COMPSCI-320 Fall 2024 Section 2

CodeQuest >-

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CS 320 - Software Metrics

Creating User Account:

Information Domain Value	Points	Count	Simple	Average	Complex	Total
External Inputs	 Provide user information Username Email Password Opt for the user to be emailed for notifications Enable dark mode Create user button 	2	4	1	0	5
External Outputs	 Error message This email address is associated with another account Confirmation email The user was directed to the home page of CodeQuest 	3	1	2	0	3
External Inquiries	- Check if the email is already associated with an account	1	1	0	0	1
Internal Logical Files	- The user's profile information is stored in a database table	1	1	0	0	1
External Interface Files	- Authentication via third-party services	1	0	0	1	1

Total	8 7	7	3	1	11
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- Internal Logical File (ILF): User-identifiable group of related data maintained within the application.
 - All of the user's information provided in the form is sent to the database.
- External Interface File (EIF): User-identifiable group of related data referenced by the application but maintained within another application.
 - Users choose to sign in through third-party applications such as Google, Discord, or GitHub.
- External Input (EI): Unique elementary process that processes data outside the application boundary.
 - User profile information such as user name, email, password, and enabling notifications via email/dark mode are used as inputs for creating the account.
 - The button is used to confirm and store all information in the database.
- External Output (EO): Unique elementary process that sends data outside the application boundary. Calculations, derivation of data, or maintenance also take place.
 - A confirmation email is sent to the user that an account has been created with CodeQuest.
 - o Error message:
 - The user has already created an account with the email provided in the form. Advises users to provide new email as CodeQuest can not make another account with the same email.
 - After the button for creating the account is pressed, the user will be directed to the main page of CodeQuest.
- External Inquiry (EQ): Unique elementary process that sends data outside the application boundary. Calculations, derivation of data, or maintenance do not take place.
 - Check if the email is already associated with an account through a query to the database.

User Authentication:

Information Domain Value	Points	Count	Simple	Average	Complex	Total
External Inputs	- Input fields - Email - Password	4	2	2	3	7

	 Third-party OAuth Google Github Discord Password Reset Request Sign-in button 					
External Outputs	 Messages to user Login success message Login failure message Password reset Access token for OAuth 	3	4	2	1	5
External Inquiries	- Validate OAuth token	1	0	0	1	1
Internal Logical Files	- User's account information in the database	1	0	1	1	2
External Interface Files	- OAuth with third-party authentication services	1	0	0	1	1
Total		10	6	5	7	16

- Internal Logical File (ILF): User-identifiable group of related data maintained within the application.
 - Check if the associated email with the password is valid.
- External Interface File (EIF): User-identifiable group of related data referenced by the application but maintained within another application.
 - If a user signs in with third-party authentication through OAuth, CodeQuest redirects for OAuth authentication.
- External Input (EI): Unique elementary process that processes data coming from outside the application boundary.
 - User inputs
 - User's email
 - User's Password
 - Three buttons dedicated to OAuth third-party authentication
 - Google
 - Github
 - Discord
 - Sign-button, to initiate external outputs.

- External Output (EO): Unique elementary process that sends data outside the application boundary. Calculations, derivation of data, or maintenance also take place.
 - Messages to users:
 - Login is a success: The user signed in with the correct email and associated password.
 - Login failure:
 - Email is not associated with an account
 - Password Incorrect
 - Verification required for account
 - Password reset:
 - Password reset takes the user to another form for the user to complete.
- External Inquiry (EQ): Unique elementary process that sends data outside the application boundary. Calculations, derivation of data, or maintenance do not take place.
 - Users have to validate the OAuth token with a third-party application if using either Google, Discord, or GitHub.

Daily Practice Reminders Through Email:

Information Domain Value	Points	Count	Simple	Average	Complex	Total
External Inputs		0	0	0	0	0
External Outputs	- Email notification sent to the user	1	0	1	0	1
External Inquiries	- User profile changes to preferences of email notifications	1	0	1	0	1
Internal Logical Files	- User data name and email from the database	1	1	0	0	1
External Interface Files	- ActionMailer to send notifications to users	1	0	1	0	1
Total		4	1	3	0	4

- Internal Logical File (ILF): User-identifiable group of related data maintained within the application.
 - Take user data from the database to add to the notification email.
 - Take user email from the database to send notifications to.
- External Interface File (EIF): User-identifiable group of related data referenced by the application but maintained within another application.
 - ActionMailer is the Ruby on Rails tool used to send notifications to users via email.
- External Input (EI): Unique elementary process that processes data coming from outside the application boundary.
 - There are no external inputs, as the option to opt into an email is adjusted in profile settings.
- External Output (EO): Unique elementary process that sends data outside the application boundary. Calculations, derivation of data, or maintenance also take place.
 - o An email gets sent from CodeQuest to the user.
- External Inquiry (EQ): Unique elementary process that sends data outside the application boundary. Calculations, derivation of data, or maintenance do not take place.
 - The user chooses to adjust whether or not to opt into email through the profile page.