CODEPROVA · VERIFICATION REPORT

Monthly interest posting (CBACT04C)

Legacy system vs new system · prepared for Demo Bank

3,085 of 5,000 accounts (61.7%) would get a different result from the new system. The differences come from 4 causes, totalling $44,696.33 in absolute value (net -$37,912.83). Each cause below shows who is affected, why, and the legacy code behind it.

Reference V-d8af1845f0 · 01 Nov 2026 · CodeProva 0.5.0

4,972 Accounts compared	**1,915** Match exactly	**3,085** Get a different result	**4** Causes found
$44,696.33 total money difference (absolute)	**-$37,912.83** net change for customers (new minus legacy)	**28** accounts missing from the new output	**4 of 4** causes explained with high or medium confidence

Why the results differ

Every difference is assigned to a cause. Causes are found from the shape of the difference and from the accounts it is concentrated in, then traced to the legacy code.

Cause	Accounts	Net difference	Largest	Confidence
C2 ACCT-CURR-BAL: differs where ACCT-GROUP-ID = 'SMALLBIZ'	448	-$41,304.58	-$186.86	high
C1 ACCT-CURR-BAL: differs where TRAN-CAT-BAL is negative	607	+$3,371.73	+$16.41	high
C3 ACCT-CURR-BAL: one-cent differences	2,002	+$20.02	+$0.01	high
C4 Records missing from the new output	28	—	—	high

C2 · field ACCT-CURR-BAL

ACCT-CURR-BAL: differs where ACCT-GROUP-ID = 'SMALLBIZ'

high confidence

ACCT-CURR-BAL differs for all 448 remaining records where ACCT-GROUP-ID = 'SMALLBIZ'; the other 68 are already counted under an earlier cause. Records with other values of ACCT-GROUP-ID are not affected by this cause. The new value is lower; net effect -$41,304.58, largest single difference -$186.86 (record 41000002009).

> **Likely reason.** The legacy code handles ACCT-GROUP-ID = 'SMALLBIZ' through a fallback at CBACT04C.cbl:437; the new system produces a different result for these records.

448 accounts affected (9.0%)	**0 / 448** new value higher / lower	**-$41,304.58** net difference	**-$186.86** largest, account 41000002009

Concentration: 448 of 448 accounts where **ACCT-GROUP-ID = SMALLBIZ** are affected; 0 affected accounts lie outside that group.

Examples (largest first)

Account	Legacy	New system	Difference
41000002009	$9,403.65	$9,216.79	-$186.86
41000021799	$10,565.99	$10,379.50	-$186.49
41000022198	$10,169.15	$9,983.36	-$185.79
41000020455	$10,321.11	$10,135.40	-$185.71
41000010230	$10,252.17	$10,066.71	-$185.46

Legacy code behind it

CBACT04C.cbl:464 · computes a value that flows into ACCT-CURR-BAL

```
COMPUTE WS-MONTHLY-INT = ( TRAN-CAT-BAL * DIS-INT-RATE) / 1200
```

CBACT04C.cbl:352 · computes a value that flows into ACCT-CURR-BAL

```
ADD WS-TOTAL-INT TO ACCT-CURR-BAL
```

CBACT04C.cbl:210 · uses ACCT-GROUP-ID

```
MOVE ACCT-GROUP-ID TO FD-DIS-ACCT-GROUP-ID
```

CBACT04C.cbl:437 · sets FD-DIS-ACCT-GROUP-ID to a fixed value (a fallback)

```
MOVE 'DEFAULT' TO FD-DIS-ACCT-GROUP-ID
```

Reviewer decision: pending Accept as intended | Fix the new system | Remediate affected customers

evidence record 1014be1a-7622-53ee-9ba7-f4967b8ad412

C1 · field ACCT-CURR-BAL

high confidence

ACCT-CURR-BAL: differs where TRAN-CAT-BAL is negative

ACCT-CURR-BAL differs for 607 of the 607 records where TRAN-CAT-BAL is negative (all of them). Records where TRAN-CAT-BAL is not negative are not affected by this cause. The new value is higher; net effect $3,371.73, largest single difference $16.41 (record 41000024552).

> **Likely reason.** The legacy code applies the same calculation when TRAN-CAT-BAL is negative (no condition on its sign was found in the computing program); the new system appears to treat that case differently.

607	607 / 0	+$3,371.73	+$16.41
accounts affected (12.2%)	new value higher / lower	net difference	largest, account 41000024552

Concentration: 607 of 607 accounts where **TRAN-CAT-BAL is negative** are affected; 0 affected accounts lie outside that group.

Examples (largest first)

Account	Legacy	New system	Difference
41000024552	-$392.25	-$375.84	+$16.41
41000033151	$449.48	$465.30	+$15.82
41000019818	-$678.51	-$662.92	+$15.59
41000034256	-$43.12	-$28.13	+$14.99

Account	Legacy	New system	Difference
41000002690	$12.91	$27.56	+$14.65

Legacy code behind it

CBACT04C.cbl:352 · computes a value that flows into ACCT-CURR-BAL

```
ADD WS-TOTAL-INT TO ACCT-CURR-BAL
```

CBACT04C.cbl:464 · uses TRAN-CAT-BAL

```
COMPUTE WS-MONTHLY-INT = ( TRAN-CAT-BAL * DIS-INT-RATE) / 1200
```

Reviewer decision: pending Accept as intended | Fix the new system | Remediate affected customers

evidence record 180300f4-6a95-5dbe-93c1-0d6475da0770

C3 · field ACCT-CURR-BAL

high confidence

ACCT-CURR-BAL: one-cent differences

2,002 records differ in ACCT-CURR-BAL by exactly one cent; the new value is higher. Net effect $20.02.

Likely reason. The legacy program computes this value at CBACT04C.cbl:464 without ROUNDED, so COBOL truncates the extra decimal places. The new system's values are consistent with rounding instead.

2,002	2,002 / 0	+$20.02	+$0.01
accounts affected (40.3%)	new value higher / lower	net difference	largest, account 41000000026

Examples (largest first)

Account	Legacy	New system	Difference
41000000026	$6,072.02	$6,072.03	+$0.01
41000000045	$1,096.02	$1,096.03	+$0.01
41000000051	$6,204.77	$6,204.78	+$0.01
41000000077	$655.39	$655.40	+$0.01
41000000091	$5,613.39	$5,613.40	+$0.01

Legacy code behind it

CBACT04C.cbl:464 · computes a value that flows into ACCT-CURR-BAL

```
COMPUTE WS-MONTHLY-INT = ( TRAN-CAT-BAL * DIS-INT-RATE) / 1200
```

CBACT04C.cbl:352 · computes a value that flows into ACCT-CURR-BAL

```
ADD WS-TOTAL-INT TO ACCT-CURR-BAL
```

CBACT04C.cbl:467 · computes a value that flows into ACCT-CURR-BAL

```
ADD WS-MONTHLY-INT TO WS-TOTAL-INT
```

Reviewer decision: pending Accept as intended | Fix the new system | Remediate affected customers

evidence record 76a6db1d-3f03-5b6e-b175-e532859ca402

C4 · field (whole record)

Records missing from the new output

high confidence

28 records in the legacy output have no match in the new output. 28 of them have ACCT-ACTIVE-STATUS = 'N', and every record with that value is missing.

Likely reason. The new system appears to exclude records where ACCT-ACTIVE-STATUS = 'N'. No condition on ACCT-ACTIVE-STATUS was found in the legacy program, so it keeps these records.

28
accounts affected (0.6%)

Concentration: 28 of 28 accounts where **ACCT-ACTIVE-STATUS = N** are affected; 0 affected accounts lie outside that group.

Examples

Account	Legacy	New system
41000001135	present	missing
41000002644	present	missing
41000002835	present	missing
41000004435	present	missing
41000004590	present	missing

Reviewer decision: pending Accept as intended | Fix the new system | Remediate affected customers

evidence record e5f8d89e-700a-51a9-a74e-317f3828529d

What was compared

Legacy records were decoded with the program's own copybook (ACCOUNT-RECORD, 300 bytes, EBCDIC) and matched to the new output on ACCT-ID.

Legacy field	New system column	Compared	Differ
ACCT-GROUP-ID	rate_group	4,972	0
ACCT-ADDR-ZIP	zip_code	4,972	0
ACCT-CURR-CYC-DEBIT	cycle_debits	4,972	0
ACCT-CURR-CYC-CREDIT	cycle_credits	4,972	0
ACCT-REISSUE-DATE	reissued_on	4,972	0
ACCT-EXPIRAION-DATE	expires_on	4,972	0
ACCT-OPEN-DATE	opened_on	4,972	0
ACCT-CASH-CREDIT-LIMIT	cash_credit_limit	4,972	0
ACCT-CREDIT-LIMIT	credit_limit	4,972	0
ACCT-CURR-BAL	current_balance	4,972	3,057
ACCT-ACTIVE-STATUS	status	4,972	0

Evidence

Every input is fingerprinted, and every cause is a record in a hash-chained ledger awaiting a named reviewer's decision. Changing an input or a finding afterwards breaks the chain.

Input	File	Records	SHA-256
legacy output	ACCTDATA.after-interest.ebcdic	5,000	b14a2aa305d98a04…
legacy record layout	CVACT01Y.cpy		81a08bad15af5664…
new system output	accounts_after_interest_new.csv	4,972	35fe2cbabc090695…
legacy input (context)	TCATBAL.input.ebcdic	5,000	6e6a4a440d543237…
context record layout	CVTRA01Y.cpy		50637f13692c89b1…

Ledger: 5 records, head c6b2e08695ce50d6… · full list of differences in differences.csv.

Method: deterministic comparison, no AI. Numeric fields are compared exactly at the legacy precision unless a tolerance is set. A cause's “likely reason” is a hypothesis drawn from the difference pattern and the legacy code; it must be confirmed by a reviewer before any decision.