

MORTCBL.CBL source code listing (from PDS 'KC03C59.AMORTIZE'):

```
*-----  
IDENTIFICATION DIVISION.  
PROGRAM-ID AMORTIZE.  
*-----  
ENVIRONMENT DIVISION.  
INPUT-OUTPUT SECTION.  
FILE-CONTROL.  
    SELECT MORT-IN ASSIGN TO INFILE  
        ORGANIZATION IS SEQUENTIAL.  
    SELECT MORT-OUT ASSIGN TO OUTFILE  
        ORGANIZATION IS SEQUENTIAL.  
*-----  
DATA DIVISION.  
FILE SECTION.  
* File has record length 80.  
FD MORT-IN RECORDING MODE F  
    LABEL RECORDS ARE STANDARD.  
01 LOAN-RECORD.  
    05 IN-CONTENT          PIC          X(80).  
FD MORT-OUT RECORDING MODE F  
    LABEL RECORDS ARE STANDARD.  
01 OUTPUT-RECORD.  
    05 OUT-CONTENT         PIC          X(200).  
WORKING-STORAGE SECTION.  
01 CURR-YEAR              PIC          9999 VALUE ZERO.  
01 CURR-MONTH             PIC          99 VALUE ZERO.  
01 NUM-RATE               PIC          V9999.  
01 NUM-YEARS              PIC          99.  
01 NUM-ADD-PAYMENT        PIC          9(10)V99.  
01 TOTAL-PAYMENT          PIC          9(10)V99.
```

```

01  TOTAL-PAYMENT-STR  PIC  $$$$$$$$$$9.99.
01  MONTH              PIC  9999.
01  MONTH-STR          PIC  XXXX.
01  MONTH-PAYMENT      PIC  9(10)V99.
01  SCHED-PAYMENT      PIC  $$$$$$$$$$9.99.
01  REMAIN-PRINCIPAL   PIC  S9(10)V99.
01  BEGIN-BALANCE      PIC  $$$$$$$$$$9.99.
01  END-BALANCE        PIC  $$$$$$$$$$9.99.
01  INT-FEE-MONTH      PIC  9(10)V99.
01  INT-PAYMENT        PIC  $$$$$$$$$$9.99.
01  TOTAL-INTEREST     PIC  9(10)V99 VALUE ZERO.
01  TOTAL-INTEREST-STR PIC  $$$$$$$$$$9.99.
01  NUM-PRINCIPAL      PIC  S9(10)V99.
01  PRINC-FEE-MONTH    PIC  9(10)V99.
01  PRINC-PAYMENT      PIC  $$$$$$$$$$9.99.
01  ADD-PAYMENT        PIC  $$$$$$$$$$9.99.
01  ACTUAL-AMOUNT-PAYED PIC  9(10)V99 VALUE ZERO.
01  REG-AMOUNT-PAYED   PIC  9(10)V99 VALUE ZERO.
01  NUM-AMOUNT-MADE    PIC  9(10)V99.
01  STR-AMOUNT-MADE    PIC  $$$$$$$$$$9.99.
01  IS-HTML            PIC  X VALUE 'N' .

```

LINKAGE SECTION.

```
01  PARAMS.
```

```
    05  PARAM-LENGTH    PIC  9(4) USAGE COMP.
```

```
    05  PARAM-DATA      PIC  X(20).
```

*-----

PROCEDURE DIVISION USING PARAMS.

MAIN-PROC.

```
    IF PARAM-LENGTH = 4 AND (PARAM-DATA(1:4) = 'TEXT'
```

```
        OR PARAM-DATA(1:4) = 'HTML') THEN
```

```
        OPEN INPUT MORT-IN
```

```
OPEN OUTPUT MORT-OUT
IF PARAM-DATA(1:4) = 'HTML' THEN
    MOVE 'Y' TO IS-HTML
    MOVE '<!DOCTYPE html>' TO OUT-CONTENT
    WRITE OUTPUT-RECORD
    MOVE '<html lang="en">' TO OUT-CONTENT
    WRITE OUTPUT-RECORD
    MOVE '<head><title>Loan Amortization</title></head>'
        TO OUT-CONTENT
    WRITE OUTPUT-RECORD
    MOVE '<body>' TO OUT-CONTENT
    WRITE OUTPUT-RECORD
END-IF
ELSE
    DISPLAY 'USAGE: EXEC <PROGRAM>,PARM=(<OPTION>)'
    DISPLAY "<OPTION> - EITHER 'TEXT' OR 'HTML' FOR OUPUT FORMA
-        "T"
    GOBACK
END-IF.
READ MORT-IN NEXT RECORD.
STRING 'LOAN NAME      : ' DELIMITED BY SIZE
    IN-CONTENT DELIMITED BY SIZE
    SPACES DELIMITED BY SIZE
    INTO OUT-CONTENT.
WRITE OUTPUT-RECORD.
IF IS-HTML = 'Y' THEN PERFORM ADD-LINE-BRK END-IF.
READ MORT-IN NEXT RECORD.
IF FUNCTION TEST-NUMVAL-C(IN-CONTENT) NOT EQUAL TO ZERO THEN
    MOVE 'ERROR! LOAN AMOUNT MUST BE A NUMBER!' TO OUT-CONTENT
    WRITE OUTPUT-RECORD
    IF IS-HTML = 'Y' THEN PERFORM FINISH-HTML END-IF
```

```
        CLOSE MORT-OUT
        GOBACK
    END-IF.

    COMPUTE NUM-PRINCIPAL = FUNCTION NUMVAL-C(IN-CONTENT).
    MOVE NUM-PRINCIPAL TO REMAIN-PRINCIPAL.
    IF REMAIN-PRINCIPAL <= ZERO THEN
        MOVE 'ERROR! LOAN AMOUNT MUST BE POSITIVE!' TO OUT-CONTENT
        WRITE OUTPUT-RECORD
        IF IS-HTML = 'Y' THEN PERFORM FINISH-HTML END-IF
        CLOSE MORT-OUT
        GOBACK
    END-IF.

    STRING 'LOAN AMOUNT    : $' DELIMITED BY SIZE
           IN-CONTENT DELIMITED BY SIZE
           SPACES DELIMITED BY SIZE
           INTO OUT-CONTENT.

    WRITE OUTPUT-RECORD.

    IF IS-HTML = 'Y' THEN PERFORM ADD-LINE-BRK END-IF.
    READ MORT-IN NEXT RECORD.

    IF FUNCTION TEST-NUMVAL-C(IN-CONTENT) NOT EQUAL TO ZERO THEN
        MOVE 'ERROR! LOAN RATE MUST BE A NUMBER!' TO OUT-CONTENT
        WRITE OUTPUT-RECORD
        IF IS-HTML = 'Y' THEN PERFORM FINISH-HTML END-IF
        CLOSE MORT-OUT
        GOBACK
    END-IF.

    COMPUTE NUM-RATE = FUNCTION NUMVAL(IN-CONTENT) / 100.
    IF NUM-RATE <= ZERO THEN
        MOVE 'ERROR! LOAN RATE MUST BE POSITIVE!' TO OUT-CONTENT
        WRITE OUTPUT-RECORD
        IF IS-HTML = 'Y' THEN PERFORM FINISH-HTML END-IF
```

```
        CLOSE MORT-OUT
        GOBACK
    END-IF.

    STRING 'RATE           : ' DELIMITED BY SIZE
        FUNCTION TRIM(IN-CONTENT) DELIMITED BY SIZE
        '%' DELIMITED BY SIZE
        SPACES DELIMITED BY SIZE
        INTO OUTPUT-RECORD.

    WRITE OUTPUT-RECORD.

    IF IS-HTML = 'Y' THEN PERFORM ADD-LINE-BRK END-IF.

    READ MORT-IN NEXT RECORD.

    IF FUNCTION TEST-NUMVAL-C(IN-CONTENT) NOT EQUAL TO ZERO THEN
        MOVE 'ERROR! LOAN LENGTH MUST BE A NUMBER!' TO OUT-CONTENT
        WRITE OUTPUT-RECORD
        IF IS-HTML = 'Y' THEN PERFORM FINISH-HTML END-IF
        CLOSE MORT-OUT
        GOBACK
    END-IF.

    COMPUTE NUM-YEARS = FUNCTION NUMVAL(IN-CONTENT).

    IF NUM-YEARS <= ZERO THEN
        MOVE 'ERROR! LOAN LENGTH MUST BE POSITIVE!' TO OUT-CONTENT
        WRITE OUTPUT-RECORD
        IF IS-HTML = 'Y' THEN PERFORM FINISH-HTML END-IF
        CLOSE MORT-OUT
        GOBACK
    END-IF.

    STRING 'PERIOD (YEARS): ' DELIMITED BY SIZE
        IN-CONTENT DELIMITED BY SIZE
        SPACES DELIMITED BY SIZE
        INTO OUT-CONTENT.

    WRITE OUTPUT-RECORD.
```

```
IF IS-HTML = 'Y' THEN PERFORM ADD-LINE-BRK END-IF.
READ MORT-IN NEXT RECORD.
IF FUNCTION TEST-NUMVAL-C(IN-CONTENT) NOT EQUAL TO ZERO THEN
    MOVE 'ERROR! ADDITIONAL PAYMENT MUST BE A NUMBER!'
        TO OUT-CONTENT
    WRITE OUTPUT-RECORD
    IF IS-HTML = 'Y' THEN PERFORM FINISH-HTML END-IF
    CLOSE MORT-OUT
    GOBACK
END-IF.
COMPUTE NUM-ADD-PAYMENT = FUNCTION NUMVAL-C(IN-CONTENT).
IF NUM-ADD-PAYMENT < ZERO THEN
    MOVE 'ERROR! ADDITIONAL PAYMENT MUST BE NON-NEGATIVE!'
        TO OUT-CONTENT
    WRITE OUTPUT-RECORD
    IF IS-HTML = 'Y' THEN PERFORM FINISH-HTML END-IF
    CLOSE MORT-OUT
    GOBACK
END-IF.
MOVE NUM-ADD-PAYMENT TO ADD-PAYMENT.
STRING 'ADDT. PAYMENT : $' DELIMITED BY SIZE
    IN-CONTENT DELIMITED BY SIZE
    SPACES DELIMITED BY SIZE
    INTO OUT-CONTENT.
WRITE OUTPUT-RECORD.
IF IS-HTML = 'Y' THEN PERFORM ADD-LINE-BRK END-IF.
* NOTE: SIZE IS 154 IF NEEDED FOR SMALLER RECORD SIZE
PERFORM WRITE-TABLE-HEADER.
COMPUTE CURR-YEAR = FUNCTION NUMVAL(FUNCTION CURRENT-DATE(1:4
-    )).
COMPUTE CURR-MONTH = FUNCTION NUMVAL(FUNCTION CURRENT-DATE(5:
```

```
-      2)).  
*      THE COMPILER DOESN'T KNOW BLANKS WHEN IT SEES THEM  
      COMPUTE MONTH-PAYMENT ROUNDED = REMAIN  
-      -PRINCIPAL * FUNCTION ANNUITY((NUM-RATE / 12),  
-      (NUM-YEARS * 12)).  
      MOVE MONTH-PAYMENT TO SCHED-PAYMENT.  
      PERFORM VARYING MONTH FROM 1 BY 1 UNTIL REMAIN-PRINCIPAL <= 0  
      MOVE REMAIN-PRINCIPAL TO BEGIN-BALANCE  
      MOVE MONTH TO MONTH-STR  
      COMPUTE INT-FEE-MONTH ROUNDED = (REMAIN-PRINCIPAL * NUM-RAT  
-      E) / 12  
      MOVE INT-FEE-MONTH TO INT-PAYMENT  
      COMPUTE TOTAL-PAYMENT = MONTH-PAYMENT + NUM-ADD-PAYMENT  
      IF TOTAL-PAYMENT > (REMAIN-PRINCIPAL + INT-FEE-MONTH) THEN  
        COMPUTE TOTAL-PAYMENT = REMAIN-PRINCIPAL + INT-FEE-MONTH  
      END-IF  
      MOVE TOTAL-PAYMENT TO TOTAL-PAYMENT-STR  
      ADD TOTAL-PAYMENT TO ACTUAL-AMOUNT-PAYED  
      COMPUTE PRINC-FEE-MONTH = TOTAL-PAYMENT - INT-FEE-MONTH  
      MOVE PRINC-FEE-MONTH TO PRINC-PAYMENT  
      SUBTRACT PRINC-FEE-MONTH FROM REMAIN-PRINCIPAL  
      IF REMAIN-PRINCIPAL < ZERO THEN  
        COMPUTE REMAIN-PRINCIPAL = 0  
      END-IF  
      ADD INT-FEE-MONTH TO TOTAL-INTEREST  
      MOVE TOTAL-INTEREST TO TOTAL-INTEREST-STR  
      MOVE REMAIN-PRINCIPAL TO END-BALANCE  
      MOVE MONTH TO MONTH-STR  
      PERFORM WRITE-TABLE-ENTRY  
      ADD 1 TO CURR-MONTH  
      IF CURR-MONTH > 12 THEN
```

```
        COMPUTE CURR-MONTH = 1
        ADD 1 TO CURR-YEAR
    END-IF
END-PERFORM.

IF IS-HTML = 'Y' THEN
    MOVE SPACES TO OUT-CONTENT
    MOVE '</tbody></table>' TO OUT-CONTENT
    WRITE OUTPUT-RECORD
END-IF.

IF NUM-ADD-PAYMENT > ZERO THEN PERFORM CALC-ROI END-IF.
IF IS-HTML = 'Y' THEN PERFORM ADD-LINE-BRK END-IF.
MOVE SPACES TO OUT-CONTENT.
STRING 'PROGRAM RAN ON ' FUNCTION CURRENT-DATE(1:4) '-'
        FUNCTION CURRENT-DATE(5:2) '-'
        FUNCTION CURRENT-DATE(7:2) ' AT '
        FUNCTION CURRENT-DATE(9:2) ':'
        FUNCTION CURRENT-DATE(11:2) DELIMITED BY SIZE
        INTO OUT-CONTENT.
WRITE OUTPUT-RECORD.

IF IS-HTML = 'Y' THEN PERFORM FINISH-HTML END-IF.
CLOSE MORT-IN.
CLOSE MORT-OUT.
GOBACK.

CALC-ROI.
    MOVE NUM-PRINCIPAL TO REMAIN-PRINCIPAL.
    PERFORM VARYING MONTH FROM 1 BY 1 UNTIL REMAIN-PRINCIPAL <= 0
        COMPUTE INT-FEE-MONTH ROUNDED = (REMAIN-PRINCIPAL * NUM-RAT
-      E) / 12
        COMPUTE TOTAL-PAYMENT = MONTH-PAYMENT
        IF TOTAL-PAYMENT > (REMAIN-PRINCIPAL + INT-FEE-MONTH) THEN
```



```
        COMPUTE TOTAL-PAYMENT = REMAIN-PRINCIPAL + INT-FEE-MONTH
    END-IF
    ADD TOTAL-PAYMENT TO REG-AMOUNT-PAYED
    COMPUTE PRINC-FEE-MONTH = TOTAL-PAYMENT - INT-FEE-MONTH
    SUBTRACT PRINC-FEE-MONTH FROM REMAIN-PRINCIPAL
    END-PERFORM.

    IF IS-HTML = 'Y' THEN PERFORM ADD-LINE-BRK END-IF.
    COMPUTE NUM-AMOUNT-MADE = REG-AMOUNT-PAYED - ACTUAL-AMOUNT-P
-       AYED.

    MOVE NUM-AMOUNT-MADE TO STR-AMOUNT-MADE.
    MOVE SPACES TO OUT-CONTENT.
    WRITE OUTPUT-RECORD.
    MOVE 'RETURN ON INVESTMENT FROM ADDITIONAL PAYMENTS:'
        TO OUT-CONTENT.
    WRITE OUTPUT-RECORD.
    IF IS-HTML = 'Y' THEN PERFORM ADD-LINE-BRK END-IF.
    MOVE SPACES TO OUT-CONTENT.
    STRING 'TOTAL MADE: ' DELIMITED BY SIZE
        STR-AMOUNT-MADE DELIMITED BY SIZE
        INTO OUT-CONTENT.
    WRITE OUTPUT-RECORD.

    FINISH-HTML.

    MOVE '</body>' TO OUT-CONTENT.
    WRITE OUTPUT-RECORD.
    MOVE '</html>' TO OUT-CONTENT.
    WRITE OUTPUT-RECORD.

    ADD-LINE-BRK.

    MOVE '<br>' TO OUT-CONTENT.
    WRITE OUTPUT-RECORD.
```

WRITE-TABLE-HEADER.

IF IS-HTML = 'N' THEN

```

      MOVE ' MO | PAYMENT DATE | BEGINNING BALANCE | SCHEDULED PA
-      'YMENT | EXTRA PAYMENT | TOTAL PAYMENT | PRINCIPAL | IN
-      'TEREST | ENDING BALANCE | TOTAL INTEREST ' TO OUT-CONTENT
-      T

```

ELSE

```

      MOVE '<table><thead><tr>' TO OUT-CONTENT
      WRITE OUTPUT-RECORD
      MOVE '<th>Month</th><th>Payment Date</th><th>Beginning Bala
-      'nce</th><th>Sceduled Payment</th><th>Additional Payment</t
-      'h><th>Total Payment</th>' TO OUT-CONTENT
      WRITE OUTPUT-RECORD
      MOVE '<th>Principal</th><th>Interest</th><th>Ending Balance
-      '</th><th>Total Interest</th>' TO OUT-CONTENT
      WRITE OUTPUT-RECORD
      MOVE '</tr></thead>' TO OUT-CONTENT
      WRITE OUTPUT-RECORD
      MOVE '<tbody>' TO OUT-CONTENT
      END-IF.
      WRITE OUTPUT-RECORD.

```

WRITE-TABLE-ENTRY.

MOVE SPACES TO OUT-CONTENT

IF IS-HTML = 'N' THEN

```

      STRING MONTH-STR '|'
      '          ' CURR-MONTH '/' CURR-YEAR '|'
      BEGIN-BALANCE '|'
      SCHED-PAYMENT '|'
      ADD-PAYMENT '|'

```

```
TOTAL-PAYMENT-STR '|'
PRINC-PAYMENT '|'
INT-PAYMENT '|'
END-BALANCE '|'

TOTAL-INTEREST-STR DELIMITED BY SIZE
SPACES DELIMITED BY SIZE
INTO OUT-CONTENT

END-STRING
ELSE
    MOVE SPACES TO OUT-CONTENT
    MOVE '<tr>' TO OUT-CONTENT
    WRITE OUTPUT-RECORD
    MOVE SPACES TO OUT-CONTENT
    STRING '<td>' MONTH-STR '</td>' DELIMITED BY SIZE
        INTO OUT-CONTENT
    WRITE OUTPUT-RECORD
    MOVE SPACES TO OUT-CONTENT
    STRING '<td>' CURR-MONTH '/'
        CURR-YEAR '</td>' DELIMITED BY SIZE
        INTO OUT-CONTENT
    WRITE OUTPUT-RECORD
    MOVE SPACES TO OUT-CONTENT
    STRING '<td>' BEGIN-BALANCE '</td>' DELIMITED BY SIZE
        INTO OUT-CONTENT
    WRITE OUTPUT-RECORD
    MOVE SPACES TO OUT-CONTENT
    STRING '<td>' SCHED-PAYMENT '</td>' DELIMITED BY SIZE
        INTO OUT-CONTENT
    WRITE OUTPUT-RECORD
    MOVE SPACES TO OUT-CONTENT
    STRING '<td>' ADD-PAYMENT '</td>' DELIMITED BY SIZE
```

```
        INTO OUT-CONTENT
WRITE OUTPUT-RECORD
MOVE SPACES TO OUT-CONTENT
STRING '<td>' TOTAL-PAYMENT-STR '</td>' DELIMITED BY SIZE
        INTO OUT-CONTENT
WRITE OUTPUT-RECORD
MOVE SPACES TO OUT-CONTENT
STRING '<td>' PRINC-PAYMENT '</td>' DELIMITED BY SIZE
        INTO OUT-CONTENT
WRITE OUTPUT-RECORD
MOVE SPACES TO OUT-CONTENT
STRING '<td>' INT-PAYMENT '</td>' DELIMITED BY SIZE
        INTO OUT-CONTENT
WRITE OUTPUT-RECORD
MOVE SPACES TO OUT-CONTENT
STRING '<td>' END-BALANCE '</td>' DELIMITED BY SIZE
        INTO OUT-CONTENT
WRITE OUTPUT-RECORD
MOVE SPACES TO OUT-CONTENT
STRING '<td>' TOTAL-INTEREST-STR '</td>' DELIMITED BY SIZE
        INTO OUT-CONTENT
WRITE OUTPUT-RECORD
MOVE SPACES TO OUT-CONTENT
MOVE '</tr>' TO OUT-CONTENT
END-IF.
WRITE OUTPUT-RECORD.
```


Vista TN3270 Session A

File Edit Font Transfer Macro Options Window Help

File Edit Edit_Settings Menu Utilities Compilers Test Help

VIEW KC03C59.AMORTIZE.OUT(MORTOUT1) - 01.00 Columns 00129 00200

***** Top of Data *****

==MSG> -CAUTION- Data contains invalid (non-display) characters. Use command
 ==MSG> ==> FIND P'.' to position cursor to these
 ==MSG> -Warning- The UNDO command is not available until you change
 ==MSG> your edit profile using the command RECOVERY ON.

000001
 000002
 000003
 000004
 000005

	BALANCE	TOTAL INTEREST
000006		
000007	149835.82	\$587.50
000008	149670.89	\$1374.25
000009	149505.20	\$2060.24
000010	149338.75	\$2745.47
000011	149171.54	\$3429.94
000012	149003.56	\$4113.64
000013	148834.81	\$4796.57

Command ==> Scroll ==> PAGE

F1=Help F2=Split F3=Exit F4=Expand F5=Rfind F6=Rchange
 F7=Up F8=Down F9=Swap F10=Left F11=Right F12=Cancel

MA 0.0 11/30/24.335 05:59PM zos.ccec.unf.edu a 22/135

Vista TN3270 Session A

File Edit Font Transfer Macro Options Window Help

File Edit Edit_Settings Menu Utilities Compilers Test Help

VIEW KC03C59.AMORTIZE.OUT(MORTOUT1) - 01.00 Columns 00001 00072

000351	0345	07/2053	\$13113.03	\$851.68	\$0
000352	0346	08/2053	\$12321.45	\$851.68	\$0
000353	0347	09/2053	\$11526.24	\$851.68	\$0
000354	0348	10/2053	\$10727.39	\$851.68	\$0
000355	0349	11/2053	\$9924.88	\$851.68	\$0
000356	0350	12/2053	\$9118.69	\$851.68	\$0
000357	0351	01/2054	\$8308.80	\$851.68	\$0
000358	0352	02/2054	\$7495.20	\$851.68	\$0
000359	0353	03/2054	\$6677.87	\$851.68	\$0
000360	0354	04/2054	\$5856.80	\$851.68	\$0
000361	0355	05/2054	\$5031.96	\$851.68	\$0
000362	0356	06/2054	\$4203.34	\$851.68	\$0
000363	0357	07/2054	\$3370.93	\$851.68	\$0
000364	0358	08/2054	\$2534.70	\$851.68	\$0
000365	0359	09/2054	\$1694.64	\$851.68	\$0
000366	0360	10/2054	\$850.73	\$851.68	\$0
000367	0361	11/2054	\$2.95	\$851.68	\$0

000368 PROGRAM RAN ON 2024-11-30 AT 17:44

Command ==> Scroll ==> PAGE

F1=Help F2=Split F3=Exit F4=Expand F5=Rfind F6=Rchange
 F7=Up F8=Down F9=Swap F10=Left F11=Right F12=Cancel

MA 0.0 11/30/24.335 06:00PM zos.ccec.unf.edu a 22/7

Output For LOAN01 with HTML format (no additional payments, first row & end):

VISTA TN3270 Session A

File Edit Font Transfer Macro Options Window Help

VIEW KC03C59.AMORTIZE.OUT(MORHOUT1) - 01.00 Columns 00001 00072

***** Top of Data *****

==MSG> -CAUTION- Profile changed to CAPS OFF (from CAPS ON) because data contains lower case characters.

==MSG> -CAUTION- Data contains invalid (non-display) characters. Use command ==> FIND P'.' to position cursor to these

==MSG> -Warning- The UNDO command is not available until you change your edit profile using the command RECOVERY ON.

```
000001 <!DOCTYPE html>
000002 <html lang="en">
000003 <head><title>Loan Amortization</title></head>
000004 <body>
000005 LOAN NAME      : THIS IS A GOOD LOAN
000006 <br>
000007 LOAN AMOUNT    : $150000.00
000008 <br>
000009 RATE          : 5.5%
000010 <br>
000011 PERIOD (YEARS): 30
Command ==>
```

Scroll ==> PAGE

F1=Help F2=Split F3=Exit F4=Expand F5=Rfind F6=Rchange
F7=Up F8=Down F9=Swap F10=Left F11=Right F12=Cancel

VISTA TN3270 Session A

File Edit Font Transfer Macro Options Window Help

VIEW KC03C59.AMORTIZE.OUT(MORHOUT1) - 01.00 Columns 00001 00072

```
000012 <br>
000013 ADDT. PAYMENT : $0
000014 <br>
000015 <table><thead><tr>
000016 <th>Month</th><th>Payment Date</th><th>Beginning Balance</th><th>Scedule
000017 <th>Principal</th><th>Interest</th><th>Ending Balance</th><th>Total Inte
000018 </tr></thead>
000019 <tbody>
000020 <tr>
000021 <td>0001</td>
000022 <td>11/2024</td>
000023 <td>      $150000.00</td>
000024 <td>      $851.68</td>
000025 <td>      $0.00</td>
000026 <td>      $851.68</td>
000027 <td>      $164.18</td>
000028 <td>      $687.50</td>
000029 <td>      $149835.82</td>
Command ==>
```

Scroll ==> PAGE

F1=Help F2=Split F3=Exit F4=Expand F5=Rfind F6=Rchange
F7=Up F8=Down F9=Swap F10=Left F11=Right F12=Cancel

Vista TN3270 Session A

File Edit Font Transfer Macro Options Window Help

File Edit Edit_Settings Menu Utilities Compilers Test Help

VIEW KC03C59.AMORTIZE.OUT(MORHOUT1) - 01.00 Columns 00073 00144

```

000012
000013
000014
000015
000016 d Payment</th><th>Additional Payment</th><th>Total Payment</th>
000017 rest</th>
000018
000019
000020
000021
000022
000023
000024
000025
000026
000027
000028
000029
Command ==>
F1=Help      F2=Split    F3=Exit     F4=Expand   F5=Rfind    F6=Rchange
F7=Up        F8=Down     F9=Swap     F10=Left    F11=Right   F12=Cancel
Scroll ==> PAGE

```

MA 0.0 11/30/24.335 06:04PM zos.ccec.unf.edu a 22/79

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File Edit Font Transfer Macro Options Window Help

File Edit Edit_Settings Menu Utilities Compilers Test Help

VIEW KC03C59.AMORTIZE.OUT(MORHOUT1) - 01.00 Columns 00001 00072

```

004340 <tr>
004341 <td>0361</td>
004342 <td>11/2054</td>
004343 <td>          $2.95</td>
004344 <td>          $851.68</td>
004345 <td>          $0.00</td>
004346 <td>          $2.96</td>
004347 <td>          $2.95</td>
004348 <td>          $0.01</td>
004349 <td>          $0.00</td>
004350 <td>    $156607.76</td>
004351 </tr>
004352 </tbody></table>
004353 <br>
004354 PROGRAM RAN ON 2024-11-30 AT 17:44
004355 </body>
004356 </html>
***** Bottom of Data *****
Command ==>
F1=Help      F2=Split    F3=Exit     F4=Expand   F5=Rfind    F6=Rchange
F7=Up        F8=Down     F9=Swap     F10=Left    F11=Right   F12=Cancel
Scroll ==> PAGE

```

MA 0.0 11/30/24.335 06:05PM zos.ccec.unf.edu a 22/7

Output For LOAN03 with TEXT format (additional payments, first 7 rows & end):

Vista TN3270 Session A

File Edit Font Transfer Macro Options Window Help

File Edit Edit_Settings Menu Utilities Compilers Test Help

VIEW KC03C59.AMORTIZE.OUT(MORTOUT3) - 01.00 Columns 00001 00072

***** ***** Top of Data *****

==MSG> -CAUTION- Data contains invalid (non-display) characters. Use command
 ==MSG> ==> FIND P'.' to position cursor to these
 ==MSG> -Warning- The UNDO command is not available until you change
 ==MSG> your edit profile using the command RECOVERY ON.

000001 LOAN NAME : EXPENSIVE LOAN 15 YEAR MORTGAGE
 000002 LOAN AMOUNT : \$850000.00
 000003 RATE : 5.55%
 000004 PERIOD (YEARS): 15
 000005 ADDT. PAYMENT : \$5500

MO	PAYMENT DATE	BEGINNING BALANCE	SCHEDULED PAYMENT	EXTRA PAYME
000007 0001	11/2024	\$850000.00	\$6967.78	\$5500
000008 0002	12/2024	\$841463.47	\$6967.78	\$5500
000009 0003	01/2025	\$832887.46	\$6967.78	\$5500
000010 0004	02/2025	\$824271.78	\$6967.78	\$5500
000011 0005	03/2025	\$815616.26	\$6967.78	\$5500
000012 0006	04/2025	\$806920.71	\$6967.78	\$5500
000013 0007	05/2025	\$798184.94	\$6967.78	\$5500

Command ==> Scroll ==> PAGE

F1=Help F2=Split F3=Exit F4=Expand F5=Rfind F6=Rchange
 F7=Up F8=Down F9=Swap F10=Left F11=Right F12=Cancel

MA 0.1 11/30/24.335 06:08PM zos.ccec.unf.edu A 22/77

Vista TN3270 Session A

File Edit Font Transfer Macro Options Window Help

File Edit Edit_Settings Menu Utilities Compilers Test Help

VIEW KC03C59.AMORTIZE.OUT(MORTOUT3) - 01.00 Columns 00073 00144

***** ***** Top of Data *****

==MSG> -CAUTION- Data contains invalid (non-display) characters. Use command
 ==MSG> ==> FIND P'.' to position cursor to these
 ==MSG> -Warning- The UNDO command is not available until you change
 ==MSG> your edit profile using the command RECOVERY ON.

NT	TOTAL PAYMENT	PRINCIPAL	INTEREST	ENDING BALANCE	TOTAL
000007 .00	\$12467.78	\$8536.53	\$3931.25	\$841463.47	
000008 .00	\$12467.78	\$8576.01	\$3891.77	\$832887.46	
000009 .00	\$12467.78	\$8615.68	\$3852.10	\$824271.78	
000010 .00	\$12467.78	\$8655.52	\$3812.26	\$815616.26	
000011 .00	\$12467.78	\$8695.55	\$3772.23	\$806920.71	
000012 .00	\$12467.78	\$8735.77	\$3732.01	\$798184.94	
000013 .00	\$12467.78	\$8776.17	\$3691.61	\$789408.77	

Command ==> Scroll ==> PAGE

F1=Help F2=Split F3=Exit F4=Expand F5=Rfind F6=Rchange
 F7=Up F8=Down F9=Swap F10=Left F11=Right F12=Cancel

MA 0.0 11/30/24.335 06:09PM zos.ccec.unf.edu A 22/79

Vista TN3270 Session A

File Edit Font Transfer Macro Options Window Help

File Edit Edit_Settings Menu Utilities Compilers Test Help

VIEW KC03C59.AMORTIZE.OUT(MORTOUT3) - 01.00 Columns 00129 00200

***** Top of Data *****

==MSG> -CAUTION- Data contains invalid (non-display) characters. Use command
 ==MSG> ==> FIND P'.' to position cursor to these
 ==MSG> -Warning- The UNDO command is not available until you change
 ==MSG> your edit profile using the command RECOVERY ON.

	BALANCE	TOTAL INTEREST
000001		
000002		
000003		
000004		
000005		
000006	BALANCE	TOTAL INTEREST
000007	841463.47	\$3931.25
000008	832887.46	\$7823.02
000009	824271.78	\$11675.12
000010	815616.26	\$15487.38
000011	806920.71	\$19259.61
000012	798184.94	\$22991.62
000013	789408.77	\$26683.23

Command ==>

F1=Help F2=Split F3=Exit F4=Expand F5=Rfind F6=Rchange
 F7=Up F8=Down F9=Swap F10=Left F11=Right F12=Cancel

Scroll ==> PAGE

MA 0.0 11/30/24.335 06:09PM zos.ccec.unf.edu A 22/135

Vista TN3270 Session A

File Edit Font Transfer Macro Options Window Help

File Edit Edit_Settings Menu Utilities Compilers Test Help

VIEW KC03C59.AMORTIZE.OUT(MORTOUT3) - 01.00 Columns 00001 00072

000076	0070	08/2030	\$158012.49	\$6967.78	\$5500
000077	0071	09/2030	\$146275.52	\$6967.78	\$5500
000078	0072	10/2030	\$134484.26	\$6967.78	\$5500
000079	0073	11/2030	\$122638.47	\$6967.78	\$5500
000080	0074	12/2030	\$110737.89	\$6967.78	\$5500
000081	0075	01/2031	\$98782.27	\$6967.78	\$5500
000082	0076	02/2031	\$86771.36	\$6967.78	\$5500
000083	0077	03/2031	\$74704.90	\$6967.78	\$5500
000084	0078	04/2031	\$62582.63	\$6967.78	\$5500
000085	0079	05/2031	\$50404.29	\$6967.78	\$5500
000086	0080	06/2031	\$38169.63	\$6967.78	\$5500
000087	0081	07/2031	\$25878.38	\$6967.78	\$5500
000088	0082	08/2031	\$13530.29	\$6967.78	\$5500
000089	0083	09/2031	\$1125.09	\$6967.78	\$5500
000090					
000091	RETURN ON INVESTMENT FROM ADDITIONAL PAYMENTS:				
000092	TOTAL SAVED:		\$230712.89		
000093	PROGRAM RAN ON 2024-11-30 AT 17:44				

Command ==>

F1=Help F2=Split F3=Exit F4=Expand F5=Rfind F6=Rchange
 F7=Up F8=Down F9=Swap F10=Left F11=Right F12=Cancel

Scroll ==> PAGE

MA 0.0 11/30/24.335 06:09PM zos.ccec.unf.edu A 22/7

Output For LOAN03 with HTML format (additional payments, first row & end):

```

Vista TN3270 Session A
File Edit Font Transfer Macro Options Window Help
File Edit Edit_Settings Menu Utilities Compilers Test Help

VIEW      KC03C59.AMORTIZE.OUT(MORHOUT3) - 01.00      Columns 00001 00072
***** ***** Top of Data *****
==MSG> -CAUTION- Data contains invalid (non-display) characters. Use command
==MSG> ==> FIND P'.' to position cursor to these
==MSG> -Warning- The UNDO command is not available until you change
==MSG> your edit profile using the command RECOVERY ON.
000001 <!DOCTYPE html>
000002 <html lang="en">
000003 <head><title>Loan Amortization</title></head>
000004 <body>
000005 LOAN NAME      : EXPENSIVE LOAN 15 YEAR MORTGAGE
000006 <br>
000007 LOAN AMOUNT    : $850000.00
000008 <br>
000009 RATE          : 5.55%
000010 <br>
000011 PERIOD (YEARS): 15
000012 <br>
000013 ADDT. PAYMENT  : $5500
Command ==> Scroll ==> PAGE
F1=Help      F2=Split    F3=Exit      F4=Expand    F5=Rfind    F6=Rchange
F7=Up        F8=Down      F9=Swap      F10=Left     F11=Right   F12=Cancel

MA 0.1 11/30/24.335 06:12PM zos.ccec.unf.edu A 22/7

Vista TN3270 Session A
File Edit Font Transfer Macro Options Window Help
File Edit Edit_Settings Menu Utilities Compilers Test Help

VIEW      KC03C59.AMORTIZE.OUT(MORHOUT3) - 01.00      Columns 00001 00072
000014 <br>
000015 <table><thead><tr>
000016 <th>Month</th><th>Payment Date</th><th>Beginning Balance</th><th>Schedule
000017 <th>Principal</th><th>Interest</th><th>Ending Balance</th><th>Total Inte
000018 </tr></thead>
000019 <tbody>
000020 <tr>
000021 <td>0001</td>
000022 <td>11/2024</td>
000023 <td>      $850000.00</td>
000024 <td>      $6967.78</td>
000025 <td>      $5500.00</td>
000026 <td>      $12467.78</td>
000027 <td>      $8536.53</td>
000028 <td>      $3931.25</td>
000029 <td>      $841463.47</td>
000030 <td>      $3931.25</td>
000031 </tr>
Command ==> Scroll ==> PAGE
F1=Help      F2=Split    F3=Exit      F4=Expand    F5=Rfind    F6=Rchange
F7=Up        F8=Down      F9=Swap      F10=Left     F11=Right   F12=Cancel

MA 0.0 11/30/24.335 06:13PM zos.ccec.unf.edu A 22/7

```

Vista TN3270 Session A

File Edit Font Transfer Macro Options Window Help

File Edit Edit_Settings Menu Utilities Compilers Test Help

VIEW KC03C59.AMORTIZE.OUT(MORHOUT3) - 01.00 Columns 00073 00144

```

000014
000015
000016 d Payment</th><th>Additional Payment</th><th>Total Payment</th>
000017 rest</th>
000018
000019
000020
000021
000022
000023
000024
000025
000026
000027
000028
000029
000030
000031
Command ==> Scroll ==> PAGE
F1=Help F2=Split F3=Exit F4=Expand F5=Rfind F6=Rchange
F7=Up F8=Down F9=Swap F10=Left F11=Right F12=Cancel

```

MA 0.0 11/30/24.335 06:13PM zos.ccec.unf.edu A 22/79

Vista TN3270 Session A

File Edit Font Transfer Macro Options Window Help

File Edit Edit_Settings Menu Utilities Compilers Test Help

VIEW KC03C59.AMORTIZE.OUT(MORHOUT3) - 01.00 Columns 00001 00072

```

001008 <td> $6967.78</td>
001009 <td> $5500.00</td>
001010 <td> $1130.29</td>
001011 <td> $1125.09</td>
001012 <td> $5.20</td>
001013 <td> $0.00</td>
001014 <td> $173400.25</td>
001015 </tr>
001016 </tbody></table>
001017 <br>
001018
001019 RETURN ON INVESTMENT FROM ADDITIONAL PAYMENTS:
001020 <br>
001021 TOTAL SAVED: $230712.89
001022 <br>
001023 PROGRAM RAN ON 2024-11-30 AT 17:44
001024 </body>
001025 </html>
Command ==> Scroll ==> PAGE
F1=Help F2=Split F3=Exit F4=Expand F5=Rfind F6=Rchange
F7=Up F8=Down F9=Swap F10=Left F11=Right F12=Cancel

```

MA 0.0 11/30/24.335 06:14PM zos.ccec.unf.edu A 22/7

Output For LOAN04 with TEXT format (non-positive loan amount):

```

Vista TN3270 Session A
File Edit Font Transfer Macro Options Window Help
[Icons]
File Edit Edit_Settings Menu Utilities Compilers Test Help

VIEW          KC03C59.AMORTIZE.OUT(MORTOUT4) - 01.00          Columns 00001 00072
***** ***** Top of Data *****
==MSG> -CAUTION- Profile changed to CAPS ON (from CAPS OFF) because the
==MSG>          data does not contain any lower case characters.
==MSG> -CAUTION- Data contains invalid (non-display) characters. Use command
==MSG>          ==> FIND P',' to position cursor to these
==MSG> -Warning- The UNDO command is not available until you change
==MSG>          your edit profile using the command RECOVERY ON.
000001 LOAN NAME      : PAY ME OFF SOONER
000002 ERROR! LOAN AMOUNT MUST BE POSITIVE!
***** ***** Bottom of Data *****

Command ==>
F1=Help      F2=Split    F3=Exit      F4=Expand    F5=Rfind     F6=Rchange
F7=Up        F8=Down      F9=Swap      F10=Left     F11=Right    F12=Cancel

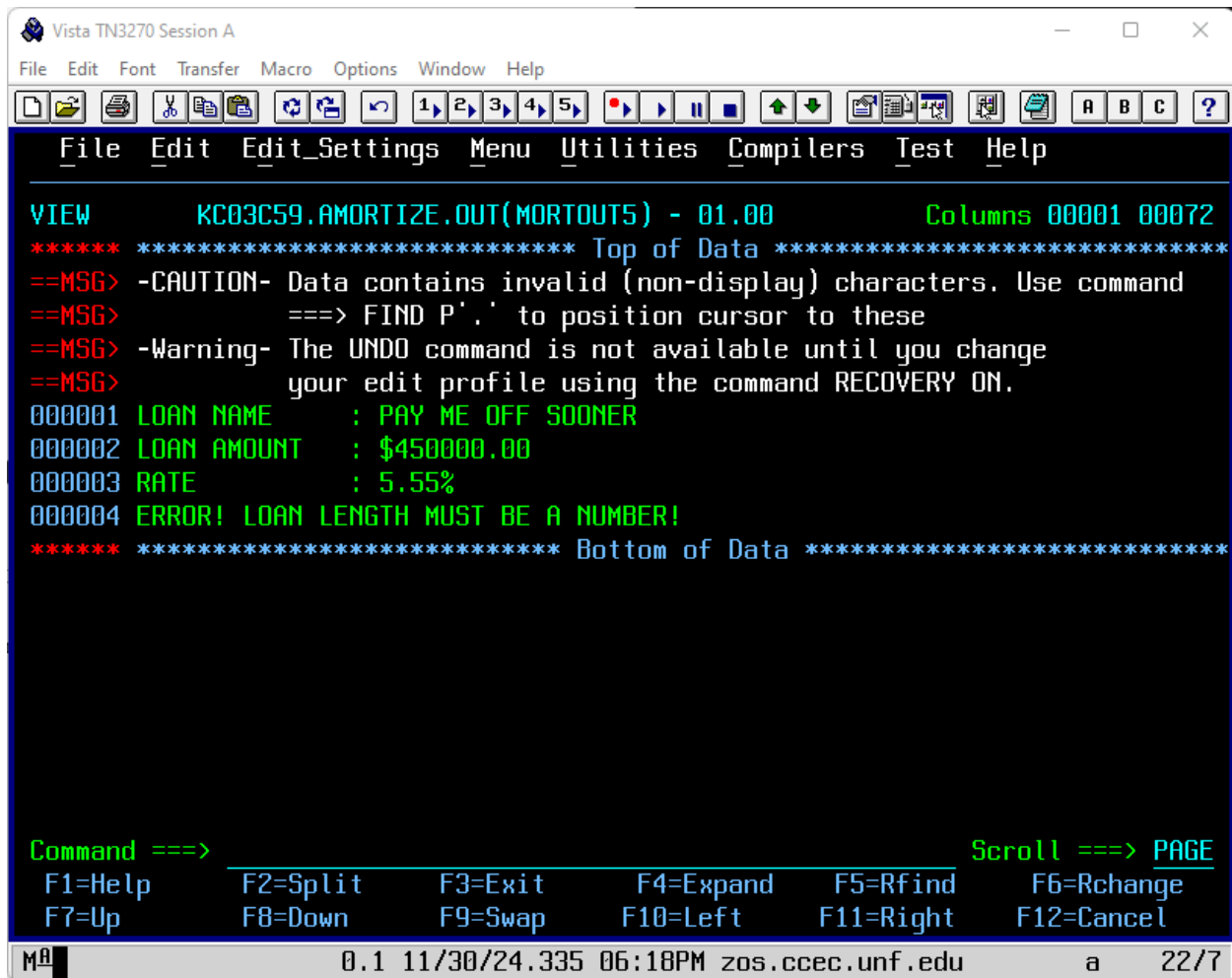
Scroll ==> PAGE

MA 0.2 11/30/24.335 06:16PM zos.ccec.unf.edu a 22/7

```

Output For LOAN04 with HTML format (non-positive loan amount):

```
Vista TN3270 Session A
File Edit Font Transfer Macro Options Window Help
File Edit Edit_Settings Menu Utilities Compilers Test Help
VIEW      KC03C59.AMORTIZE.OUT(MORHOUT4) - 01.00      Columns 00001 00072
***** Top of Data *****
==MSG> -CAUTION- Profile changed to CAPS OFF (from CAPS ON) because data
==MSG> contains lower case characters.
==MSG> -CAUTION- Data contains invalid (non-display) characters. Use command
==MSG> ==> FIND P'.' to position cursor to these
==MSG> -Warning- The UNDO command is not available until you change
==MSG> your edit profile using the command RECOVERY ON.
000001 <!DOCTYPE html>
000002 <html lang="en">
000003 <head><title>Loan Amortization</title></head>
000004 <body>
000005 LOAN NAME      : PAY ME OFF SOONER
000006 <br>
000007 ERROR! LOAN AMOUNT MUST BE POSITIVE!
000008 </body>
000009 </html>
***** Bottom of Data *****
Command ==>
F1=Help      F2=Split    F3=Exit      F4=Expand    F5=Rfind     F6=Rchange
F7=Up        F8=Down      F9=Swap      F10=Left     F11=Right    F12=Cancel
PAGE
```

Output For LOAN05 with TEXT format (non-numeric value):

```
Vista TN3270 Session A
File Edit Font Transfer Macro Options Window Help
[Icons]
File Edit Edit_Settings Menu Utilities Compilers Test Help

VIEW          KC03C59.AMORTIZE.OUT(MORTOUT5) - 01.00          Columns 00001 00072
***** ***** Top of Data *****
==MSG> -CAUTION- Data contains invalid (non-display) characters. Use command
==MSG>          ==> FIND P'.' to position cursor to these
==MSG> -Warning- The UNDO command is not available until you change
==MSG>          your edit profile using the command RECOVERY ON.
000001 LOAN NAME      : PAY ME OFF SOONER
000002 LOAN AMOUNT    : $450000.00
000003 RATE          : 5.55%
000004 ERROR! LOAN LENGTH MUST BE A NUMBER!
***** ***** Bottom of Data *****

Command ==>
F1=Help      F2=Split    F3=Exit      F4=Expand    F5=Rfind     F6=Rchange
F7=Up        F8=Down      F9=Swap      F10=Left     F11=Right    F12=Cancel

Scroll ==> PAGE
MA 0.1 11/30/24.335 06:18PM zos.ccec.unf.edu a 22/7
```

Output For LOAN05 with HTML format (non-numeric value):

```
Vista TN3270 Session A
File Edit Font Transfer Macro Options Window Help
[Icons] [A B C ?]
File Edit Edit_Settings Menu Utilities Compilers Test Help

VIEW          KC03C59.AMORTIZE.OUT(MORHOUT5) - 01.00          Columns 000001 00072
***** Top of Data *****
==MSG> -CAUTION- Data contains invalid (non-display) characters. Use command
==MSG>      ==> FIND P'.' to position cursor to these
==MSG> -Warning- The UNDO command is not available until you change
==MSG>      your edit profile using the command RECOVERY ON.
000001 <!DOCTYPE html>
000002 <html lang="en">
000003 <head><title>Loan Amortization</title></head>
000004 <body>
000005 LOAN NAME       : PAY ME OFF SOONER
000006 <br>
000007 LOAN AMOUNT     : $450000.00
000008 <br>
000009 RATE           : 5.55%
000010 <br>
000011 ERROR! LOAN LENGTH MUST BE A NUMBER!
000012 </body>
000013 </html>
Command ==> Scroll ==> PAGE
F1=Help    F2=Split   F3=Exit    F4=Expand  F5=Rfind   F6=Rchange
F7=Up      F8=Down    F9=Swap   F10=Left  F11=Right  F12=Cancel
```


JCL for each test case (from PDS 'KC03C59.AMORTIZE'):

Note: I chose to use the current date to name my program compilations since using the date and time would exceed the 8 character PDS member limit and a time alone doesn't give much information on when the code was actually compiled. Additionally, my JCL uses an if statement to ensure the program is only ran after a successful compile, which avoids the issue of running the last successfully compiled program after a failed compile.

LOAN01 TEXT Format:

```
//AMORTIZE JOB 1,NOTIFY=&SYSUID
//* -----
//* JCL Steps to compile mortgage amortization program
//* For PROJECT #3
//* Author: Adam Walton
//* -----
//COBRUN EXEC IGYWCL
//* Compile the AMORTIZE Program
//COBOL.SYSIN DD DSN=&SYSUID..AMORTIZE(MORTCBL),DISP=SHR
//LKED.SYSLMOD DD DSN=&SYSUID..MORTCMPS(MO&YYMMDD),
// DISP=SHR
// IF RC=0 THEN
//GO EXEC PGM=MO&YYMMDD,PARM=('TEXT')
//STEPLIB DD DSN=&SYSUID..MORTCMPS,DISP=SHR
//GO.INFILE DD DSN=&SYSUID..AMORTIZE.IN(LOAN01),DISP=SHR
//GO.OUTFILE DD DSN=&SYSUID..AMORTIZE.OUT(MORTOUT1),DISP=SHR
//GO.SYSOUT DD SYSOUT=*
// ENDIF
```

LOAN02 TEXT Format:

```
//AMORTIZE    JOB  1,NOTIFY=&SYSUID
/* -----
/* JCL Steps to compile mortgage amortization program
/* For PROJECT #3
/* Author: Adam Walton
/* -----
//COBRUN      EXEC IGYWCL
/* Compile the AMORTIZE Program
//COBOL.SYSIN DD DSN=&SYSUID..AMORTIZE(MORTCBL),DISP=SHR
//LKED.SYSLMOD DD DSN=&SYSUID..MORTCMPS(MO&YYMMDD),
//              DISP=SHR
// IF RC=0 THEN
//GO           EXEC PGM=MO&YYMMDD,PARM=('TEXT')
//STEPLIB      DD DSN=&SYSUID..MORTCMPS,DISP=SHR
//GO.INFILE    DD DSN=&SYSUID..AMORTIZE.IN(LOAN02),DISP=SHR
//GO.OUTFILE   DD DSN=&SYSUID..AMORTIZE.OUT(MORTOUT2),DISP=SHR
//GO.SYSOUT    DD SYSOUT=*
// ENDIF
```

LOAN03 TEXT Format:

```
//AMORTIZE    JOB  1,NOTIFY=&SYSUID
/* -----
/* JCL Steps to compile mortgage amortization program
/* For PROJECT #3
/* Author: Adam Walton
/* -----
//COBRUN      EXEC IGYWCL
/* Compile the AMORTIZE Program
//COBOL.SYSIN  DD DSN=&SYSUID..AMORTIZE(MORTCBL),DISP=SHR
//LKED.SYSLMOD DD DSN=&SYSUID..MORTCMPS(MO&YYMMDD),
//              DISP=SHR
// IF RC=0 THEN
//GO           EXEC PGM=MO&YYMMDD,PARM=('TEXT')
//STEPLIB      DD DSN=&SYSUID..MORTCMPS,DISP=SHR
//GO.INFILE    DD DSN=&SYSUID..AMORTIZE.IN(LOAN03),DISP=SHR
//GO.OUTFILE   DD DSN=&SYSUID..AMORTIZE.OUT(MORTOUT3),DISP=SHR
//GO.SYSOUT    DD SYSOUT=*
// ENDIF
```

LOAN04 TEXT Format:

```
//AMORTIZE    JOB  1,NOTIFY=&SYSUID
/* -----
/* JCL Steps to compile mortgage amortization program
/* For PROJECT #3
/* Author: Adam Walton
/* -----
//COBRUN      EXEC IGYWCL
/* Compile the AMORTIZE Program
//COBOL.SYSIN  DD DSN=&SYSUID..AMORTIZE(MORTCBL),DISP=SHR
//LKED.SYSLMOD DD DSN=&SYSUID..MORTCMPS(MO&YYMMDD),
//              DISP=SHR
// IF RC=0 THEN
//GO           EXEC PGM=MO&YYMMDD,PARM=('TEXT')
//STEPLIB      DD DSN=&SYSUID..MORTCMPS,DISP=SHR
//GO.INFILE    DD DSN=&SYSUID..AMORTIZE.IN(LOAN04),DISP=SHR
//GO.OUTFILE   DD DSN=&SYSUID..AMORTIZE.OUT(MORTOUT4),DISP=SHR
//GO.SYSOUT    DD SYSOUT=*
// ENDIF
```

LOAN05 TEXT Format:

```
//AMORTIZE    JOB  1,NOTIFY=&SYSUID
//* -----
//* JCL Steps to compile mortgage amortization program
//* For PROJECT #3
//* Author: Adam Walton
//* -----
//COBRUN      EXEC IGYWCL
//* Compile the AMORTIZE Program
//COBOL.SYSIN  DD DSN=&SYSUID..AMORTIZE(MORTCBL),DISP=SHR
//LKED.SYSLMOD DD DSN=&SYSUID..MORTCMPS(MO&YYMMDD),
//              DISP=SHR
// IF RC=0 THEN
//GO           EXEC PGM=MO&YYMMDD,PARM=('TEXT')
//STEPLIB      DD DSN=&SYSUID..MORTCMPS,DISP=SHR
//GO.INFILE    DD DSN=&SYSUID..AMORTIZE.IN(LOAN05),DISP=SHR
//GO.OUTFILE   DD DSN=&SYSUID..AMORTIZE.OUT(MORTOUT5),DISP=SHR
//GO.SYSOUT    DD SYSOUT=*
// ENDIF
```

LOAN01 HTML Format:

```
//AMORTIZE    JOB  1,NOTIFY=&SYSUID
/* -----
/* JCL Steps to compile mortgage amortization program
/* For PROJECT #3
/* Author: Adam Walton
/* -----
//COBRUN      EXEC IGYWCL
/* Compile the AMORTIZE Program
//COBOL.SYSIN  DD DSN=&SYSUID..AMORTIZE(MORTCBL),DISP=SHR
//LKED.SYSLMOD DD DSN=&SYSUID..MORTCMPS(MO&YYMMDD),
//              DISP=SHR
// IF RC=0 THEN
//GO           EXEC PGM=MO&YYMMDD,PARM=('HTML')
//STEPLIB      DD DSN=&SYSUID..MORTCMPS,DISP=SHR
//GO.INFILE    DD DSN=&SYSUID..AMORTIZE.IN(LOAN01),DISP=SHR
//GO.OUTFILE   DD DSN=&SYSUID..AMORTIZE.OUT(MORTOUT1),DISP=SHR
//GO.SYSOUT    DD SYSOUT=*
// ENDIF
```

LOAN02 HTML Format:

```
//AMORTIZE    JOB  1,NOTIFY=&SYSUID
/* -----
/* JCL Steps to compile mortgage amortization program
/* For PROJECT #3
/* Author: Adam Walton
/* -----
//COBRUN      EXEC IGYWCL
/* Compile the AMORTIZE Program
//COBOL.SYSIN DD DSN=&SYSUID..AMORTIZE(MORTCBL),DISP=SHR
//LKED.SYSLMOD DD DSN=&SYSUID..MORTCMPS(MO&YYMMDD),
//              DISP=SHR
// IF RC=0 THEN
//GO           EXEC PGM=MO&YYMMDD,PARM=('HTML')
//STEPLIB      DD DSN=&SYSUID..MORTCMPS,DISP=SHR
//GO.INFILE    DD DSN=&SYSUID..AMORTIZE.IN(LOAN02),DISP=SHR
//GO.OUTFILE   DD DSN=&SYSUID..AMORTIZE.OUT(MORTOUT2),DISP=SHR
//GO.SYSOUT    DD SYSOUT=*
// ENDIF
```

LOAN03 HTML Format:

```
//AMORTIZE    JOB  1,NOTIFY=&SYSUID
/* -----
/* JCL Steps to compile mortgage amortization program
/* For PROJECT #3
/* Author: Adam Walton
/* -----
//COBRUN      EXEC IGYWCL
/* Compile the AMORTIZE Program
//COBOL.SYSIN  DD DSN=&SYSUID..AMORTIZE(MORTCBL),DISP=SHR
//LKED.SYSLMOD DD DSN=&SYSUID..MORTCMPS(MO&YYMMDD),
//              DISP=SHR
// IF RC=0 THEN
//GO           EXEC PGM=MO&YYMMDD,PARM=('HTML')
//STEPLIB      DD DSN=&SYSUID..MORTCMPS,DISP=SHR
//GO.INFILE    DD DSN=&SYSUID..AMORTIZE.IN(LOAN03),DISP=SHR
//GO.OUTFILE   DD DSN=&SYSUID..AMORTIZE.OUT(MORTOUT3),DISP=SHR
//GO.SYSOUT    DD SYSOUT=*
// ENDIF
```


LOAN04 HTML Format:

```
//AMORTIZE    JOB  1,NOTIFY=&SYSUID
/* -----
/* JCL Steps to compile mortgage amortization program
/* For PROJECT #3
/* Author: Adam Walton
/* -----
//COBRUN      EXEC IGYWCL
/* Compile the AMORTIZE Program
//COBOL.SYSIN  DD DSN=&SYSUID..AMORTIZE(MORTCBL),DISP=SHR
//LKED.SYSLMOD DD DSN=&SYSUID..MORTCMPS(MO&YYMMDD),
//              DISP=SHR
// IF RC=0 THEN
//GO           EXEC PGM=MO&YYMMDD,PARM=('HTML')
//STEPLIB      DD DSN=&SYSUID..MORTCMPS,DISP=SHR
//GO.INFILE    DD DSN=&SYSUID..AMORTIZE.IN(LOAN04),DISP=SHR
//GO.OUTFILE   DD DSN=&SYSUID..AMORTIZE.OUT(MORTOUT4),DISP=SHR
//GO.SYSOUT    DD SYSOUT=*
// ENDIF
```

LOAN05 HTML Format:

```
//AMORTIZE    JOB  1,NOTIFY=&SYSUID
/* -----
/* JCL Steps to compile mortgage amortization program
/* For PROJECT #3
/* Author: Adam Walton
/* -----
//COBRUN      EXEC IGYWCL
/* Compile the AMORTIZE Program
//COBOL.SYSIN  DD DSN=&SYSUID..AMORTIZE(MORTCBL),DISP=SHR
//LKED.SYSLMOD DD DSN=&SYSUID..MORTCMPS(MO&YYMMDD),
//              DISP=SHR
// IF RC=0 THEN
//GO           EXEC PGM=MO&YYMMDD,PARM=('HTML')
//STEPLIB      DD DSN=&SYSUID..MORTCMPS,DISP=SHR
//GO.INFILE    DD DSN=&SYSUID..AMORTIZE.IN(LOAN05),DISP=SHR
//GO.OUTFILE   DD DSN=&SYSUID..AMORTIZE.OUT(MORTOUT5),DISP=SHR
//GO.SYSOUT    DD SYSOUT=*
// ENDIF
```

All project-related partitioned datasets:

Vista TN3270 Session A

File Edit Font Transfer Macro Options Window Help

Menu Functions Confirm Utilities Help

VIEW KC03C59.AMORTIZE Row 0000001 of 0000011

Name	Prompt	Size	Created	Changed	ID
MORHJCL1		18	2024/11/16	2024/11/30 17:39:33	KC03C59
MORHJCL2		18	2024/11/16	2024/11/30 17:40:56	KC03C59
MORHJCL3		18	2024/11/16	2024/11/30 17:40:54	KC03C59
MORHJCL4		18	2024/11/16	2024/11/30 17:40:53	KC03C59
MORHJCL5		18	2024/11/16	2024/11/30 17:40:52	KC03C59
MORTCBL		366	2024/09/24	2024/11/30 17:37:28	KC03C59
MORTJCL1		18	2024/11/16	2024/11/30 00:50:47	KC03C59
MORTJCL2		18	2024/11/16	2024/11/30 17:39:23	KC03C59
MORTJCL3		18	2024/11/16	2024/11/30 17:40:04	KC03C59
MORTJCL4		18	2024/11/16	2024/11/30 17:40:03	KC03C59
MORTJCL5		18	2024/11/16	2024/11/30 17:40:02	KC03C59

End

Command ==> Scroll ==> PAGE

F1=Help F2=Split F3=Exit F5=Rfind F7=Up F8=Down F9=Swap
F10=Left F11=Right F12=Cancel

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Vista TN3270 Session A

File Edit Font Transfer Macro Options Window Help

Menu Functions Confirm Utilities Help

VIEW KC03C59.AMORTIZE.IN Row 0000001 of 0000005

Name	Prompt	Size	Created	Changed	ID
LOAN01		5	2024/11/20	2024/11/20 10:17:03	KC02791
LOAN02		5	2024/11/20	2024/11/20 10:18:16	KC02791
LOAN03		5	2024/11/20	2024/11/20 10:18:54	KC02791
LOAN04		5	2024/11/20	2024/11/20 10:19:12	KC02791
LOAN05		5	2024/11/20	2024/11/20 10:19:40	KC02791

End

Command ==> Scroll ==> PAGE

F1=Help F2=Split F3=Exit F5=Rfind F7=Up F8=Down F9=Swap
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Menu Functions Confirm Utilities Help

VIEW KC03C59.AMORTIZE.OUT Row 0000001 of 0000010

Name	Prompt	Size	Created	Changed	ID
MORHOUT1					
MORHOUT2					
MORHOUT3					
MORHOUT4					
MORHOUT5					
MORTOUT1					
MORTOUT2					
MORTOUT3					
MORTOUT4					
MORTOUT5					

End

Command ==> Scroll ==> PAGE

F1=Help F2=Split F3=Exit F5=Rfind F7=Up F8=Down F9=Swap
F10=Left F11=Right F12=Cancel

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File Edit Font Transfer Macro Options Window Help

Menu Functions Confirm Utilities Help

VIEW KC03C59.MORTCMPS Row 0000001 of 0000005

Name	Prompt	Alias-of	Size	TTR	AC	AM	RM
M0241117			000020B4	000018	00	31	ANY
M0241120			00002D24	000032	00	31	ANY
M0241126			00003298	00005E	00	31	ANY
M0241129			00003E14	00007C	00	31	ANY
M0241130			00004CDC	0000BB	00	31	ANY

End

Command ==> Scroll ==> PAGE

F1=Help F2=Split F3=Exit F5=Rfind F7=Up F8=Down F9=Swap
F10=Left F11=Right F12=Cancel

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Comments:

While I was successfully able to complete the project, I found many difficulties in doing so. It took multiple hours of research just to get working JCL to allow my COBOL program to read and write to a file. Additionally, I needed to be careful to ensure my output datasets were allocated properly to allow each table row to be written without causing an ABEND, since they required more than 80 characters per record. Once that was done, it wasn't too difficult to perform the amortization, since there were many articles online as well as the ANNUITY function to calculate monthly payments and the amount that go towards principal and interest. One thing I asked for assistance with was regarding dates and date arithmetic, which proved to be way more challenging to figure out than expected. What I ended up doing eventually was storing the current month and year as a numeric and incrementing when appropriate during the amortization. After finishing this project, I feel much more comfortable with JCL and file I/O in COBOL, as well as noticing the application of skills I learned while working on the Z Xplore all star badge. Additionally, I discovered an intrinsic function called TEST-NUMVAL that allows me to check if data is numeric even with decimals. This is an issue I had in project 2, and I am glad I finally found an answer to it. Overall, I believe this project was very challenging, but has made me very comfortable working with Z/OS, JCL, and COBOL as a whole.

As for accelerated payments, I am already aware that they help you save a ton of money on loans, but it's still shocking how just an extra \$500 every month can allow for a six figure savings. Of course, there are more factors that go into this such as inflation determining how valuable the saved money actually is at the end of the loan, but the savings are still huge nonetheless. Judging by the tables created for loans with and without an extra payment, the most dramatic savings appear to be at the very beginning of the loan, since expected monthly payments barely contribute anything towards the principal, which is what the loan is even about, and more towards interest. However, paying off more principal through additional payments will drastically decrease the amount of interest owed due to compounding, which is an exponential function. This is similar to why it is drastically more beneficial to invest your money as young as possible, so your investments have more time to compound and grow.