FleaBay

**Due Time:** 23.59, 23 September 2015 **Earnings:** 4% of your final grade

***NOTE: The code in this assignment must be your own work. It must not be code taken from another student or written for you by someone else, even if you give a reference to the person you got it from (attribution); if it is not entirely your own work it will be treated as plagiarism and given a fail mark, or less.***

**Purpose:** You are to write the code for a C language console application for an Online Sales Management System (OSMS) like ebay named FleaBay, using dynamic memory allocation for its data. This will give you an opportunity to review material that has already been taught in earlier courses and get up to speed in C programming that will be needed for C++. The full OSMS allows the user to register with an id and password and enter items for sale together with their price – in this assignment you will only register users but in later assignments items for sale will be added. Part of the code (minus the usual headers) is shown on the next page. You **MUST** use this code **without modification (not a single character changed): no code added or removed, no macros and no statics**. Your task is to implement only the functions that are declared and not add any new ones. All your code is in a single file named **ass0.c** (not ass0.cpp)

In this assignment, when the application is running the user can

* Register with an id and password
* Print all the registered users
* Quit the application and release all existing dynamically allocated memory.

An example of the output of the running application is given at the end. Yours must look identical.

Note the following:

* The file must be named **ass0.c** (**not ass0.cpp**).
* The FleaBay object has an array of pointers to Account objects. When a new Account is added the array of pointers is increased in size by one and a new Account object instantiated to be pointed to by the new additional pointer at the end. The new Account object holds the id and password of the new account. When an account is opened, a check is made that the account does not already exist and that the password matches.
* You must use functions like strlen() and strcpy() or similar etc. from the standard C library to handle strings. You cannot use the C++ string class.
* You cannot use any C++ constructs or classes. You must only use malloc() and free() (not realloc) for dynamic memory management.
* When the application terminates you must release **all** dynamically allocated memory (or you lose 30%).

An example of the output of the running application is given at the end. Yours must look identical.

See the Marking Sheet for how you can lose marks, but you will lose 60% if:

1. you change the supplied code in any way at all (not a single character) - no code added or removed, no macros and no statics and no additional functions,

2. it fails to build in Visual Studio 2012,

3. It crashes in normal operation (such as printing an empty OSMS, etc.)

4. it doesn’t work like the example OUTPUT

Part of the code is shown on the next page. You MUST use this code **without modification.** Your task is to add the implementation of the functions that are declared using the style of the posted Submission Standard. All the code is in a single file named **ass0.c**.

**What to Submit :** Use Blackboard to submit this assignment as a zip file (**not** RAR) containing only the single source code file (ass0.c). Please submit to both CST8219 and CST8233 if you are doing both courses. The name of the zipped folder **must** contain your name as a prefix so that I can identify it, for example, for CST8219, using my name the file would be tyleraAss0CST8219.zip. It is also vital that you include the Cover Information (as specified in the Submission Standard) as a file header in your source file so the file can be identified as yours. Use comment lines in the file to include the header. **Before you submit the code, check that it builds and executes in Visual Studio 2012 as you expect - if it doesn’t build for me, for whatever reason, you get a deduction of at least 60%**. There is a late penalty of 25% per day. Don’t send me the file as an email attachment – it will get 0.

***Example code: don’t change it (not even a single character), but add the usual header includes***

typedef enum {FALSE=0,TRUE}BOOL;

typedef struct

{

char\* ID;

char\* PassWord;

}Account, \*pAccount, \*\*ppAccount;

typedef struct

{

unsigned int numAccounts;

ppAccount accounts;

}FleaBay,\*pFleaBay;

void FleaBayInit(pFleaBay); /\* Initialise the FleaBay instance \*/

int FleaBayLogin(pFleaBay); /\* login to the FleaBay \*/

int FleaBayReport(pFleaBay); /\* Print all the Accounts \*/

void FleaBayCleanUp(pFleaBay); /\* Free all dynamically allocated memory \*/

void AddNewAccount(pFleaBay); /\* Add a new Account to the FleaBay \*/

int main(void)

{

BOOL bRunning = TRUE;

char i\_response;

FleaBay e;

FleaBayInit(&e);

while(bRunning)

{

printf("\nPlease enter your choice\n");

printf("1. FleaBay Login\n");

printf("2. FleaBay Report\n");

printf("3. Quit\n");

fflush(stdin);

scanf("%c",&i\_response);

switch(i\_response)

{

case '1':

if(!FleaBayLogin(&e))

return 1;

break;

case '2':

if(!FleaBayReport(&e))

return 1;

break;

case '3':

FleaBayCleanUp(&e);

bRunning=FALSE;

break;

}

}

return 0;

}

***Example Output (yours must work identically)***

Please enter your choice

1. FleaBay Login

2. FleaBay Report

3. Quit

1

\*\*NO ACCOUNTS\*\*

1. Add a new Account

2. Open an existing Account

3. Return to Main Menu

1

please enter your account ID: Andrew Tyler

please enter your account password: at 100

Please enter your choice

1. FleaBay Login

2. FleaBay Report

3. Quit

1

1. Add a new Account

2. Open an existing Account

3. Return to Main Menu

1

please enter your account ID: Barack Obama

please enter your account password: bo 200

Please enter your choice

1. FleaBay Login

2. FleaBay Report

3. Quit

2

Account ID: Andrew Tyler

Account ID: Barack Obama

Please enter your choice

1. FleaBay Login

2. FleaBay Report

3. Quit

1

1. Add a new Account

2. Open an existing Account

3. Return to Main Menu

2

please enter your account ID: Andrew Tyler

please enter your password: at 100

Account is valid.

Please enter your choice

1. FleaBay Login

2. FleaBay Report

3. Quit

1

1. Add a new Account

2. Open an existing Account

3. Return to Main Menu

2

please enter your account ID: Luke Skywalker

Luke Skywalker

is invalid ID

Please enter your choice

1. FleaBay Login

2. FleaBay Report

3. Quit

1

1. Add a new Account

2. Open an existing Account

3. Return to Main Menu

2

please enter your account ID: Barack Obama

please enter your password: ob 200

ob 200

password doesn't match this ID:

Please enter your choice

1. FleaBay Login

2. FleaBay Report

3. Quit