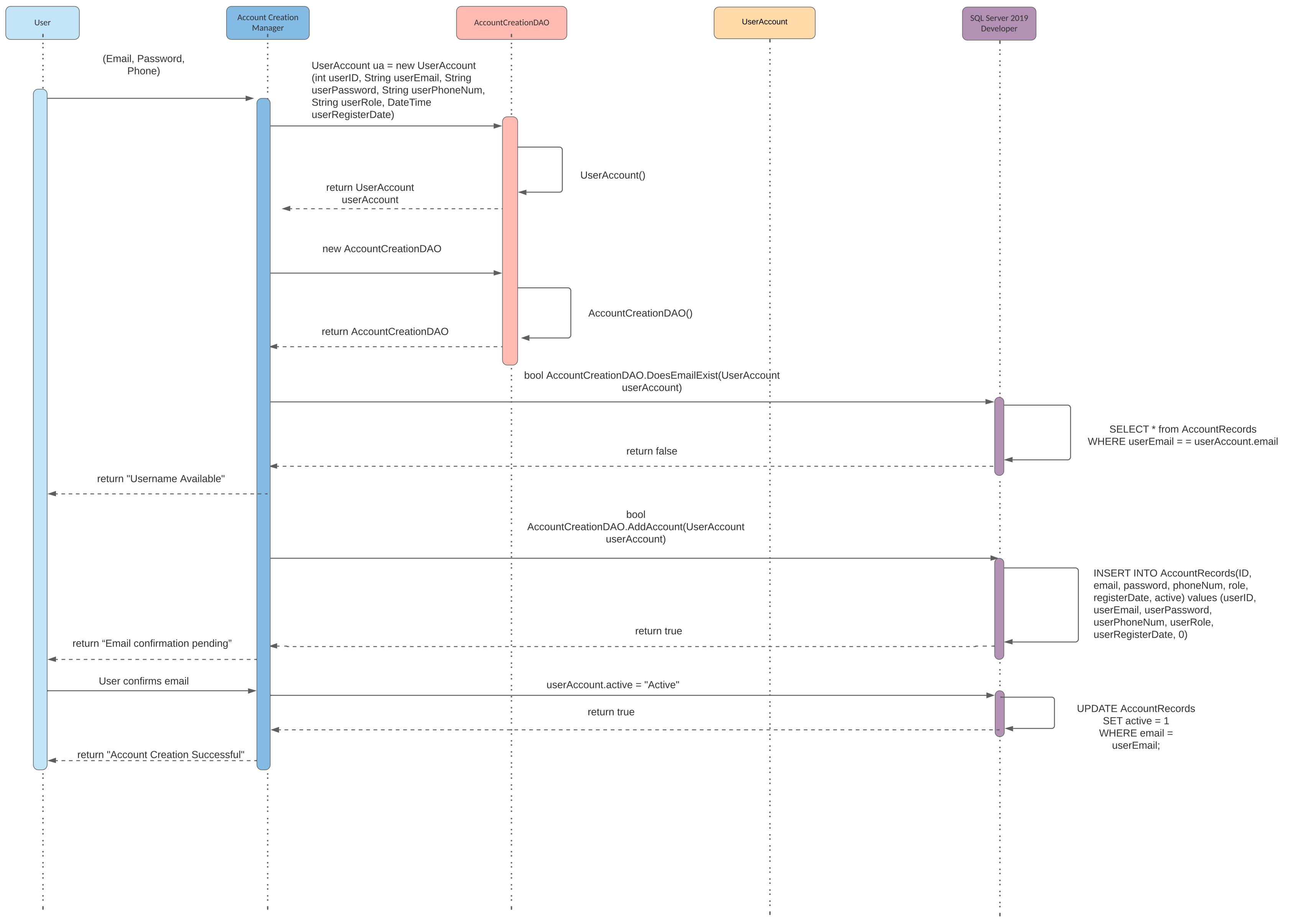WHERE email =
userEmail;

return "Account Creation Successful"

Failure Case 3:
User registers with a valid
email and valid passphrase.
A system message
displays "Email confirmation
pending". The user receives
an email
confirmation within 15
seconds upon invocation of
system message. The
user does not complete
email confirmation within 24
hours.

User	Account Creation Manager	AccountCreationDAO	UserAccount	SQL Server 2019 Developer

(Email, Password, Phone)

UserAccount ua = new UserAccount (int userID, String userEmail, String userPassword, String userPhoneNum, String userRole, DateTime userRegisterDate)

UserAccount()

return UserAccount userAccount

new AccountCreationDAO

AccountCreationDAO()

return AccountCreationDAO

bool AccountCreationDAO.DoesEmailExist(UserAccount userAccount)

SELECT * from AccountRecords WHERE userEmail = = userAccount.email

return false

return "Username Available"

bool AccountCreationDAO.AddAccount(UserAccount userAccount)

INSERT INTO AccountRecords(ID, email, password, phoneNum, role, registerDate, active) values (userID, userEmail, userPassword, userPhoneNum, userRole, userRegisterDate, 0)

return true

return "Email confirmation pending"

User doesnt confirm email

userAccount.active = "Inactive"

DELETE FROM AccountRecords WHERE email = userEmail;
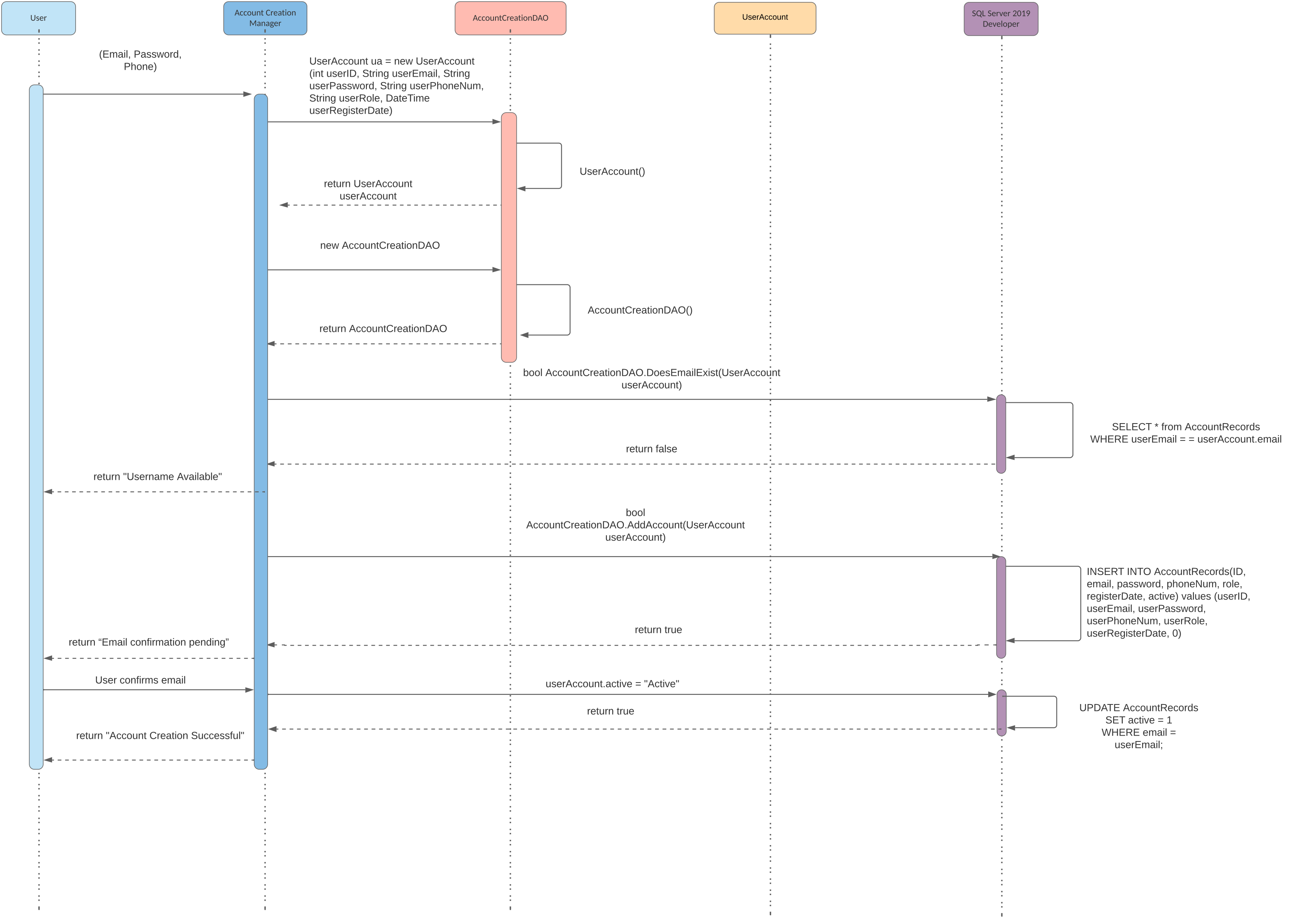
return false

return false

Failure Case 4:
User registers with a valid
email and valid passphrase.
A system message
displays "Email confirmation
pending". The user receives
an email
confirmation within 15
seconds upon invocation of
system message. The
user completes email
confirmation within 24 hours.
User is not notified of
username

User	Account Creation Manager	AccountCreationDAO	UserAccount	SQL Server 2019 Developer

(Email, Password, Phone)

UserAccount ua = new UserAccount
(int userID, String userEmail, String
userPassword, String userPhoneNum,
String userRole, DateTime
userRegisterDate)

UserAccount()

return UserAccount
userAccount

new AccountCreationDAO

AccountCreationDAO()

return AccountCreationDAO

bool AccountCreationDAO.DoesEmailExist(UserAccount
userAccount)

SELECT * from AccountRecords
WHERE userEmail = = userAccount.email

return false

return "Username Available"

bool
AccountCreationDAO.AddAccount(UserAccount
userAccount)

INSERT INTO AccountRecords(ID,
email, password, phoneNum, role,
registerDate, active) values (userID,
userEmail, userPassword,
userPhoneNum, userRole,
userRegisterDate, 0)

return true

return "Email confirmation pending"

User confirms email

userAccount.active = "Active"

UPDATE AccountRecords
SET active = 1
WHERE email =
userEmail;

return true

return "Account Creation Successful"

Failure Case 5:
User registers with a valid
email and valid passphrase.
A system message
displays "Email confirmation
pending". The user receives
an email
confirmation within 15
seconds upon invocation of
system message. The
user completes email
confirmation within 24 hours.
User is notified of
username. A system
message does not display

User

Account Creation Manager

AccountCreationDAO

UserAccount

SQL Server 2019 Developer

(Email, Password, Phone)

UserAccount ua = new UserAccount (int userID, String userEmail, String userPassword, String userPhoneNum, String userRole, DateTime userRegisterDate)

UserAccount()

return UserAccount userAccount

new AccountCreationDAO

AccountCreationDAO()

return AccountCreationDAO

bool AccountCreationDAO.DoesEmailExist(UserAccount userAccount)

SELECT * from AccountRecords WHERE userEmail = = userAccount.email

return false

return "Username Available"

bool AccountCreationDAO.AddAccount(UserAccount userAccount)

INSERT INTO AccountRecords(ID, email, password, phoneNum, role, registerDate, active) values (userID, userEmail, userPassword, userPhoneNum, userRole, userRegisterDate, 0)

return true

return "Email confirmation pending"

User confirms email

userAccount.active = "Active"

return true

UPDATE AccountRecords SET active = 1 WHERE email = userEmail;

return "Account Creation Successful"

Failure Case 6:
User registers with a valid email and valid passphrase. A system message displays "Email confirmation pending". The user receives an email confirmation within 15 seconds upon invocation of system message. The user completes email confirmation within 24 hours. User is notified of username. A system message displays "Account created successfully", but account is not created and stored in the data store

User	Account Creation Manager	AccountCreationDAO	UserAccount	SQL Server 2019 Developer

(Email, Password, Phone)

UserAccount ua = new UserAccount (int userID, String userEmail, String userPassword, String userPhoneNum, String userRole, DateTime userRegisterDate)

UserAccount()

return UserAccount userAccount

new AccountCreationDAO

AccountCreationDAO()

return AccountCreationDAO

bool AccountCreationDAO.DoesEmailExist(UserAccount userAccount)

SELECT * from AccountRecords WHERE userEmail = = userAccount.email

return false

return "Username Available"

bool AccountCreationDAO.AddAccount(UserAccount userAccount)

INSERT INTO AccountRecords(ID, email, password, phoneNum, role, registerDate, active) values (userID, userEmail, userPassword, userPhoneNum, userRole, userRegisterDate, 0)

return true

return "Email confirmation pending"

User confirms email

userAccount.active = "Active"

UPDATE AccountRecords SET active = 1 WHERE email = userEmail;

return true

SELECT * from AccountRecords WHERE userEmail = = userAccount.email

return true

return "Account Creation Successful"