

This project was challenging, but it helped me understand COBOL in a more practical way. The logic and math sections worked well once the variables were defined correctly and the COMPUTE statements were set up. I had to look up how TEST-NUMVAL and NUMVAL behave when the input fields are edited, and I needed help figuring out why my program kept returning to the input section. I also asked for assistance on how to run the program interactively through TSO because that part was not clear at first. This assignment reinforced how strict COBOL is with data types and how important it is to handle inputs carefully. Even though some parts were frustrating, I learned how to troubleshoot more effectively and how to think more like a mainframe programmer.

## 1. Complete Source Code

### COBOL Code

```
IDENTIFICATION DIVISION.
PROGRAM-ID. PANNUNITY.
DATA DIVISION.
WORKING-STORAGE SECTION.
01 PRINCIPAL-AMT      PIC 9(9)V99.
01 PRINCIPAL-EDIT    PIC Z(9)V99.
01 RATE-IN           PIC 999V99.
01 RATE-EDIT        PIC ZZZ.99.
01 RATE-PERCENT     PIC ZZZ.
01 TERM-MONTHS      PIC 999.
01 TERM-YEARS       PIC 999.
01 YEARS-EDIT       PIC ZZZ.
01 PAY-MONTHLY      PIC 9(9)V99.
01 VALID-FLAG       PIC 9.
PROCEDURE DIVISION.
    DISPLAY 'WELCOME TO THE ANNUITY'.
    DISPLAY 'AUTHOR: KATHERINE TORO VILLANUEVA'.
LOANS-SECTION.
    DISPLAY 'ENTER A LOAN AMOUNT'.
    ACCEPT PRINCIPAL-EDIT.
    COMPUTE VALID-FLAG = FUNCTION TEST-NUMVAL(PRINCIPAL-EDIT).
    IF VALID-FLAG > 0
        DISPLAY 'INCORRECT INPUT'
        GO TO LOANS-SECTION
    END-IF.
    COMPUTE PRINCIPAL-AMT = FUNCTION NUMVAL(PRINCIPAL-EDIT).
INTERSEST-SECTION.
    DISPLAY 'ENTER AN INTEREST RATE'.
    ACCEPT RATE-EDIT.
    COMPUTE VALID-FLAG = FUNCTION TEST-NUMVAL(RATE-EDIT) .
```

```

IF VALID-FLAG > 0
    DISPLAY 'INCORRECT INPUT'
    GO TO INTERSEST-SECTION
END-IF.
COMPUTE RATE-IN = FUNCTION NUMVAL(RATE-EDIT).
YEARS-SECTION.
    DISPLAY 'ENTER AMOUNT OF YEARS'.
    ACCEPT YEARS-EDIT.
    COMPUTE VALID-FLAG = FUNCTION TEST-NUMVAL(YEARS-EDIT)
IF VALID-FLAG > 0
    DISPLAY 'INCORRECT INPUT'
    GO TO YEARS-SECTION
END-IF.
COMPUTE TERM-YEARS = FUNCTION NUMVAL(YEARS-EDIT).
COMPUTE RATE-PERCENT = RATE-IN * 100.
DISPLAY TERM-YEARS.
DISPLAY 'TOTAL-LOAN: ' PRINCIPAL-AMT ' USD - INTEREST-RATE: ' ,
RATE-PERCENT '%'.
DISPLAY ' Y M AMOUNT '.
DISPLAY '--- --- -----'.
PERFORM TERM-YEARS TIMES
    ADD 12 TO TERM-MONTHS
    COMPUTE PAY-MONTHLY = PRINCIPAL-AMT * FUNCTION ANNUITY ,
    ((RATE-IN / 12), TERM-MONTHS)
    COMPUTE TERM-YEARS = TERM-MONTHS / 12
    DISPLAY TERM-YEARS ' ' TERM-MONTHS ' ' PAY-MONTHLY ' USD'
END-PERFORM.
GOBACK.

```

## JCL Code

```

//ANNUITY JOB 1,NOTIFY=&SYSUID
//COBRUN EXEC IGYWCL
//COBOL.SYSIN DD DSN=&SYSUID..COBOL.CBL(ANNUITY),DISP=SHR
//LKED.SYSLMOD DD DSN=&SYSUID..COBOL.LOAD(ANNUITY),DISP=SHR

```