

bankingapp-with-collection-stats - bankingapp-with-collection-stats/src/com/indium/bankingapp/BankingAppMain.java - Eclipse IDE

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Package Explorer

bankingapp-with-collection-stats [indium\_jav  
JRE System Library [JavaSE-17]  
src  
com.indium.bankingapp  
BankingAppMain.java  
com.indium.bankingapp.model  
Account.java  
com.indium.bankingapp.service  
AccountService.java  
AccountServiceHashMapImpl.java

```
1 package com.indium.bankingapp;  
2  
3 import com.indium.bankingapp.model.Account;  
11  
12 public class BankingAppMain {  
13     private static AccountService<Account> accountService = createAccountService();  
14     private static Scanner scanner = new Scanner(System.in);  
15  
16     public static void main(String[] args) {  
17         while (true) {  
18             displayMenu();  
19             int choice = getUserChoice();  
20  
21             switch (choice) {  
22                 case 1:  
23                     captureAccountDetails();  
24                     break;  
25                 case 2:  
26                     updateAccountDetails();  
27                     break;  
28                 case 3:  
29                     viewAccountDetails();  
30                     break;  
31                 case 4:  
32                     viewAllAccounts();  
33                     break;  
34                 case 5:  
35                     deleteAccount();  
36                     break;  
37                 case 6:  
38                     handlePrintStatisticsMenu();  
39                     break;  
40             }  
41         }  
42     }  
43 }
```

Task List

Find All Activate...

Outline

com.indium.bankingapp  
BankingAppMain  
accountService : AccountService<Account>  
scanner : Scanner  
main(String[]) : void  
createAccountService() : AccountService<Account>  
displayMenu() : void  
getUserChoice() : int  
captureAccountDetails() : void  
calculateInterestAndUpdateBalance() : void  
isValidAccountType(String) : boolean  
updateAccountDetails() : void



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BankingAppMain.java

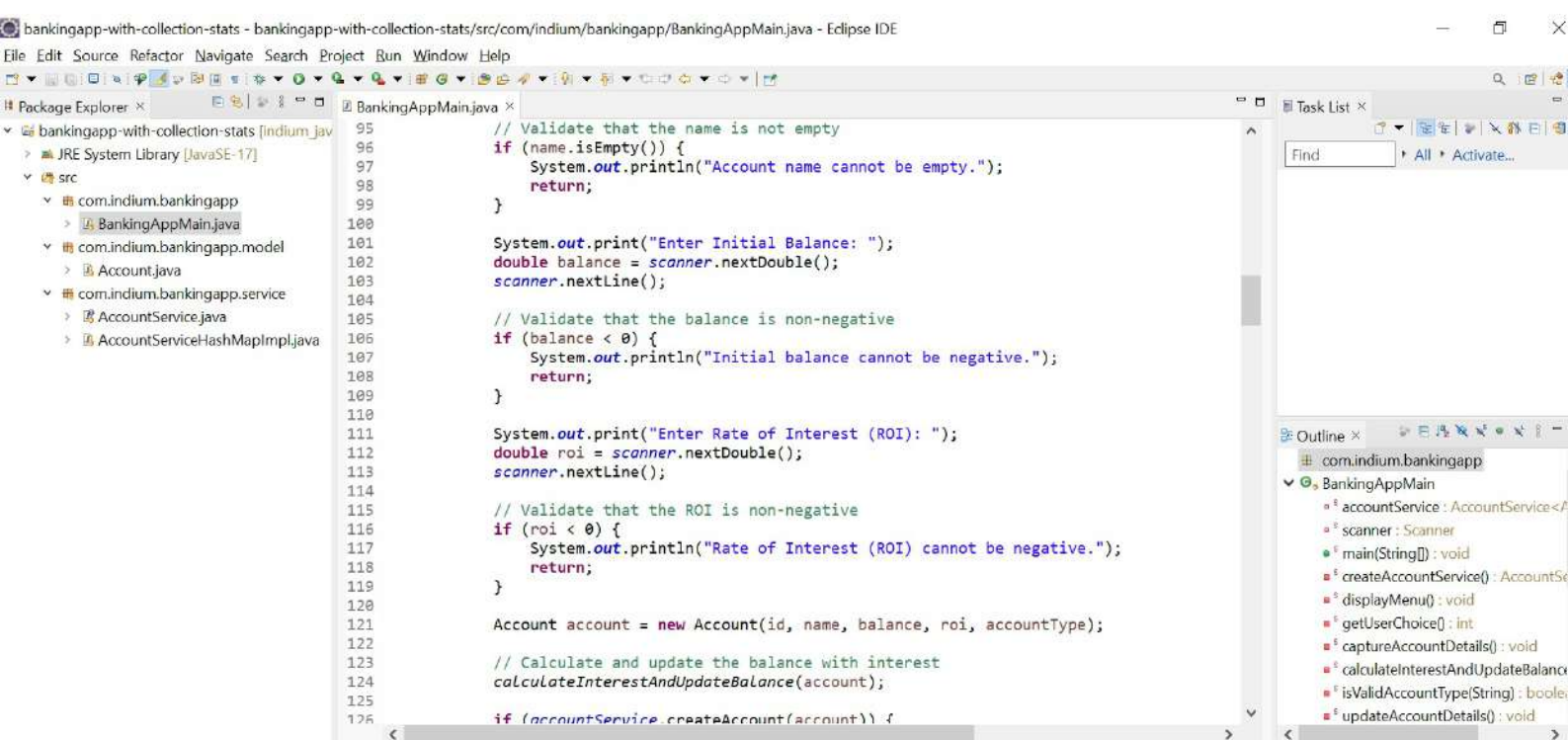
```
71  
72 private static void captureAccountDetails() {  
73     try {  
74         System.out.print("Enter Account Type (savings/deposit/loan): ");  
75         String accountType = scanner.nextLine().toLowerCase();  
76  
77         if (!isValidAccountType(accountType)) {  
78             System.out.println("Invalid account type. Please enter 'savings', 'deposit', o  
79             return;  
80         }  
81  
82         System.out.print("Enter Account ID: ");  
83         int id = scanner.nextInt();  
84         scanner.nextLine();  
85  
86         // Validate that ID is positive  
87         if (id <= 0) {  
88             System.out.println("Invalid account ID. Please enter a positive integer.");  
89             return;  
90         }  
91  
92         System.out.print("Enter Account Name: ");  
93         String name = scanner.nextLine();  
94  
95         // Validate that the name is not empty  
96         if (name.isEmpty()) {  
97             System.out.println("Account name cannot be empty.");  
98             return;  
99         }  
100  
101         System.out.print("Enter Initial Balance: ");  
102         double balance = scanner.nextDouble();
```

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```
130
131
132     } catch (InputMismatchException e) {
133         System.out.println("Invalid input. Please enter valid data.");
134         scanner.nextLine(); // Consume the invalid input
135     } catch (Exception e) {
136         System.err.println("An error occurred: " + e.getMessage());
137     }
138
139
140     private static void calculateInterestAndUpdateBalance(Account account) {
141         double balance = account.getBalance();
142         double roi = account.getRoi();
143         double interest = balance * roi;
144
145         // Add interest to the balance
146         double newBalance = balance + interest;
147         account.setBalance(newBalance); // Update the balance attribute directly
148     }
149
150
151     private static boolean isValidAccountType(String accountType) {
152         return accountType.equals("savings") || accountType.equals("deposit") || accountType.e
153     }
154
155     private static void updateAccountDetails() {
156         System.out.print("Enter Account ID to update: ");
157         int id = scanner.nextInt();
158         scanner.nextLine();
159
160         Account existingAccount = accountService.getAccount(id);
161
```

Task List

Find All Activate...

Outline

- com.indium.bankingapp
  - BankingAppMain
    - accountService : AccountService<A
    - scanner : Scanner
    - main(String[]) : void
    - createAccountService() : AccountS
    - displayMenu() : void
    - getUserChoice() : int
    - captureAccountDetails() : void
    - calculateInterestAndUpdateBalance
    - isValidAccountType(String) : boole
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BankingAppMain.java

```
161
162     if (existingAccount != null) {
163         System.out.print("Enter New Account Name: ");
164         String newName = scanner.nextLine();
165         System.out.print("Enter New Account Balance: ");
166         double newBalance = scanner.nextDouble();
167
168         Account updatedAccount = new Account(id, newName, newBalance, existingAccount.getR
169
170         if (accountService.updateAccount(id, updatedAccount)) {
171             System.out.println("Account updated successfully.");
172         } else {
173             System.out.println("Failed to update the account.");
174         }
175     } else {
176         System.out.println("Account not found.");
177     }
178 }
179
180 private static void viewAccountDetails() {
181     System.out.print("Enter Account ID to view: ");
182     int id = scanner.nextInt();
183     scanner.nextLine();
184
185     Account account = accountService.getAccount(id);
186
187     if (account != null) {
188         System.out.println("Account Details:");
189         System.out.println("ID: " + account.getId());
190         System.out.println("Name: " + account.getName());
191         System.out.println("Balance: " + account.getBalance());
192         System.out.println("Account Type: " + account.getAccountType());
```

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BankingAppMain.java ×

```
192         System.out.println("Account Type: " + account.getAccountType());
193     } else {
194         System.out.println("Account not found.");
195     }
196 }
197
198 private static void viewAllAccounts() {
199     List<Account> accounts = new ArrayList<>(accountService.getAllAccounts());
200
201     if (!accounts.isEmpty()) {
202         System.out.println("All Accounts:");
203         for (Account account : accounts) {
204             System.out.println("ID: " + account.getId());
205             System.out.println("Name: " + account.getName());
206             System.out.println("Balance: " + account.getBalance());
207             System.out.println("Account Type: " + account.getAccountType());
208             System.out.println("-----");
209         }
210     } else {
211         System.out.println("No accounts found.");
212     }
213 }
214
215 private static void deleteAccount() {
216     System.out.print("Enter Account ID to delete: ");
217     int id = scanner.nextInt();
218     scanner.nextLine();
219
220     if (accountService.deleteAccount(id)) {
221         System.out.println("Account deleted successfully.");
222     } else {
223         System.out.println("Failed to delete the account.");
```

Task List ×

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BankingAppMain.java ×

```
226
227
228     private static void handlePrintStatisticsMenu() {
229         while (true) {
230             displayStatisticsMenu();
231             int choice = getUserChoice();
232
233             switch (choice) {
234                 case 1:
235                     printAccountsAbove100000();
236                     break;
237                 case 2:
238                     printAccountTypeCounts();
239                     break;
240                 case 3:
241                     printSortedAccountTypeCounts();
242                     break;
243                 case 4:
244                     printAvgBalanceByAccountType();
245                     break;
246                 case 5:
247                     listAccountIdsAndTypesByName();
248                     break;
249                 case 6:
250                     return; // Return to the main menu
251             }
252             default:
253                 System.out.println("Invalid choice. Please enter a valid option.");
254         }
255     }
256
257     private static void displayStatisticsMenu() {
258         System.out.println("\nStatistics Menu:");
```

Task List ×

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BankingAppMain.java

```
256 private static void displayStatisticsMenu() {  
257     System.out.println("\nStatistics Menu:");  
258     System.out.println("1] No. of accounts which have balance more than 1 Lac");  
259     System.out.println("2] Show no of accounts by account type");  
260     System.out.println("3] Show no of accounts by account type with sorting");  
261     System.out.println("4] Show avg balance by account type");  
262     System.out.println("5] List account IDs and account types whose account name contains  
263     System.out.println("6] Back to Main Menu");  
264     System.out.print("Enter your choice: ");  
265 }  
266  
267 private static void printAccountsAbove100000() {  
268     try {  
269         List<Account> accounts = new ArrayList<>(accountService.getAllAccounts());  
270         long accountsWithHighBalance = accounts.stream()  
271             .filter(account -> account.getBalance() > 100000)  
272             .count();  
273  
274         System.out.println("a] No. of accounts with balance more than 1 Lac: " + accountsW  
275     } catch (Exception e) {  
276         System.err.println("An error occurred while printing accounts with high balance: "  
277     }  
278 }  
279  
280 private static void printAccountTypeCounts() {  
281     try {  
282         List<Account> accounts = new ArrayList<>(accountService.getAllAccounts());  
283         long savingsCount = accounts.stream().filter(account -> account.getAccountType().e  
284         long depositCount = accounts.stream().filter(account -> account.getAccountType().e  
285         long loanCount = accounts.stream().filter(account -> account.getAccountType().e  
286  
287     }
```

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```
277 }  
278 }  
279  
280 private static void printAccountTypeCounts() {  
281     try {  
282         List<Account> accounts = new ArrayList<>(accountService.getAllAccounts());  
283         long savingsCount = accounts.stream().filter(account -> account.getAccountType().e  
284         long depositCount = accounts.stream().filter(account -> account.getAccountType().e  
285         long loanCount = accounts.stream().filter(account -> account.getAccountType().equa  
286  
287         System.out.println("b] No of accounts by account type:");  
288         System.out.println("Savings: " + savingsCount);  
289         System.out.println("Deposit: " + depositCount);  
290         System.out.println("Loan: " + loanCount);  
291     } catch (Exception e) {  
292         System.err.println("An error occurred while printing account type counts: " + e.ge  
293     }  
294 }  
295  
296 private static void printSortedAccountTypeCounts() {  
297     try {  
298         List<Account> accounts = new ArrayList<>(accountService.getAllAccounts());  
299         long savingsCount = accounts.stream().filter(account -> account.getAccountType().e  
300         long depositCount = accounts.stream().filter(account -> account.getAccountType().e  
301         long loanCount = accounts.stream().filter(account -> account.getAccountType().equa  
302  
303         System.out.println("c] No of accounts by account type (sorted):");  
304         System.out.println("Savings: " + savingsCount);  
305         System.out.println("Deposit: " + depositCount);  
306         System.out.println("Loan: " + loanCount);  
307     } catch (Exception e) {  
308         System.err.println("An error occurred while printing sorted account type counts: "
```

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BankingAppMain.java

```
337  
338 } catch (Exception e) {  
339     System.err.println("An error occurred while printing average balance by account ty  
340 }  
341  
342 private static void listAccountIdsAndTypesByName() {  
343     try {  
344         System.out.print("e] Enter a name to search for: ");  
345         String searchName = scanner.nextLine().toLowerCase();  
346         List<Account> accounts = new ArrayList<>(accountService.getAllAccounts());  
347  
348         List<String> accountInfoWithName = new ArrayList<>();  
349  
350         for (Account account : accounts) {  
351             if (account.getName().toLowerCase().contains(searchName)) {  
352                 accountInfoWithName.add("Account ID: " + account.getId() + ", Account Type  
353             }  
354         }  
355  
356         if (!accountInfoWithName.isEmpty()) {  
357             System.out.println("e] Account IDs and Types with names containing '" + search  
358                 for (String accountInfo : accountInfoWithName) {  
359                     System.out.println(accountInfo);  
360                 }  
361             } else {  
362                 System.out.println("e] No accounts found with names containing '" + searchName  
363             }  
364         } catch (Exception e) {  
365             System.err.println("An error occurred while listing account IDs and types by name:  
366         }  
367     }  
368 }
```

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