/\*

1. Obtain first names for each of 10 students

Store in an array named fn\_array

Use a PCF named get\_first( )

Use data file /home/faculty/urbanc/ghp2567fn.day

Rows represent students.

2. Obtain last names for each of 10 students

Store in an array named ln\_array

Develop and use a PCF names get\_last( )

Use data file /home/faculty/urbanc/ghp2567LN.dat

Rows represent students.

3. Obtain 5 test scores for each of 10 students

Store in an array named scores\_array

Develop and use a PCF named get\_scores( )

Use data file /home/faculty/urbanc/ghp2567scores.dat

Rows represent students; columns represent tests

4. Determine the average test score for each student.

Store in and array names avgs\_array

Develop and use a PCF named computer\_avgs ( )

5. Print the first name, last name, and average test

score for each of the 10 students

Develop and use a PCF named display.

6. Terminate

\*/

#include <stdio.h>

//PCF Prototypes below

void get\_first (char[ ] [15] , int ) ;

void get\_last (char[ ] [15] , int ) ;

void get\_scores (int[ ] [5], int, int) ;

void computer\_avgs(int[ ][5], double[10], int, int);

void display (char[ ] [15], char[ ] [15], double[10], int);

int main ( void )

{

//Local variables created below

char fn\_array [10][15] = {' '} ;

char ln\_array [10][15] = {' '} ;

int scores\_array [10][5] = {0} ;

double avgs\_array[10] = {0.0} ;

int rows = 10 , cols = 5 ;

//1. Obtain first names for each of 10 students

// Store in an array named fn\_array

// Use a PCF named get\_first( )

// Use data file /home/faculty/urbanc/ghp2567fn.day

// Rows represent students.

get\_first( fn\_array , rows ) ;

//2. Obtain last names for each of 10 students

// Store in an array named ln\_array

// Develop and use a PCF names get\_last( )

// Use data file /home/faculty/urbanc/ghp2567LN.dat

// Rows represent students.

get\_last( ln\_array , rows ) ;

//3. Obtain 5 test scores for each of 10 students

// Store in an array named scores\_array

// Develop and use a PCF named get\_scores( )

// Use data file /home/faculty/urbanc/ghp2567scores.dat

// Rows represent students; columns represent tests

get\_scores( scores\_array,rows, cols) ;

//4. Determine the average test score for each student.

// Store in and array names avgs\_array

// Develop and use a PCF named computer\_avgs ( )

computer\_avgs(scores\_array, avgs\_array, rows, cols);

//5. Print the first name, last name, and average test

// score for each of the 10 students

// Develop and use a PCF named display.

display(fn\_array, ln\_array, avgs\_array, rows);

//6. Terminate

return ( 0 ) ;

}

//PCF Definitions below

void get\_first (char zzz[ ] [15] , int r )

{

FILE \* read\_ptr = NULL ;

//local variables declared below

int rows =0 ;

read\_ptr = fopen("/home/faculty/urbanc/ghp2567fn.dat" , "r");

if (read\_ptr == NULL)

{

printf("\n\nghp2567fn.dat not opened.\n\n") ;

}

else

{

printf("\n\nghp2567fn.dat opened properly.\n\n") ;

for ( rows = 0 ; rows < r ; rows++)

{

{

fscanf(read\_ptr, "%s" , zzz[rows]) ;

}

}

}

fclose(read\_ptr);

return ;

}

void get\_last (char zzz[ ] [15] , int r )

{

FILE \* read\_ptr = NULL ;

//local variables declared below

int rows =0 ;

read\_ptr = fopen("/home/faculty/urbanc/ghp2567LN.dat" , "r");

if (read\_ptr == NULL)

{

printf("\n\nghp2567LN.dat not opened.\n\n") ;

}

else

{

printf("\n\nghp2567LN.dat opened properly.\n\n") ;

for ( rows = 0 ; rows < r ; rows++)

{

{

fscanf(read\_ptr, "%s" , zzz[rows]) ;

}

}

}

fclose(read\_ptr);

return ;

}

void get\_scores ( int test [ ] [5], int r, int c)

{

FILE \* read\_ptr = NULL ;

//local variables declared below

int rows =0, cols = 0;

read\_ptr = fopen("/home/faculty/urbanc/ghp2567scores.dat" , "r");

if (read\_ptr == NULL)

{

printf("\n\nghp2567scores.dat not opened.\n\n") ;

}

else

{

printf("\n\nghp2567scores.dat opened properly.\n\n") ;

}

for(rows = 0; rows < r; rows ++)

{

for(cols = 0; cols < c; cols ++)

{

fscanf(read\_ptr, "%d" ,&test[rows][cols]);

}

}

fclose(read\_ptr);

return ;

}

void computer\_avgs(int test[][5], double avgs[10], int r, int c)

{

//local variables declared below

int rows = 0, cols = 0, sum = 0, counter = 0;

for(rows = 0; rows < r; rows ++)

{

for(cols = 0; cols < c; cols ++)

{

sum += test[rows][cols];

counter ++ ;

}

avgs[rows] = (double)sum/counter;

sum = 0 ;

counter = 0;

}

}

void display (char fn[ ] [15], char ln[ ] [15], double avgs[10], int r)

{

//local variables declared below

int rows = 0;

for(rows = 0; rows < r; rows ++)

{

printf("%s %s %.2lf\n", fn[rows], ln[rows], avgs[rows]);

}

printf("\n\n"); //newline feeds for spacing

return ;

}