CS490 Windows Internal

Project 2 Device Drivers: Username & Password Management

Due: Monday, Dec 2, 2013

Scenario:

The recent release of IOS 7 & IPhone 5s has brought biometric identification into our daily life. Technically, such innovation is to use a biometric device and apply a proper driver to support such information. Project 2 is to simulate such procedure on Windows.

To do this, you are required to implement a **kernel-mode driver** and a **user-mode application** to check the identity of current user. More specifically, the device that we are talking about here is an encrypted password file which contains the username in clear text and password which is encrypted using MD5 or other algorithms. A user can input the username & password to the application and the application will turn to the driver to check the validation of the username & password, and then the application should show the validation result of the driver.

Requirements:

1. The driver should be a kernel-mode driver.
2. The file containing data (username & password) must be encrypted. (at least the password should be encrypted)
3. An application program with a graphical user interface should be implemented to test the driver. (the GUI might be something similar to the following figure)
4. The test application should be able to create & check the validation username-password pair.
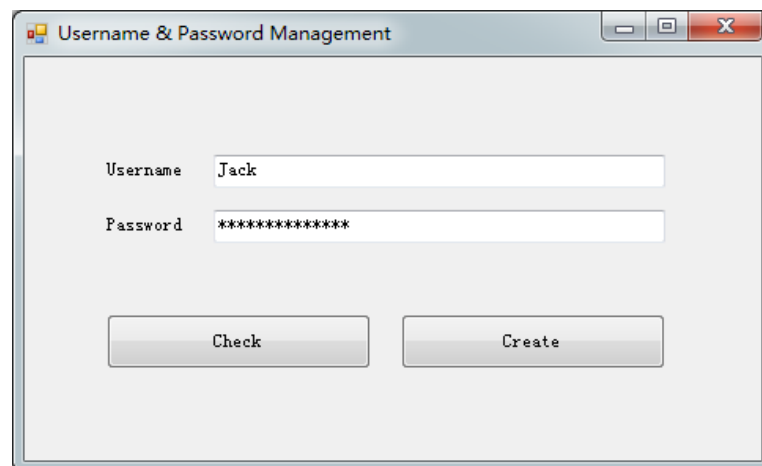
Submission

1. Source code
2. Compiled program (The test environment is Windows 7 or Windows 2008 R2. Please make sure your program can work well on either of the platform.)
3. Document that reports you implementation, which should at least contain:
   a) Implementation details that you think deserve highlighting.
   b) The procedure to test your program **WITHOUT** visual studio. It would be preferred to include some snapshots.
4. Zip all the material above and upload to ftp://jack_sunwei:public@public.sjtu.edu.cn/upload before the due date. The format of filename should be <name>+<student id>+project2.zip. If you have to upload more than 1 version, please make sure I can tell which one is final one through the filename.

Recommended Reading Materials

1. WDK downloads
2. Windows Driver Kit (WDK) 8.0 Samples
3. Developing, Testing, and Deploying Drivers
4. Any other useful resources on the web