**FLOW (VALIDS):**

1. Display Main Menu:
   1. [1] - Client
   2. [2] - Admin
   3. [0] - Exit
      1. Valid: 1, 2, & 0
2. If Main Menu choice = 1; Display Client Menu:
   1. [1] - Register
   2. [2] - Login
   3. [0] - Back
      1. Valid: 1, 2, & 0
3. If Client Menu choice = 1; Register new client:
   1. Enter name:
      1. Valid: Full Name
   2. Password:
      1. Valid: at least 8 characters with 1 uppercase
   3. Contact:
      1. Valid: 11 digits
   4. Initial Deposit (min P500):
      1. Valid: P500 up
   5. Back to Client Menu (solution: call client menu after register)
4. If Client Menu choice = 2; Login Client:
   1. Client ID:
      1. Valid: 4 digits nga naa sa text file
   2. Password:
      1. Valid: 8 characters with 1 uppercase nga naa sa text file
5. After Login; Display Client Actions Menu:
   1. [1] – View Account Info
   2. [2] – Deposit
   3. [3] – Withdraw
   4. [0] – Logout
      1. Valid: 1, 2, 3, & 0
6. If Client Actions Menu = 1; Display client info:
   1. Display: Id, password, name, contact, & balance.
7. If Client Actions Menu = 2; Deposit Amount:
   1. Deposit Amount:
      1. Valid: P100 up
8. If Client Actions Menu = 3; Withdraw Amount:
   1. Withdraw Amount:
      1. Valid: P1 up
9. If Client Actions Menu = 0; Logout:
   1. Mobalik sa client menu
10. If Client Menu choice = 0; Exit:
    1. Mobalik sa Main Menu
11. If Main menu choice = 2; Display Admin Menu:
    1. [1] - Register
    2. [2] - Login
    3. [0] - Back
       1. Valid: 1, 2, & 0
12. If admin menu choice = 1; Register admin:
    1. Admin name:
       1. Valid: Full Name
    2. Password:
       1. Valid: at least 8 characters with 1 uppercase
    3. Back to Admin Menu
13. If admin menu choice = 2; Login admin:
    1. Admin ID:
       1. Valid: 4 digits nga naa sa text file
    2. Password:
       1. Valid: 8 characters with 1 uppercase nga naa sa text file
    3. Display Admin Actions
14. Admin Actions:
    1. [1] – View all clients
    2. [2] – Add client
    3. [3] – Search Client
    4. [4] – Sort Client
    5. [5] – Modify Client
    6. [6] – Remove Client
    7. [7] – View Transaction History
    8. [8] – Display Admin Info
    9. [0] – Logout
       1. Valid: 1, 2, 3, 4, 5, 6, 7, 8, & 0
15. If admin actions = 1; view all clients:
    1. List all clients
    2. Back to admin actions
16. If admin actions = 2; add client:
    1. 3 – register client.
    2. Back to admin actions
17. If admin actions = 3; search client:
    1. Client ID to search:
       1. Valid: 4-digit nga naa sa text files.
18. If admin actions = 4; sort clients:
    1. Prompt user to choose between (1 - by name (a-z), 2 - by name (z-a), 3 - by balance (highest to lowest), 4 – by balance (lowest to highest)):
       1. Valid: 1, 2, 3 & 4
19. If admin actions = 5; modify client details:
    1. Client ID to modify:
       1. Valid: 4 digits nga naa sa text file
    2. New Name: (Dapat naay option ang user to change or not, Yes or No)
       1. Validations: 3.a
    3. New Pass: (Dapat naay option ang user to change or not, Yes or No)
       1. Validations: 3.b
    4. Back to Admin Actions
20. If admin actions = 3; remove client:
    1. Client ID to remove:
       1. Valid: 4-digit nga naa sa text files.
21. If admin actions = 6; view transaction history:
    1. Enter Client ID:
       1. Valid: 4-digits nga naa sa text files.
    2. Dapat ma display pud ag date & time.
22. If admin actions = 7; display admin info:
    1. Dapat ang info sa admin ang mga display (ID, name ug pass) dili ang list of admins.
23. If admin actions = 0; Logout:
    1. Back to admin menu.

**FLOW:**

1. Display Main Menu:
   1. [1] - Client
   2. [2] - Admin
   3. [0] - Exit
      1. Invalid: -1, 3 up, & character
      2. Valid: 1, 2, & 0
2. If Main Menu choice = 1; Display Client Menu:
   1. [1] - Register
   2. [2] - Login
   3. [0] - Exit
      1. Invalid: -1, 3 up, & character
      2. Valid: 1, 2, & 0
3. If Client Menu choice = 1; Register new client:
   1. Enter name:
      1. Invalid: Numbers
      2. Valid: Full Name
   2. Password:
      1. Invalid: less than 8 characters, no uppercase
      2. Valid: at least 8 characters with 1 uppercase
   3. Contact:
      1. Invalid: less than or more than 11 digits
      2. Valid: 11 digits
   4. Initial Deposit (min P500):
      1. Invalid: less than P500, character
      2. Valid: P500 up
   5. Back to Client Menu (mobalik sa main menu, dapat sa client menu ra gihapon)
4. If Client Menu choice = 2; Login Client:
   1. Client ID:
      1. Invalid: -1, character (mo infinite loop) wala sa text file, (Mo validate ag -1 ug 3 up pero mobalik sa main menu, dapat sa client menu ra gihapon)
      2. Valid: 4 digits nga naa sa text file
   2. Password:
      1. Invalid: -1, wala sa text file
      2. Valid: 8 characters with 1 uppercase nga naa sa text file
5. After Login; Display Client Actions Menu:
   1. [1] – View Account Info
   2. [2] – Deposit Amount
   3. [3] – Withdraw Amount
   4. [0] – Logout
6. If Client Actions Menu = 1; Display client info
   1. Igo ra mo display sa: Id, password, name, contact, balance
7. If Client Actions Menu = 2; Deposit Amount:
   1. Deposit Amount:
      1. Invalid: -1, 0, a, less than P100
      2. Valid: P100 up
8. If Client Actions Menu = 3; Withdraw Amount if current balance is greater than P500:
   1. Withdraw Amount:
      1. Invalid: -1, a, makapaubos sa min bal (P500)
      2. Valid: any number basta dili mo ubos P500 after withdraw
9. If Client Actions Menu = 0; Logout (Mobalik sa client menu)
10. If Client Menu choice = 0; Exit (Mobalik sa Main Menu)
11. If Main menu choice = 2; Display Admin Menu:
    1. [1] - REGISTER
    2. [2] - LOGIN
    3. [0] - EXIT
       1. Invalid: -1, a, 3 up
       2. Valid: 0, 1, 2
12. If admin menu choice = 1; Register admin:
    1. Admin name:
       1. Invalid: Numbers, specials characters
       2. Valid: Full Name
    2. Password:
       1. Invalid: -1, less than 8 characters, no uppercase
       2. Valid: at least 8 characters with 1 uppercase
    3. Back to Admin Menu
13. If admin menu choice = 2; Login admin:
    1. Admin ID:
       1. Invalid: -1, a, wala sa text file
       2. Valid: 4 digits nga naa sa text file
    2. Password:
       1. Invalid: -1, wala sa text file
       2. Valid: 8 characters with 1 uppercase nga naa sa text file
    3. Display Admin Actions
14. If admin actions = 1; view all clients
15. If admin actions = 2; modify client details:
    1. Client ID to modify:
       1. Invalid: -1, 0, a, wala sa text file
       2. Valid: 4 digits nga naa sa text file
    2. New Name: (Dapat naay option ang user to change or not, Yes or No)
       1. Validations: 3.a
    3. New Pass: (Dapat naay option ang user to change or not, Yes or No)
       1. Validations: 3.b
    4. Back to Admin Actions
16. If admin actions = 3; remove client:
    1. Client ID to remove:
       1. Invalid: -1, 0, a, wala sa text files.
       2. Valid: 4-digit nga naa sa text files.
17. If admin actions = 4; search client:
    1. Client ID to search:
       1. Invalid: -1, 0, q, wala sa text files.
       2. Valid: 4-digit nga naa sa text files.
18. If admin actions = 5; sort clients:
    1. Instead of showing a menu, prompt user to choose between (1 - by name, 2 - by balance):
       1. Invalid: -1, 0, a
       2. Valid: 1 or 2
19. If admin actions = 6; view transaction history:
    1. Enter Client ID:
       1. Invalid: -1, 0, a, wala sa text files.
       2. Valid: 4-digits nga naa sa text files.
    2. Dapat ma display pud ag date & time.
20. If admin actions = 7; display admin info:
    1. Dapat ang info sa admin ang mga display (ID, name ug pass) dili ang list of admins.
21. If admin actions = 0; Logout:
    1. Back to admin menu.

**Final Project Deliverable #2: Functions Used**

|  |  |  |  |
| --- | --- | --- | --- |
| **Team Name:** | Bit Builders | | |
| **Team Members:** | Lomarda, Ismael Marlon & Subrio, Charryl | | |
| **Application Name:** | Banking Management System | | |
| **Function name** | **Capability** | **Description** | **Member assigned** |
| loadData() | Load client, admin, & transaction data | Loads stored client, admin, and transaction records into the system. | Lomarda |
| displayMenu() | Display main menu | Displays the main menu options (Client or Admin) | Subrio |
| displayClientMenu() | Display client menu | Shows menu options specific to client operations. | Lomarda |
| registerClient() | 1. Register and set up an account. | Registers a new client by accepting details (name, contact number, password, initial deposit). | Subrio |
| loginClient() | Log in client account | Authenticates and grants client access to their account. | Lomarda |
| displayClientAction() | Display client actions menu | Displays the available actions for a logged-in client. | Subrio |
| depositAmount() | 2. Deposit | Accepts a deposit amount and updates the client's account balance. | Lomarda |
| withdrawAmount() | 2. Withdraw | Accepts a withdrawal amount and deducts it from the client's account balance. | Subrio |
| displayClientInfo() | Display client info | Displays client details including ID, name, contact number, password, and balance. | Lomarda |
| displayAdminMenu() | Display admin menu | Shows menu options specific to admin operations. | Subrio |
| registerAdmin() | 3. Register new admin | Accepts client details (name, & password | Lomarda |
| loginAdmin() | Log in admin account | Authenticates and grants admin access to the system. | Subrio |
| displayAdminAction() | Display admin action menu | Displays the available actions for a logged-in admin. | Lomarda |
| viewAllClients() | 4. View a list of all clients and their details. | Displays a list of all registered clients with their details. | Subrio |
| registerClient() | 5. Add new clients to the system. | Registers a new client by accepting details (name, contact number, password, initial deposit). | Lomarda |
| modifyClientDetails() | 6. Modify client details | Updates client information based on a provided client ID. | Subrio |
| removeClient() | 7. Remove clients | Deletes a specific client from the system. | Lomarda |
| searchClient() | 8. Search for a specific client. | Retrieves and displays a specific client’s details using their client ID. | Subrio |
| sortClients() | 9. Sort clients | Sort clients by name or balance. | Lomarda |
| viewTransacHist() | 10. View transaction history. | Displays the deposit and withdrawal transaction history of a specific client using their ID. | Subrio |
| displayAdminCred() | Display admin credentials | Shows admin details including ID, name, and password. | Lomarda |
| saveData() | Save client, admin, & transaction data | Saves updated client, admin, and transaction records to the system's storage. | Subrio |

1. Function

* Capability
* Description

1. loadData()
   * Load client, admin, & transaction data.
   * Loads stored client, admin, and transaction records into the system.
2. displayMenu()
   * Display main menu.
   * Displays the main menu options (1 - Client, 2 - Admin, 0 - Exit).
3. displayClientMenu()
   * Display client menu.
   * Shows menu options specific to client operations (1 - Register, 2 - Login, 0 - Exit).
4. registerClient()
   * Register and set up an account.
   * Registers a new client by accepting details (name, contact number, password, initial deposit). Note: generate unique id for every register.
5. loginClient()
   * Log in client account.
   * Authenticates and grants client access to their account.
6. displayClientAction()
   * Display client actions menu.
   * Displays the available actions for a logged-in client (1 – Display Client Info, 2 - Deposit, 3 - Withdraw, 0 - Logout).
7. depositAmount()
   * Deposit.
   * Accepts a deposit amount and updates the client's account balance.
8. withdrawAmount()
   * Withdraw.
   * Accepts a withdrawal amount and deducts it from the client's account balance.
9. displayClientInfo()
   * Display client info.
   * Displays client details including ID, name, contact number, password, and balance.
10. displayAdminMenu()
    * Display admin menu.
    * Shows menu options specific to admin operations (1 - Register, 2 - Login, 0 - Exit).
11. registerAdmin()
    * Register new admin.
    * Accepts client details (name, & password). Note: generate unique id for every register.
12. loginAdmin()
    * Log in admin account.
    * Authenticates and grants admin access to the system.
13. displayAdminAction()
    * Display admin action menu.
    * Displays the available actions for a logged-in admin (1 – View clients, 2 – Add a client, 3 – Modify client details, 4 – Remove a client, 5 – Search for a client, 6 – Sort clients, 7 – View transaction history, 8 – Display admin info, 0 - Logout).
14. viewAllClients()
    * View a list of all clients and their details.
    * Displays a list of all registered clients with their details.
15. modifyClientDetails()
    * Modify client details.
    * Updates client information based on a provided client ID.
16. removeClient()
    * Remove clients.
    * Deletes a specific client from the system.
17. searchClient()
    * Search for a specific client.
    * Retrieves and displays a specific client’s details using their client ID.
18. sortClients()
    * Sort clients.
    * Sort clients by name or balance.
19. viewTransacHist()
    * View transaction history.
    * Displays the deposit and withdrawal transaction history of a specific client using their ID.
20. displayAdminCred()
    * Display admin credentials.
    * Shows admin details including ID, name, and password.
21. saveData()
    * Save client, admin, & transaction data.
    * Saves updated client, admin, and transaction records to the system's storage.