# Source Code Errors

These tests failed due to errors and missing requirements in the rapid prototype.

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| Test Failed | Problem | Fix |
| No tests finished | Program is not closing when the input file ends. | Added while loop condition to close when std::cin reaches EOF. |
| with012  payb010  dsbl006 | Expected trans files are missing final logout. | Add final logout to the transaction file. |
| logn000-3  with000-16  tran000-7  payb000-14  depo000-7  crte000-6  delt000-6  dsbl000-016  enab000-4  chng000-4  logt000 | Input buffer overflow if the inputs are larger than expected. | Use GetString, GetInteger, and GetDouble functions instead of using an input buffer. |
| depo002—7  enab004  payb006-14  with005-16 | |  | | --- | | Certain test cases failed; as the program was not yet printing out account balances. | | Add Print statements for account balances. |
| crte001 | Program terminates early if the name is longer than 20 characters. | Change the code so name string is truncated if it is longer than 20 characters. |
| crte004 | Program allows initial balance larger than 99999.99. | Add if statement to limit max initial limit. |
| depo001 | User is able to input negative values. | Add if statement to make the deposit value be greater than 0. |
| depo002,3 | Program is accepting non-numeric and larger values than should be accepted. | Add if statement to limit max initial limit and surround with a try catch that will catch the exception thrown by the parse of the input if that input is not a number. |
| depo003 | After a change from reading to a buffer, to the get double command the program was outputting values too small errors for non-numeric values. | I changed the implementation of GetDouble to use the exception throwing functions, and to return an error value when the number parse failed. Then removed the try/catch loop and had the program check for these error values. |
| payb000 | When admin uses pay bill it deducts from the pay bill limit. | Add if statement to check whether the transaction was performed by an admin or a use. |
| payb001,7 | Accepting Incorrect company names. | Add statements to reject transaction if company does not exist. |
| payb004 | Found that value checker only checks limit rather than checking formatting. | Add class to check the format of outputs for various functions |
| with005-008  depo006 | Program did not print transaction fees separately. | Split up PushTrasactionRecord calls into two one for amount the other for transaction fees. |
| enab004  with011 | Found that withdrawal by admins deducts from withdrawal limit | Add statements to check if current session is admin before deducting from limit. |
| payb000  tran003 | Transaction file pushed transaction charge of 0 when admin | Add statements to check whether current session is admin before adding the transaction code to buffer. |
| payb001 | Found that errors printed by paybill were not specific e.g. “COMPANY NAME IS INVALID” rather than “IS NOT A VALID COMPANY NAME”, “IS NOT TWO CHARACTERS” | Added different error messages for different errors. |
| payb003 | Found that negative inputs were accepted. | Added checking for inputs below zero. |
| payb007 | Found that paybill limit encumbered admins. | Added standard mode condition to the limit check. |
| payb012  with014 | Found that rounding error was preventing a transaction resulting in a balance of 0 | Only rejected transaction when balance would become <=-0.01 and reset balance to 0. |
| depo006 | Found that all company names passed. | Added checking for company names in system. |
| depo006 | Found that company existence was returning flipped | Changed check from == to != |
| depo007 | Found that negative balances were being printed | Added assertion to print function, and set printout to be an absolute value. |
| depo007 | Found that held funds were factored into sufficient balance check | Removed amount term from check |
| tran001 | Found that error message was not specific about the self-transfer state. | Created new else if clause that would print the error message. |
| tran001 | Realized that accounts could not transfer to themselves. | Created new test case (tran008) for this scenario, and passed it. |
| tran002 | Found that zero dollars was accepted. | Added check for zero dollars in transfer function. |
| tran005 | Failed because output had things like 1001>1000 | Removed forgotten code injection from transfer function. |
| tran006 | Found that character values were not rejected | Added check to reject these & added standardized currency checks (format\_check.cpp & .h) and implemented throughout commands.cc |
| None | While checking a requirement on #requirements, realized that there was no test cases to prevent maximum balance from being exceeded through accumulation. | Added test cases trans009 and depo008 and then added check statements to pass them. |
| with000 | Found that program asked for withdrawal amount before rejecting account. | Put check before prompt for withdrawal amount. |
| with003 | Found that program was not as specific about invalid symbols as the expected output. | Added additional error messages for $ and , |
| with007 | Found that withdrawal did not check limit. | Changed to reject transaction when withdrawal limit was breached. |
| with011 | Found that withdrawal limit was being applied to admins. | Changed condition to check whether session was standard as well. |

# Test Suite Errors

Some tests failed due to erroneous test file input, rather than issues in the test code.

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| Test Failed | Problem | Fix |
| Logn000-003  with000-016  tran000-007  payb000-014  depo000-007  crte000-006  delt000-006  dsbl000-016  enab000-004  chng000-004  logt000 | Expected output does not use the same language as the programs. | Edit language in the test so it will match expected output from the program. |
| logn000-3  with000-16  tran000-7  payb000-14  depo000-7  crte000-6  delt000-6  dsbl000-016  enab000-4  chng000-4  logt000 | There was an extra "Please enter a command" was at the end of most of our actual inputs but not in our expected. | Add "Please enter a command" to the end of the expected output. |
| logn000-3  with000-16  tran000-7  payb000-14  depo000-7  crte000-6  delt000-6  dsbl000-016  enab000-4  chng000-4  logt000 | The problem was that some of our test cases were failing due to a  double prompt at the end. | Ensure that there is no end of file newline on inputs. |
| with012  payb010  dsbl006 | Expected trans files are missing final logout. | Add final logout to the transaction file. |
| logn000-1  tran000-3,6  depo000-2  crte000-4,6  dsbl000-005,14-16 | Expected output have extra characters such as spaces and carriage returns. | Edit expected outputs to remove extra characters. |
| logn000-3  with000-16  tran000-7  payb000-14  depo000-7  crte000-6  delt000-6  dsbl000-016  enab000-4  chng000-4  logt000 | When reading from input file efo count as input preventing program from closing. | Add output to prompt for a command to separate inputs. |
| depo005 | Expected transaction file contains 03 instead of 04 and s flag when it is not required. | Edit the transaction file so it contains the proper transaction. |
| depo002 | Output file does not take into account expected charges for user deposit. | Change user output value to include fee. |
| depo002 | Certain test cases did not check account balance, and needed to account for it. | Update the .out files to contain the balances. |
| depo006 | Transition file doesn’t contain the account fees. | Add account fees to the transaction file. |
| with002  tran007  payb004  depo002 | Test cases reject values like 5, 000005, 5.0 inappropriately | Change .out and .trans to accept these values. |
| depo002 | Expected charges for admin but not user | Expected balances were corrected. |
| All depo  All with  All trans | ‘Please enter a command’ prompt was missing from .out | Missing prompt was added |
| depo006 | Missing ‘standard’ login spec in .in file | Added missing input |
| depo006 | Found that .out file sometimes prompted for account holder name in standard mode | Removed prompts |
| depo006 | Found that account fees were not in .trans file | Added account fees to .trans file |
| depo007 | Transaction charge had code 04 instead of 01 | Changed code to 01 |
| tran003 | Failed because account had insufficient funds | Changed expected values so that account wouldn’t be overdrawn |
| tran007 | Non Canadian currency was not being rejected | Considering that transfers should not be required to have only Canadian values, removed requirement and changed expected .out and .trans accordingly. |
| tran007 | Failed because account had insufficient funds. | Changed expected values to be in same partition but smaller. |
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