

1. Creating Accounts

# 1	Main Menu	<pre><-----Bank Of Bengaluru: Banking Application using Tree Map-----> Menu: 1. Create Accounts 2. List all Accounts 3. View an Account 4. Update an Account 5. Delete an Account 6. Print Statistics 7. Import 8. Export 9. Exit</pre>	
# 2	Entering the number accounts	<pre>How many accounts you would like to create? 4 Creating Accounts...</pre>	

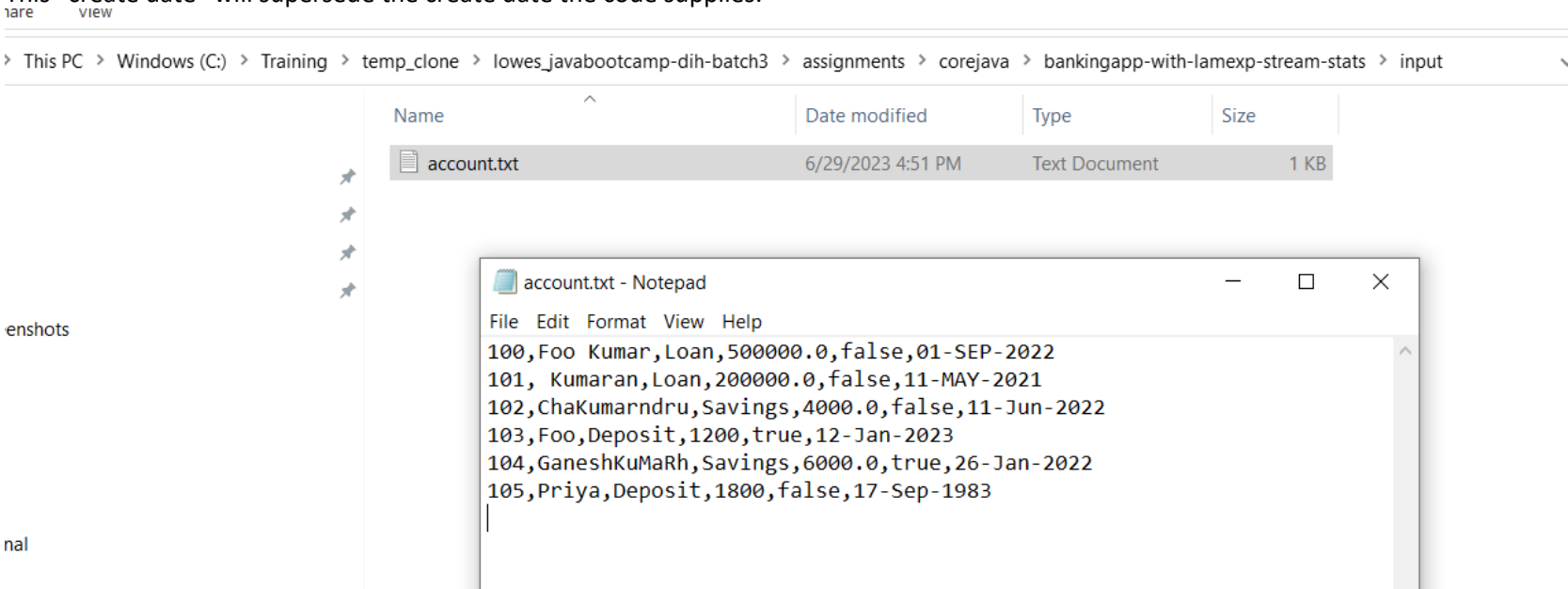

# 3	Entering account details (true/ false/y/n/yes/n o are accepted for isActive field)	<pre>The Account ID for the new account is: 1 Enter the name of the Account Holder Saminathan Raju Enter the Account Type Loan Enter the Account Balance? 122 Is the Account Active? true Accounts created successfully The Account ID for the new account is: 2 Enter the name of the Account Holder Poornima Enter the Account Type Deposit Enter the Account Balance? 101 Is the Account Active? y Accounts created successfully The Account ID for the new account is: 3 Enter the name of the Account Holder Vihaan Saminathan Enter the Account Type Savings Enter the Account Balance? 9901 Is the Account Active? false Accounts created successfully</pre>
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The Account ID for the new account is: 4
Enter the name of the Account Holder
Ahaana Saminathan
Enter the Account Type
Deposit
Enter the Account Balance?
100
Is the Account Active?
true
Accounts created successfully
<-----Bank Of Bengaluru: Banking Application using Tree Map----->
Menu:
1. Create Accounts
2. List all Accounts
3. View an Account
4. Update an Account
5. Delete an Account
6. Print Statistics
7. Import
8. Export
9. Exit
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# 4	Account creation confirmation, and main menu	<pre> Accounts created successfully <-----Bank Of Bengaluru: Banking Application using Tree Map-----> Menu: 1. Create Accounts 2. List all Accounts 3. View an Account 4. Update an Account 5. Delete an Account 6. Print Statistics 7. Import 8. Export 9. Exit </pre>
# 5	Error handled while trying to enter characters for Account Id	N/A (as the Id is auto generated by the code)
# 6	Error handled while trying to enter characters for Balance	<pre> Enter the Account Balance? Hundred Invalid input, please enter only numbers; This field is decimal friendly.! Enter the Account Balance? 100 Is the Account Active? </pre>

# 7	Error handling for entering other than the defined account type	<pre> Enter the Account Type Loans Invalid choice, please choose Deposit,Savings or Loan Enter the Account Type? Loan Enter the Account Balance? </pre>
# 8	Name restriction. Should be 3 characters at least	<pre> How many accounts you would like to create? 1 Creating Accounts... The Account ID for the new account is: 6 Enter the name of the Account Holder Jo Enter the Account Type Loan Enter the Account Balance? 900 Is the Account Active? true Please check if Name contains atleast three characters and please have a minimum balance of Rs 100 Account 6 Creation Failed, Please Create Another Account <-----Bank Of Bengaluru: Banking Application using Tree Map-----> </pre>

2. Import as we go! - concurrent execution.

#1	Snapshot of existing data	<pre> 2 Fetching Accounts... Account{id=1, name='Saminathan Raju', type='LOAN', balance=122.0, active=true, created on=01-Mar-2023, updated on=null} Account{id=2, name='Poornima', type='DEPOSIT', balance=101.0, active=true, created on=01-Jan-2023, updated on=null} Account{id=3, name='Vihaan Saminathan', type='SAVINGS', balance=9901.0, active=false, created on=01-Feb-2023, updated on=null} Account{id=4, name='Ahaana Saminathan', type='DEPOSIT', balance=100.0, active=true, created on=01-Jan-2023, updated on=null} Account{id=5, name='Raju V', type='LOAN', balance=100.0, active=true, created on=01-Mar-2023, updated on=null} <-----Bank Of Bengaluru: Banking Application using Tree Map-----> </pre> <p>Create date is supplied by the code for each account type and updated date is the current date when an update takes place.</p>
#2	Snapshot of the file (create date is towards the end)	<p>This “create date” will supersede the create date the code supplies.</p> 
#3	Actual file I used, with create	 <p>account.txt</p>

	date being towards the end	
#4	File path is relative	<pre>1 usage 👤 Chandrasekaran @Override public synchronized void ImportData() { try (Scanner in = new Scanner(new FileReader(fileName: "./input/account.txt"))) {</pre>

#5	Thread started but manual addition permitted	<pre>main Import Started <-----Bank Of Bengaluru: Banking Application using Tree Map-----> Menu: 1. Create Accounts 2. List all Accounts 3. View an Account 4. Update an Account 5. Delete an Account 6. Print Statistics 7. Import 8. Export 9. Exit Thread[pool-1-thread-1,5,main] Waiting to start importing 1 How many accounts you would like to create? 1 Creating Accounts... The Account ID for the new account is: 7 Enter the name of the Account Holder Vasanthi R Enter the Account Type Loan Enter the Account Balance? 101 Is the Account Active? true Accounts created successfully <-----Bank Of Bengaluru: Banking Application using Tree Map-----> Menu: 1. Create Accounts 2. List all Accounts 3. View an Account 4. Update an Account 5. Delete an Account 6. Print Statistics 7. Import 8. Export 9. Exit pool-1-thread-1 Accounts data imported successfully.</pre>	
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#6	Import completion thread confirmation	<pre> Accounts created successfully <-----Bank Of Bengaluru: Banking Application using Tree Map-----> Menu: 1. Create Accounts 2. List all Accounts 3. View an Account 4. Update an Account 5. Delete an Account 6. Print Statistics 7. Import 8. Export 9. Exit pool-1-thread-1 Accounts data imported successfully. </pre>	
#7	Showing all account	<pre> Fetching Accounts... Account{id=1, name='Saminathan Raju', type='LOAN', balance=122.0, active=true, created on=01-Mar-2023, updated on=null} Account{id=2, name='Poornima', type='DEPOSIT', balance=101.0, active=true, created on=01-Jan-2023, updated on=null} Account{id=3, name='Vihaan Saminathan', type='SAVINGS', balance=9901.0, active=false, created on=01-Feb-2023, updated on=null} Account{id=4, name='Ahaana Saminathan', type='DEPOSIT', balance=100.0, active=true, created on=01-Jan-2023, updated on=null} Account{id=100, name='Foo Kumar', type='LOAN', balance=500000.0, active=false, created on=01-Sep-2022, updated on=null} Account{id=5, name='Raju V', type='LOAN', balance=100.0, active=true, created on=01-Mar-2023, updated on=null} Account{id=101, name='Kumaran', type='LOAN', balance=200000.0, active=false, created on=11-May-2021, updated on=null} Account{id=102, name='ChaKumarndru', type='SAVINGS', balance=4000.0, active=false, created on=11-Jun-2022, updated on=null} Account{id=103, name='Foo', type='DEPOSIT', balance=1200.0, active=true, created on=12-Jan-2023, updated on=null} Account{id=7, name='Vasanthi R', type='LOAN', balance=101.0, active=true, created on=01-Mar-2023, updated on=null} Account{id=104, name='GaneshKuMaRh', type='SAVINGS', balance=6000.0, active=true, created on=26-Jan-2022, updated on=null} Account{id=105, name='Priya', type='DEPOSIT', balance=1800.0, active=false, created on=17-Sep-1983, updated on=null} <-----Bank Of Bengaluru: Banking Application using Tree Map-----> </pre>	

#8	Finding the account Id	<pre>3 View details of the given Account id... Enter the Account ID: 7 Account Id: 7 Account Name: Vasanthi R Account Type: LOAN Account Balance: 101.0 Is the account active? true <-----Bank Of Bengaluru: Banking Application using Tree Map-----></pre>
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#9	Printing the statistics	<pre>***** Printing the Statistics ***** No of accounts with Balance over 1 lac is: 2 ----- ***Number of accounts by the Account Type*** {LOAN=5, SAVINGS=3, DEPOSIT=4} Account Type: LOAN; Count: 5 Account Type: SAVINGS; Count: 3 Account Type: DEPOSIT; Count: 4 ----- ***Number of accounts by the Account Type: Sorted*** Account Type: DEPOSIT; Count: 4 Account Type: LOAN; Count: 5 Account Type: SAVINGS; Count: 3 ----- ***Average Balance by the Account Type: {DEPOSIT=800.25, LOAN=140064.6, SAVINGS=6633.666666666667} ----- ***Account Ids containing the name: Kumar 100 101 102 104 ----- ***Average account age (in days) for each type ----- Average Age for LOAN is: 288.0 Average Age for SAVINGS is: 350.0 Average Age for DEPOSIT is: 3764.0</pre>
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3. Listing all accounts

#1	Listing all the accounts created during the above steps	<p>Created date is generated by the code; and updated date is current date when the update takes place.</p> <pre> Fetching Accounts... Account{id=1, name='Saminathan Raju', type='LOAN', balance=122.0, active=true, created on=01-Mar-2023, updated on=null} Account{id=2, name='Poornima', type='DEPOSIT', balance=101.0, active=true, created on=01-Jan-2023, updated on=null} Account{id=3, name='Vihaan Saminathan', type='SAVINGS', balance=9901.0, active=false, created on=01-Feb-2023, updated on=null} Account{id=4, name='Ahaana Saminathan', type='DEPOSIT', balance=100.0, active=true, created on=01-Jan-2023, updated on=null} Account{id=100, name='Foo Kumar', type='LOAN', balance=500000.0, active=false, created on=01-Sep-2022, updated on=null} Account{id=5, name='Raju V', type='LOAN', balance=100.0, active=true, created on=01-Mar-2023, updated on=null} Account{id=101, name='Kumaran', type='LOAN', balance=200000.0, active=false, created on=11-May-2021, updated on=null} Account{id=102, name='ChaKumarndru', type='SAVINGS', balance=4000.0, active=false, created on=11-Jun-2022, updated on=null} Account{id=103, name='Foo', type='DEPOSIT', balance=1200.0, active=true, created on=12-Jan-2023, updated on=null} Account{id=7, name='Vasanthi V', type='LOAN', balance=9999.0, active=true, created on=01-Mar-2023, updated on=2023-06-29} Account{id=104, name='GaneshKuMaRh', type='SAVINGS', balance=6000.0, active=true, created on=26-Jan-2022, updated on=null} Account{id=105, name='Priya', type='DEPOSIT', balance=1800.0, active=false, created on=17-Sep-1983, updated on=null} <-----Bank Of Bengaluru: Banking Application using Tree Map-----> </pre>
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4. Viewing an account

#1	Entering the proper Account ID	
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		<pre>3 View details of the given Account id... Enter the Account ID: 7 Account Id: 7 Account Name: Vasanthi V Account Type: LOAN Account Balance: 9999.0 Is the account active? true <-----Bank Of Bengaluru: Banking Application using Tree Map-----></pre>	
#2	Entering incorrect Account ID	<pre>View details of the given Account id... Enter the Account ID: 777 Account not found! <-----Bank Of Bengaluru: Banking Application using Tree Map-----></pre>	

5. Updating an account

# 1	Updating on a valid account Id	<pre>4 Update an Account for a given Account id... Enter the Account ID: 7 Enter the name of the Account Holder Vasanthi V Enter the Account Type Loan Enter the Account Balance? 9999 Is the Account Active? true Account Updated</pre>
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# 2	Viewing all the accounts (including the updated one)	<pre> 2 Fetching Accounts... Account{id=1, name='Saminathan Raju', type='LOAN', balance=122.0, active=true, created on=01-Mar-2023, updated on=null} Account{id=2, name='Poornima', type='DEPOSIT', balance=101.0, active=true, created on=01-Jan-2023, updated on=null} Account{id=3, name='Vihaan Saminathan', type='SAVINGS', balance=9901.0, active=false, created on=01-Feb-2023, updated on=null} Account{id=4, name='Ahaana Saminathan', type='DEPOSIT', balance=100.0, active=true, created on=01-Jan-2023, updated on=null} Account{id=100, name='Foo Kumar', type='LOAN', balance=500000.0, active=false, created on=01-Sep-2022, updated on=null} Account{id=5, name='Raju V', type='LOAN', balance=100.0, active=true, created on=01-Mar-2023, updated on=null} Account{id=101, name='Kumaran', type='LOAN', balance=200000.0, active=false, created on=11-May-2021, updated on=null} Account{id=102, name='ChaKumarndru', type='SAVINGS', balance=4000.0, active=false, created on=11-Jun-2022, updated on=null} Account{id=103, name='Foo', type='DEPOSIT', balance=1200.0, active=true, created on=12-Jan-2023, updated on=null} Account{id=7, name='Vasanthi V', type='LOAN', balance=9999.0, active=true, created on=01-Mar-2023, updated on=2023-06-15} Account{id=104, name='GaneshKuMaRh', type='SAVINGS', balance=6000.0, active=true, created on=26-Jan-2022, updated on=null} Account{id=105, name='Priya', type='DEPOSIT', balance=1800.0, active=false, created on=17-Sep-1983, updated on=null} <-----Bank Of Bengaluru: Banking Application using Tree Map-----> </pre>
# 3	Trying to update an invalid account Id; and getting error	<pre> 3 View details of the given Account id... Enter the Account ID: 777 Account not found! <-----Bank Of Bengaluru: Banking Application using Tree Map-----> </pre>
# 4	You can see the date is changed for the	<pre> Account{id=7, name='Vasanthi V', type='LOAN', balance=9999.0, active=true, created on=01-Mar-2023, updated on=2023-06-15} </pre>

	update field	
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6. Deleting an account

#1	Valid account deletion, and confirmation; Viewing the account to ensure it is gone	<pre> Enter the Account ID to be deleted: 100 Account Deleted <-----Bank Of Bengaluru: Banking Application using Tree Map-----> Menu: 1. Create Accounts 2. List all Accounts 3. View an Account 4. Update an Account 5. Delete an Account 6. Print Statistics 7. Import 8. Export 9. Exit 2 Fetching Accounts... Account{id=1, name='Saminathan Raju', type='LOAN', balance=122.0, active=true, created on=01-Mar-2023, updated on=null} Account{id=2, name='Poornima', type='DEPOSIT', balance=101.0, active=true, created on=01-Jan-2023, updated on=null} Account{id=3, name='Vihaan Saminathan', type='SAVINGS', balance=9901.0, active=false, created on=01-Feb-2023, updated on=null} Account{id=4, name='Ahaana Saminathan', type='DEPOSIT', balance=100.0, active=true, created on=01-Jan-2023, updated on=null} Account{id=5, name='Raju V', type='LOAN', balance=100.0, active=true, created on=01-Mar-2023, updated on=null} Account{id=101, name='Kumaran', type='LOAN', balance=200000.0, active=false, created on=11-May-2021, updated on=null} Account{id=102, name='ChaKumarndru', type='SAVINGS', balance=4000.0, active=false, created on=11-Jun-2022, updated on=null} Account{id=103, name='Foo', type='DEPOSIT', balance=1200.0, active=true, created on=12-Jan-2023, updated on=null} Account{id=7, name='Vasanthi V', type='LOAN', balance=9999.0, active=true, created on=01-Mar-2023, updated on=2023-06-29} Account{id=104, name='GaneshKuMaRh', type='SAVINGS', balance=6000.0, active=true, created on=26-Jan-2022, updated on=null} Account{id=105, name='Priya', type='DEPOSIT', balance=1800.0, active=false, created on=17-Sep-1983, updated on=null} <-----Bank Of Bengaluru: Banking Application using Tree Map-----> Menu: 1. Create Accounts 2. List all Accounts 3. View an Account 4. Update an Account 5. Delete an Account 6. Print Statistics 7. Import 8. Export 9. Exit </pre>	
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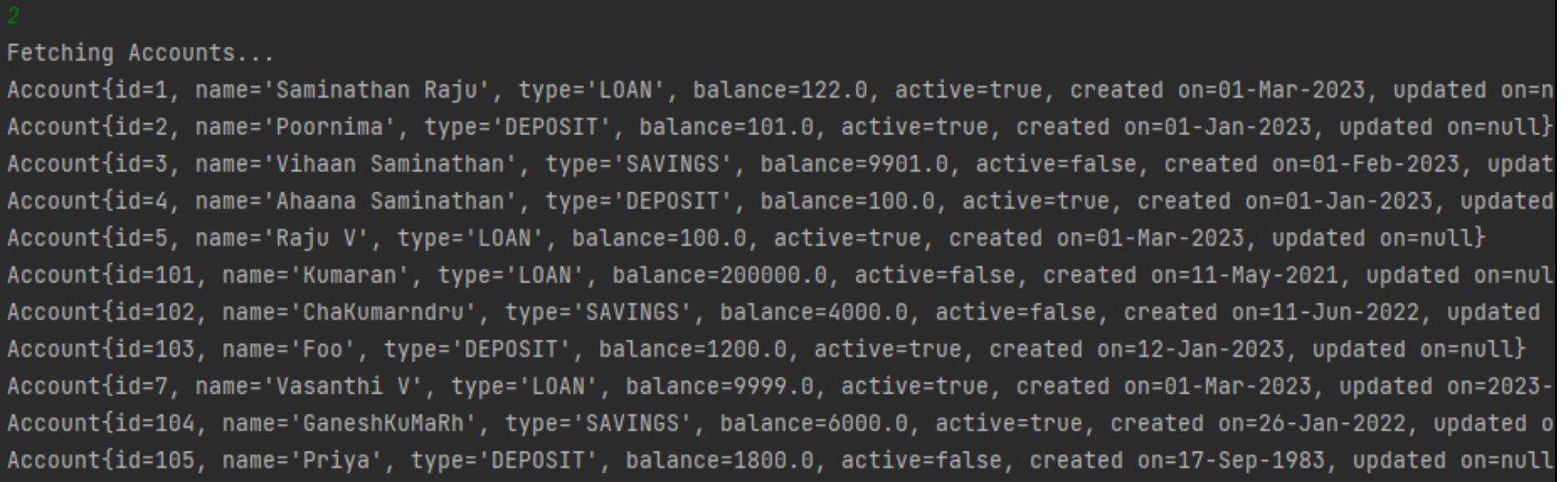
7. Printing the statistics

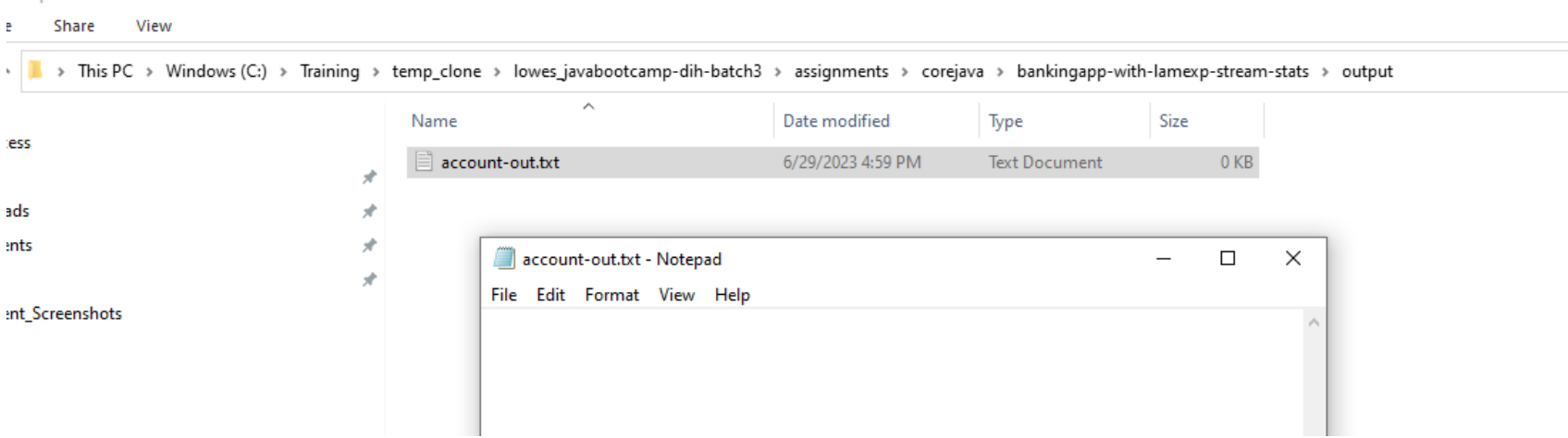
#1	Printing the data statistics	Including the average age for each account type
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***** Printing the Statistics *****
No of accounts with Balance over 1 lac is: 2
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***Number of accounts by the Account Type***
{LOAN=5, SAVINGS=3, DEPOSIT=4}
Account Type: LOAN; Count: 5
Account Type: SAVINGS; Count: 3
Account Type: DEPOSIT; Count: 4
-----
***Number of accounts by the Account Type: Sorted***
Account Type: DEPOSIT; Count: 4
Account Type: LOAN; Count: 5
Account Type: SAVINGS; Count: 3
-----
***Average Balance by the Account Type:
{DEPOSIT=800.25, LOAN=142044.2, SAVINGS=6633.666666666667}
-----
***Account Ids containing the name: Kumar
100
101
102
104
-----
***Average account age (in days) for each type
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Average Age for LOAN is: 288.0
Average Age for SAVINGS is: 350.0
Average Age for DEPOSIT is: 3764.0
<-----Bank Of Bengaluru: Banking Application using Tree Map----->
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8. Export

#	Screenshot of the complete data	
1		

# 2	The empty file before export	
# 3	Export's relative path	<pre><code>@Override public void ExportData() { try (FileWriter out = new FileWriter(fileName: "./output/account-out.txt")) { for (Map.Entry<Integer, Account> entry : accTreeMap.entrySet()) { int id = entry.getKey();</code></pre>
# 4	Exported file	You can see both “created date” and “updated date”

BANK OF BENGALURU: BANKING APPLICATION USING TREE MAP – LAMBDA

Poornima Chandrasekaran

This PC > Windows (C:) > Training > temp_clone > lowes_javabootcamp-dih-batch3 > assignments > corejava > bankingapp-with-lamexp-stream-stats > output

Name	Date modified	Type	Size
account-out.txt	6/29/2023 5:00 PM	Text Document	1 KB

enshots

nal

account-out.txt

account-out.txt - Notepad

File Edit Format View Help

```
1,Saminathan Raju,LOAN,122.0,true,2023-03-01,null,  
2,Poornima,DEPOSIT,101.0,true,2023-01-01,null,  
3,Vihaan Saminathan,SAVINGS,9901.0,false,2023-02-01,null,  
4,Ahaana Saminathan,DEPOSIT,100.0,true,2023-01-01,null,  
5,Raju V,LOAN,100.0,true,2023-03-01,null,  
101,Kumaran,LOAN,200000.0,false,2021-05-11,null,  
102,ChaKumarndru,SAVINGS,4000.0,false,2022-06-11,null,  
103,Foo,DEPOSIT,1200.0,true,2023-01-12,null,  
7,Vasanthi V,LOAN,9999.0,true,2023-03-01,2023-06-29,  
104,GaneshKuMaRh,SAVINGS,6000.0,true,2022-01-26,null,  
105,Priya,DEPOSIT,1800.0,false,1983-09-17,null,
```

# 5	Threaded execution for Export start	<pre>8 main Export Started <-----Bank Of Bengaluru: Banking Application using Tree Map-----> Menu: 1. Create Accounts 2. List all Accounts 3. View an Account 4. Update an Account 5. Delete an Account 6. Print Statistics 7. Import 8. Export 9. Exit Thread[pool-1-thread-2,5,main] Waiting to start exporting</pre>	
# 6	Threaded execution for export complete		

		<pre> main Export Started <-----Bank Of Bengaluru: Banking Application using Tree Map-----> Menu: 1. Create Accounts 2. List all Accounts 3. View an Account 4. Update an Account 5. Delete an Account 6. Print Statistics 7. Import 8. Export 9. Exit Thread[pool-1-thread-2,5,main] Waiting to start exporting pool-1-thread-2 Account data exported successfully. </pre>	
# 7	Message confirmatio n	<pre> pool-1-thread-2 Account data exported successfully. </pre>	

9. Exiting from the application

#1	Entering proper index to exit the application. Thank you, message appears!	<pre> Thank you for visiting Bank Of Bengaluru. Have a nice day! </pre>	
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