

Test Design for “Opening” an account				
Test Case #	Requirements	Test Description and Input Data	Expected result	Actual result
1	Nothing inputted or selected	“Literally nothing”	“Missing data for opening an account”	“Missing data for opening an account”
2	Successfully open a Checking Account	First name: John Last name: Doe Dob: 3/1/2022 Account Type: Checking Initial deposit: 5000	“Checking account of John Doe 3/1/2022 is newly opened!”	“Checking account of John Doe 3/1/2022 is newly opened!”
3	Successfully open a College Checking Account	First name: Amogh Last name: Doe Dob: 3/1/2022 Account Type: College Checking Campus: New Brunswick Initial deposit: 5000	“College Checking account of Amogh Doe 3/1/2022 is newly opened!”	“College Checking account of Amogh Doe 3/1/2022 is newly opened!”
4	Successfully open a Savings Account	First name: Amogh Last name: Doe Dob: 3/1/2022 Account Type: Savings Initial deposit: 5000	“Savings account of Amogh Doe 3/1/2022 is newly opened!”	“Savings account of Amogh Doe 3/1/2022 is newly opened!”
5	Successfully open a Money Market Account	First name: Amogh Last name: Doe Dob: 3/1/2022 Account Type: Money Market Initial deposit: 5000	“Money Market account of Amogh Doe 3/1/2022 is newly opened!”	“Money Market account of Amogh Doe 3/1/2022 is newly opened!”

6	Only First name inputted, other fields not inputted	First name: Minseok	"Missing data for opening an account"	"Missing data for opening an account"
7	Only Last name inputted, other fields not inputted	Last name: Park	"Missing data for opening an account"	"Missing data for opening an account"
8	Only Date of Birth inputted, other fields not inputted	Dob: 3/1/2022	"Missing data for opening an account"	"Missing data for opening an account"
9	Invalid Initial Deposit (negative initial deposit)	First name: Amogh Last name: Doe Dob: 3/1/2022 Account Type: Money Market Initial deposit: -100	"ERROR occurs to open an account!: Negative or zero is not valid for initial deposit! End of list of error(s). "	"ERROR occurs to open an account!: Negative or zero is not valid for initial deposit! End of list of error(s). "
10	Invalid Initial Deposit for Money Market account. (Initial deposit for MM cannot be less than \$2500)	First name: Amogh Last name: Doe Dob: 3/1/2022 Account Type: Money Market Initial deposit:1000	"ERROR occurs to open an account!: Minimum amount of initial deposit for Money Market account is 2500! End of list of error(s)."	"ERROR occurs to open an account!: Minimum amount of initial deposit for Money Market account is 2500! End of list of error(s)."
11	Account type not selected	First name: Amogh Last name: Doe Dob: 3/1/2022	"Missing data for opening an account"	"Missing data for opening an account"
12	College Campus not selected while opening a College Checking account	First name: Amogh Last name: Doe Dob: 3/1/2022	"ERROR occurs to open an account!: Select one of the colleges in the option! End of list of error(s)."	"ERROR occurs to open an account!: Select one of the colleges in the option! End of list of error(s)."

13	Same person cannot open both Checking and College Checking at the same time	<div>1st time(opened)</div> <div>First name: John</div> <div>Last name: Doe</div> <div>Dob: 3/1/2022</div> <div>Acc Type: Checking</div> <div>2nd time</div> <div>First name: John</div> <div>Last name: Doe</div> <div>Dob: 3/1/2022</div> <div>Acc Type: CC</div>	"John Doe 3/1/2022 already has same type of account in the database."	"John Doe 3/1/2022 already has same type of account in the database."
14	A person cannot open a same type of Account twice	<div>1st time(opened)</div> <div>First name: John</div> <div>Last name: Doe</div> <div>Dob: 3/1/2022</div> <div>Acc Type: Checking</div> <div>2nd time</div> <div>First name: John</div> <div>Last name: Doe</div> <div>Dob: 3/1/2022</div> <div>Acc Type: Checking</div>	"John Doe 3/1/2022 already has same type of account in the database."	"John Doe 3/1/2022 already has same type of account in the database."
15	A person reopens an account that was closed	<div>1st time(closed)</div> <div>First name: John</div> <div>Last name: Doe</div> <div>Dob: 3/1/2022</div> <div>Acc Type: C/CC/MM/S</div> <div>2nd time(reopened)</div> <div>First name: John</div> <div>Last name: Doe</div> <div>Dob: 3/1/2022</div> <div>Acc Type: C/CC/MM/S</div>	<div>"Checking account of John Doe 3/1/2022 has been REopened!"</div> <div>OR</div> <div>"College Checking account of John Doe 3/1/2022 has been REopened!"</div> <div>OR</div> <div>"Money Market account of John Doe 3/1/2022 has been REopened!"</div> <div>OR</div> <div>"Savings account of John Doe 3/1/2022 has been REopened!"</div> <div>(respectively, depending on the Account type)</div>	<div>"Checking account of John Doe 3/1/2022 has been REopened!"</div> <div>OR</div> <div>"College Checking account of John Doe 3/1/2022 has been REopened!"</div> <div>OR</div> <div>"Money Market account of John Doe 3/1/2022 has been REopened!"</div> <div>OR</div> <div>"Savings account of John Doe 3/1/2022 has been REopened!"</div> <div>(respectively, depending on the Account type)</div>

Test Design for “Closing”				
Test Case #	Requirements	Test Description and Input Data	Expected result	Actual result
1	Nothing inputted or selected	“Literally nothing”	“Missing data for closing an account”	“Missing data for closing an account”
2	Successfully close a Checking account that already exists	First name: John Last name: Doe Dob: 3/1/2022 Account Type: Checking	“Checking account of John Doe 3/1/2022 has been successfully closed.”	“Checking account of John Doe 3/1/2022 has been successfully closed.”
3	Successfully close a College Checking account that already exists	First name: John Last name: Doe Dob: 3/1/2022 Account Type: College Checking	“College Checking account of John Doe 3/1/2022 has been successfully closed.”	“College Checking account of John Doe 3/1/2022 has been successfully closed.”
4	Successfully close a Money Market account that already exists	First name: John Last name: Doe Dob: 3/1/2022 Account Type: Money Market	“Money Market account of John Doe 3/1/2022 has been successfully closed.”	“Money Market account of John Doe 3/1/2022 has been successfully closed.”
5	Successfully close a Savings account that already exists	First name: John Last name: Doe Dob: 3/1/2022 Account Type: Savings	“Savings account of John Doe 3/1/2022 has been successfully closed.”	“Savings account of John Doe 3/1/2022 has been successfully closed.”

6	Only First name inputted, other fields not inputted	First name: John	"Missing data for closing an account."	"Missing data for closing an account."
7	Only Last name inputted, other fields not inputted	Last name: Doe	"Missing data for closing an account."	"Missing data for closing an account."
8	Only Date of Birth inputted, other fields not inputted	Dob: 3/1/2022	"Missing data for closing an account."	"Missing data for closing an account."
9	Closing an account (Checking or College Checking or Savings or Money Market) that is not in the database	First name: James Last name: White Dob: 3/1/2022 Acc Type: Checking/CC/MM or S	"James Joe 3/1/2022 Checking is not in the database." OR "James Joe 3/1/2022 College Checking is not in the database." OR "James Joe 3/1/2022 Money Market is not in the database." OR "James Joe 3/1/2022 Savings is not in the database."  (respectively, depending on the Account type)	"James Joe 3/1/2022 Checking is not in the database." OR "James Joe 3/1/2022 College Checking is not in the database." OR "James Joe 3/1/2022 Money Market is not in the database." OR "James Joe 3/1/2022 Savings is not in the database."  (respectively, depending on the Account type)

Test Design for "Withdraw"				
Test Case #	Requirements	Test Description and Input Data	Expected result	Actual result
1	Nothing inputted or selected	"Literally nothing"	"Missing data for withdrawing"	"Missing data for withdrawing"

			from the account"	from the account"
2	Successfully withdraw from an account that exists (withdrawal amount is less than the balance)	(Balance: \$5000) First name: James Last name: White Dob: 3/1/2022 Acc Type: Checking/CC/MM or S Amount: 1000	"Withdraw successfully completed! Balance is also updated."	"Withdraw successfully completed! Balance is also updated."
3	Only First name inputted, other fields not inputted	First name: John	"Missing data for withdrawing from the account."	"Missing data for withdrawing from the account."
4	Only Last name inputted, other fields not inputted	Last name: Doe	"Missing data for withdrawing from the account."	"Missing data for withdrawing from the account."
5	Only Date of Birth inputted, other fields not inputted	Dob: 3/1/2022	"Missing data for withdrawing from the account."	"Missing data for withdrawing from the account."
6	Invalid (negative) withdrawal amount inputted	(Balance: \$5000) First name: James Last name: White Dob: 3/1/2022 Acc Type: Checking/CC/MM or S Amount: -100	"Negative or zero is not valid for withdrawals!"	"Negative or zero is not valid for withdrawals!"
7	When the withdrawal amount exceeds the balance in the Account	(Balance: \$5000) First name: James Last name: White Dob: 3/1/2022 Acc Type: Checking/CC/MM or S Amount: 10000	"The account has insufficient fund to withdraw."	"The account has insufficient fund to withdraw."
8	Withdrawing from an account that does not exist	First name: James Last name: White Dob: 3/1/2022	"James White 3/1/2022 Checking is not in the database."	"James White 3/1/2022 Checking is not in the database."

		Acc Type: Checking/CC/MM or S Amount: 1000	OR “James White 3/1/2022 College Checking is not in the database.” OR “James White 3/1/2022 Money Market is not in the database.” OR “James White 3/1/2022 Savings is not in the database.”  (respectively, depending on the Account type)	OR “James White 3/1/2022 College Checking is not in the database.” OR “James White 3/1/2022 Money Market is not in the database.” OR “James White 3/1/2022 Savings is not in the database.”  (respectively, depending on the Account type)
9	Withdrawing from an account that is already closed	(Account Closed) First name: James Last name: White Dob: 3/1/2022 Acc Type: Checking/CC/MM or S Amount: 1000	“You cannot withdraw from a closed account.”	“You cannot withdraw from a closed account.”

Test Design for “Deposit”				
Test Case #	Requirements	Test Description and Input Data	Expected result	Actual result
1	Nothing inputted or selected	“Literally nothing”	“Missing data for depositing into the account”	“Missing data for depositing into the account”
2	Successfully deposit into an account that exists	First name: James Last name: White	“Deposit successfully completed! Balance is also	“Deposit successfully completed! Balance is also

		Dob: 3/1/2022 Acc Type: Checking/CC/MM or S Amount: 1000	updated.”	updated.”
3	Only First name inputted, other fields not inputted	First name: John	“Missing data for depositing into the account”	“Missing data for depositing into the account”
4	Only Last name inputted, other fields not inputted	Last name: Doe	“Missing data for depositing into the account”	“Missing data for depositing into the account”
5	Only Date of Birth inputted, other fields not inputted	Dob: 3/1/2022	“Missing data for depositing into the account”	“Missing data for depositing into the account”
6	Invalid (negative) deposit amount inputted	First name: James Last name: White Dob: 3/1/2022 Acc Type: Checking/CC/MM or S Amount: -100	“Negative or zero is not valid for deposits!”	“Negative or zero is not valid for deposits!”
7	Depositing into account that does not exist	First name: James Last name: White Dob: 3/1/2022 Acc Type: Checking/CC/MM or S Amount: 1000	“James White 3/1/2022 Checking is not in the database.” OR “James White 3/1/2022 College Checking is not in the database.” OR “James White 3/1/2022 Money Market is not in the database.” OR “James White 3/1/2022 Savings is not in the database.” (respectively, depending on the Account type)	“James White 3/1/2022 Checking is not in the database.” OR “James White 3/1/2022 College Checking is not in the database.” OR “James White 3/1/2022 Money Market is not in the database.” OR “James White 3/1/2022 Savings is not in the database.”



				(respectively, depending on the Account type)
8	Deposit into an account that is already closed	(Account Closed) First name: James Last name: White Dob: 3/1/2022 Acc Type: Checking/CC/MM or S Amount: 1000	"You cannot deposit to a closed account."	"You cannot deposit to a closed account."

Test Design for "Print All Accounts"				
Test Case #	Requirements	Test Description and Input Data	Expected result	Actual result
1	No accounts in the database	"Literally nothing"	"Account Database is empty!"	"Account Database is empty!"
2	Successfully print the accounts in the database	(1st account) First Name: John Last Name: Doe Dob: 3/1/2022 Acc type: Checking Initial Deposit: 5000  (2nd account) First Name: James Last Name: Doe Dob: 3/1/2022 Acc type: College Checking CollegeCode: New Brunswick Initial Deposit: 5000  (3rd account)	*list of accounts in the database*  Checking::John Doe 3/1/2022::Balance \$5,000.00 College Checking::James Doe 3/1/2022::Balance \$5,000.00::NEW_BRUNSWICK Savings::Matt Doe 3/1/2022::Balance \$5,000.00::Loyal Money Market Savings::Lisa Doe 3/1/2022::Balance \$5,000.00::Loyal::withdrawl: 0  *end of list*	*list of accounts in the database*  Checking::John Doe 3/1/2022::Balance \$5,000.00 College Checking::James Doe 3/1/2022::Balance \$5,000.00::NEW_BRUNSWICK Savings::Matt Doe 3/1/2022::Balance \$5,000.00::Loyal Money Market Savings::Lisa Doe 3/1/2022::Balance \$5,000.00::Loyal::withdrawl: 0  *end of list*

		First Name:Matt Last Name: Doe Dob: 3/1/2022 Acc type: Savings Initial Deposit: 5000  (4th account) First Name:Lisa Last Name: Doe Dob: 3/1/2022 Acc type: Money Market Initial Deposit: 5000		
3	Successfully print the accounts in the database (includes the accounts that have been closed)	(1st account) First Name:John Last Name: Doe Dob: 3/1/2022 Acc type: Checking Initial Deposit: 5000  (2nd account) First Name:James Last Name: Doe Dob: 3/1/2022 Acc type: College Checking Initial Deposit: 5000  (3rd account) First Name:Matt Last Name: Doe Dob: 3/1/2022 Acc type: Savings Initial Deposit: 5000	*list of accounts in the database*  Checking::John Doe 3/1/2022::Balance \$5,000.00 College Checking::James Doe 3/1/2022::Balance \$5,000.00::NEW_BRUNSWICK Savings::Matt Doe 3/1/2022::Balance \$5,000.00::Loyal Money Market Savings::Lisa Doe 3/1/2022::Balance \$5,000.00::Loyal::withdrawl: 0 Money Market Savings::Oleum Doe 3/1/2022::Balance \$5000.00::CLOSED::withdrawl: 0  *end of list*	*list of accounts in the database*  Checking::John Doe 3/1/2022::Balance \$5,000.00 College Checking::James Doe 3/1/2022::Balance \$5,000.00::NEW_BRUNSWICK Savings::Matt Doe 3/1/2022::Balance \$5,000.00::Loyal Money Market Savings::Lisa Doe 3/1/2022::Balance \$5,000.00::Loyal::withdrawl: 0 Money Market Savings::Oleum Doe 3/1/2022::Balance \$5000.00::CLOSED::withdrawl: 0  *end of list*

		(4th account) First Name:Lisa Last Name: Doe Dob: 3/1/2022 Acc type: Money Market Initial Deposit: 5000  (5th account - CLOSED) First Name: Oleum Last Name: Doe Dob: 3/1/2022 Acc type: Money Market Initial Deposit: 5000		
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Test Design for “Print by Account Types”				
Test Case #	Requirements	Test Description and Input Data	Expected result	Actual result
1	No accounts in the database	“Literally nothing”	“Account Database is empty!”	“Account Database is empty!”
2	Successfully print the accounts by their types (sorting them by types)	(1st account) First Name:John Last Name: Doe Dob: 3/1/2022 Acc type: Checking Initial Deposit: 5000  (2nd account) First Name:James	*list of accounts by account type.  Checking::John Doe 3/1/2022::Balance \$5,000.00 College Checking::James Doe 3/1/2022::Balance \$5,000.00::NEW_BRUNSWICK Money Market Savings::Lisa Doe 3/1/2022::Balance	*list of accounts by account type.  Checking::John Doe 3/1/2022::Balance \$5,000.00 College Checking::James Doe 3/1/2022::Balance \$5,000.00::NEW_BRUNSWICK Money Market Savings::Lisa Doe 3/1/2022::Balance

		Last Name: Doe Dob: 3/1/2022 Acc type: College Checking Initial Deposit: 5000  (3rd account) First Name: Matt Last Name: Doe Dob: 3/1/2022 Acc type: Savings Initial Deposit: 5000  (4th account) First Name: Lisa Last Name: Doe Dob: 3/1/2022 Acc type: Money Market Initial Deposit: 5000  (5th account - CLOSED) First Name: Oleum Last Name: Doe Dob: 3/1/2022 Acc type: Money Market Initial Deposit: 5000	\$5,000.00::Loyal::withdrawl: 0 Money Market Savings::Oleum Doe 3/1/2022::Balance \$0.00::CLOSED::withdrawl: 0 Savings::Matt Doe 3/1/2022::Balance \$5,000.00::Loyal  *end of list.	\$5,000.00::Loyal::withdrawl: 0 Money Market Savings::Oleum Doe 3/1/2022::Balance \$0.00::CLOSED::withdrawl: 0 Savings::Matt Doe 3/1/2022::Balance \$5,000.00::Loyal  *end of list.
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Test Design for “Print with interests and Fee”				
Test Case #	Requirements	Test Description and Input Data	Expected result	Actual result

1	No accounts in the database	"Literally nothing"	"Account Database is empty!"	"Account Database is empty!"
2	Successfully print the accounts by their interests and fees	<p>(1st account)  First Name: John  Last Name: Doe  Dob: 3/1/2022  Acc type: Checking  Initial Deposit: 5000</p> <p>(2nd account)  First Name: James  Last Name: Doe  Dob: 3/1/2022  Acc type: College Checking  Initial Deposit: 5000</p> <p>(3rd account)  First Name: Matt  Last Name: Doe  Dob: 3/1/2022  Acc type: Savings  Initial Deposit: 5000</p> <p>(4th account)  First Name: Lisa  Last Name: Doe  Dob: 3/1/2022  Acc type: Money Market  Initial Deposit: 5000</p> <p>(5th account - CLOSED)  First Name: Oleum  Last Name: Doe  Dob: 3/1/2022</p>	<p>*list of accounts with fee and monthly interest</p> <p>Checking::John Doe  3/1/2022::Balance \$5,000.00::fee \$0.00::monthly interest \$0.42  College Checking::James Doe  3/1/2022::Balance \$5,000.00::NEW_BRUNSWICK::fee \$0.00::monthly interest \$1.04  Money Market Savings::Lisa Doe  3/1/2022::Balance \$5,000.00::Loyal::withdrawl: 0::fee \$0.00::monthly interest \$3.96  Money Market Savings::Oleum Doe  3/1/2022::Balance \$0.00::CLOSED::withdrawl: 0::fee \$0.00::monthly interest \$0.00  Savings::Matt Doe 3/1/2022::Balance \$5,000.00::Loyal::fee \$0.00::monthly interest \$1.88</p> <p>*end of list*</p>	<p>*list of accounts with fee and monthly interest</p> <p>Checking::John Doe  3/1/2022::Balance \$5,000.00::fee \$0.00::monthly interest \$0.42  College Checking::James Doe  3/1/2022::Balance \$5,000.00::NEW_BRUNSWICK::fee \$0.00::monthly interest \$1.04  Money Market Savings::Lisa Doe  3/1/2022::Balance \$5,000.00::Loyal::withdrawl: 0::fee \$0.00::monthly interest \$3.96  Money Market Savings::Oleum Doe  3/1/2022::Balance \$0.00::CLOSED::withdrawl: 0::fee \$0.00::monthly interest \$0.00  Savings::Matt Doe 3/1/2022::Balance \$5,000.00::Loyal::fee \$0.00::monthly interest \$1.88</p> <p>*end of list*</p>

		Acc type: Money Market Initial Deposit: 5000		
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Test Design for “Update Balance” (test with “Print All Accounts - to print updated balance”)				
Test Case #	Requirements	Test Description and Input Data	Expected result	Actual result
1	No accounts in the database	“Literally nothing”	“Account Database is empty to update”	“Account Database is empty to update”
2	Successfully update balances of the account after depositing/withdrawing	(1st account) First Name: John Last Name: Doe Dob: 3/1/2022 Acc type: Checking Initial Deposit: 5000  (2nd account) First Name: James Last Name: Doe Dob: 3/1/2022 Acc type: College Checking Initial Deposit: 5000  (3rd account) First Name: Matt	Prints: “Balances are upto date”  Then use button “Print All Accounts” to print the updated balances:  *list of accounts in the database* Checking::John Doe 3/1/2022::Balance \$5,000.42 College Checking::James Doe 3/1/2022::Balance \$5,001.04::NEW_BRUNSWICK Money Market Savings::Lisa Doe 3/1/2022::Balance \$5,003.96::Loyal::withdrawl: 0 Money Market Savings::Oleum Doe 3/1/2022::Balance	Prints: “Balances are upto date”  Then use button “Print All Accounts” to print the updated balances:  *list of accounts in the database* Checking::John Doe 3/1/2022::Balance \$5,000.42 College Checking::James Doe 3/1/2022::Balance \$5,001.04::NEW_BRUNSWICK Money Market Savings::Lisa Doe 3/1/2022::Balance \$5,003.96::Loyal::withdrawl: 0 Money Market Savings::Oleum Doe 3/1/2022::Balance

		<p>Last Name: Doe Dob: 3/1/2022 Acc type: Savings Initial Deposit: 5000</p> <p>(4th account) First Name:Lisa Last Name: Doe Dob: 3/1/2022 Acc type: Money Market Initial Deposit: 5000</p> <p>(5th account - CLOSED) First Name: Oleum Last Name: Doe Dob: 3/1/2022 Acc type: Money Market Initial Deposit: 5000</p>	<p>\$0.00::CLOSED::withdrawl: 0 Savings::Matt Doe 3/1/2022::Balance \$5,001.88::Loyal</p> <p>*end of list*</p>	<p>\$0.00::CLOSED::withdrawl: 0 Savings::Matt Doe 3/1/2022::Balance \$5,001.88::Loyal</p> <p>*end of list*</p>
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