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Computer Programming II HW02 README

HW0201 Matrix

Here I implement a header about matrix functions. I built up a structure and implement the following functions.

1. `sMatrix* matrix_init( uint8_t m, uint8_t n );`
2. `int32_t matrix_set( sMatrix *pM, uin8_t m, uint8_t n, int32_t value );`
3. `void matrix_print( const sMatrix *pM );`
4. `int32_t matrix_add( sMatrix *pA , const sMatrix *pB , const sMatrix *pC );`
5. `int32_t matrix_multiply( sMatrix *pA , const sMatrix *pB , const sMatrix *pC );`
6. `int32_t matrix_transpose( sMatrix *pA);`
7. `int32_t matrix_det(const sMatrix *pA , int32_t *pAns);`
8. `int32_t matrix_free( sMatrix *pA);`

For those functions with return value type `int32_t`, they returns `-1` when error occurs. Here are some potential errors easily made.

1. NULL input
   Please make sure all matrix you input to functions are well allocated.
2. Unmatched size for your matrices
   Please make sure the size of your matrices is allowed to do operations. For instance, when using `matrix_add` function, the row number of row and column of `pB` should be the same as `pC`.

Note that you must build hw0201.c on your own. I provide matrix.c, matrix.h, and Makefile assisting you build your program. Simply include matrix.h in hw0201.c file and command `make` to compile your code is fine.

HW0202 Directory

For hw0202, this is a program that shows what files in the current directory. If there are other directories in the current directory, it will print out the directory name in blue and then print out the files in that directory recursively. The printing order if “first meet first print”.

HW0203 Bible

For hw0203.c, it is a substring searching function.

In hw0203, simply type the target word you want to find, the program will print out all result and how many times it finds.

For 0 result case, the program will print out “not found” and terminate.

HW0204 FIFA Manager

This is a program helps you form a best team based on given data and requirements. First, you must input dataset with data of all players. This dataset should be a .csv file. Secondly, you must enter 11 position you want to choose. Note that the first 10 positions are required not to be “gk” and the last must be “gk”. Third, you must input a budget for each position. If there is any wrong input, an error message comes out and you need to re-input the data.

HW0205 Follow-up of Software Engineering Course

In hw0205, I develop 2 functions that help you calculate the effort given frontend.txt. The followings are the functions I developed.

1. void searchCommitInformationByHashVal(const char *hashVal)
2. void searchMonthlyContribution(const char *monthAbbrev)

The first function searches the data according to given hash value; while the second function search for the given month. In these two functions, the order to print data is based on what is met first.

The result will be stored into the file contribution.txt. It won't show anything on the screen.

HW0206 (BONUS) Bit Operation

Please see hw0206.pdf file.