

**CSCI 360****Assignment 7: Introduction to Packed Decimal  
75 points**

This program is a rather simple introduction to packed decimal and packed decimal arithmetic.

First, copy the following Assembler program into a new member of your ASSIGNS PDSE named ASSIGN7.

Be sure the program is surrounded by the correct JCL as before:

```
                PRINT NOGEN
*****
*
*   CSCI 360          ASSIGNMENT 7          current semester
*
*****
*
PAYROLL  CSECT
*
*   STANDARD ENTRY LINKAGE WITH R12 AS BASE REGISTER
*
                STM    14,12,12(13)  SAVE REGS IN CALLER'S SAVE AREA
                LR     12,15         COPY CSECT ADDR INTO R12
                USING  PAYROLL,12    ESTABLISH R12 AS THE BASE REG
                LA     14,REGSAVE    R14 POINTS TO THIS CSECT'S SAVE AREA
                ST     14,8(,13)     STORE ADDR OF THIS CSECT'S SAVE AREA
                ST     13,4(,14)     STORE ADDR OF CALLER'S SAVE AREA
                LR     13,14         POINT R13 AT THIS CSECT'S SAVE AREA
*
*
*   Here is where you will write your program.
*
*
*   STANDARD EXIT LINKAGE WITH RC OF 0
*
                SR     15,15         R15 = RETURN CODE OF 0
                L      13,4(,13)     POINT R13 TO CALLER'S SAVE AREA
                L      14,12(,13)    RESTORE REGISTER 14
                LM     0,12,20(13)   RESTORE R0 THRU R12
*
                BR     14            RETURN TO CALLER
*
                LTORG
*
REGSAVE  DS      18F              PROGRAM'S REGISTER SAVE AREA
*
*   Here is where your storage will be defined.
```

★

END PAYROLL

You will write your source code in between the lines standard entry and exit linkage code provided to you. Of course, you can add variables and other storage declarations immediately following the LTORG provided but DO NOT place them above the 19-fullword caller's register storage area.

Secondly, change the input data member to:

```
//FT05F001 DD DSN=KC02322.CSCI360.DATASP24(DATA7),DISP=SHR
```

To assist you, here is the data in the DATA7 member:

WOLFGANG AMADEUS MOZART	123450158002550
RICHARD STRAUSS	234560198007010
AMY BEACH	221320108003120
DAME ETHEL SMYTHE	654650228001590
PETER ILYICH TCHAIKOVSKY	445600232803407
ANTON BRUCKNER	998700228002100
LUDWIG VAN BEETHOVEN	133450158002550
JOHANNES BRAHMS	244560198008001
BELA BARTOK	225320108003120
MAX REGER	114650228001590
SAMUEL BARBER	133600232803407
GIUSEPPE VERDI	998730228002100
JOHANN SEBASTIAN BACH	123420158002550
JOSEPH HAYDN	234520198002001
GEORG FRIEDRICH HANDEL	221310108003120
NIKOLAI RIMSKY-KORSAKOV	443780232803407
EDWARD ELGAR	654110228001590
CLAUDE DEBUSSY	998550228002100
ANTONIN DVORAK	133460158002550
THOMAS TALLIS	244570198006001
RALPH VAUGHAN WILLIAMS	225380108003120
RICHARD WAGNER	114770228001590
FREDERIC CHOPIN	177770232803407
JOAN TOWER	992110228002100

Each of the above input records has the following layout:

Data Field	Data Type	Columns	Max. Value
Employee Name	Alphanumeric	1-25	
Unused		26	
Employee ID	Alphanumeric	27-31	
Hourly Pay Rate	Zoned Decimal	32-36	\$999.99 (two implied decimal places)
Hours Worked	Zoned Decimal	37-41	999.99 (two implied decimal places)
Unused		42-80	

As before, read the employee records one at a time using a standard read loop and printing a detail line for each employee so that your output looks like that provided to you in the Assignment 7 folder on Blackboard.

For each employee, move their name to the print line and move their ID to the print line. Make sure your read loop works at this point before moving on.

Next, using only packed decimal instructions, PACK and ED the Hourly Pay Rate into the print line showing the decimal point. Do the same for the Hours Worked.

Finally, calculate the gross pay amount using MP, round it to two decimal places and ED it into the print line showing the decimal point.

The only packed decimal instructions you will need are: PACK, ED, ZAP, MP and SRP.

***You will no longer need to use XDECI or XDECO. DO NOT use them!***

Name your detail line you print for each employee DETAIL and place the following two lines at the top of your read loop:

```
MVI    DETAIL+1,C' '  
MVC    DETAIL+2(131),DETAIL+1
```

These two lines set all but the very first byte – the carriage control character – of your 133-byte detail line to spaces to prepare for the next employee information.

The JCL statements *immediately* following the END statement of the program should look like this:

```
/*  
//*  
//FT05F001 DD DSN=KC02322.CSCI360.DATASP24(DATA7),DISP=SHR  
//*  
//FT06F001 DD SYSOUT=*  
//
```

Check your output against the provided file 360 Assign 7 Exact Output.txt.

Fully document your program as instructed in the **CSCI 360 Coding and Documentation Guidelines** found in Blackboard's Course Documents. Be sure every line of code has adequate line documentation.

Submit your ASSIGN7.txt file on Blackboard as before.