AP Computer Science A@Beijing National Day School

`KeePass` Password Manager Tutorial

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Task Overview

- Setting up the KeePass password manager for Windows and Mac OS. Linux users should meet with me for assistance with this setup.

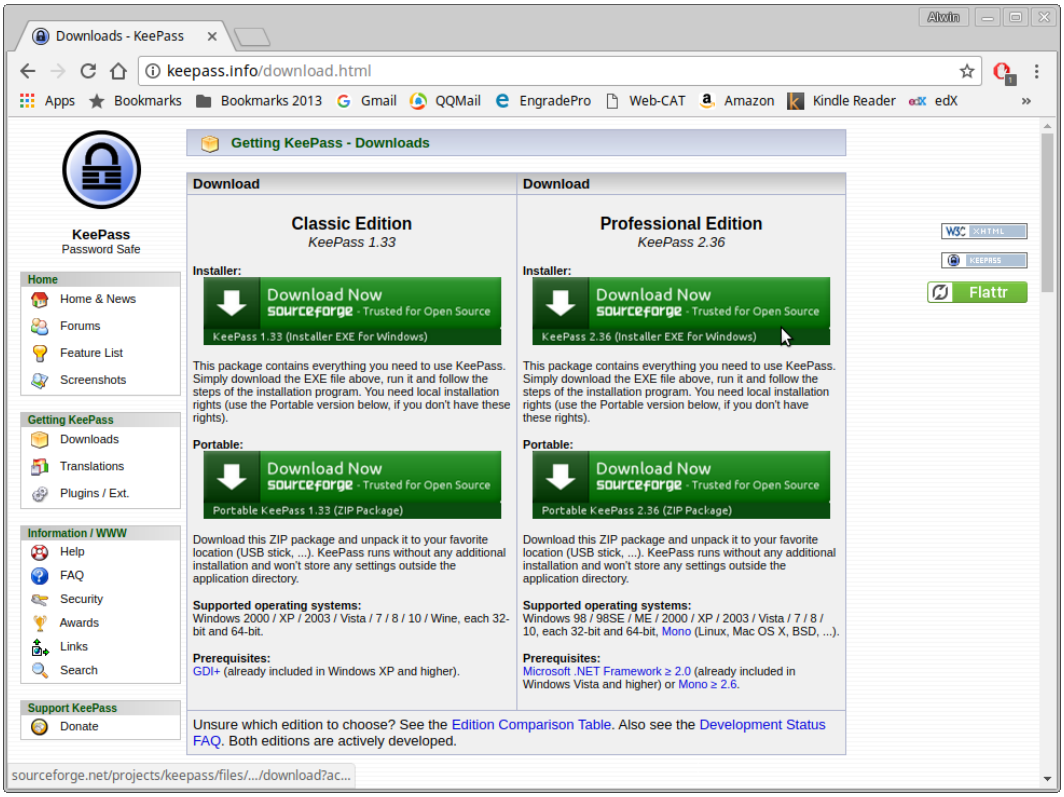
Setting up the KeePass Password Manager

- A major component of this course is submitting programming assigments to Web-CAT, an external website for autograding. However, this website requires each student to be assigned username and password credentials.
- In past versions of this course, large numbers of students had inexplicably lost, misplaced or forgotten their login credentials. This meant that I had to query the database directly to retrieve their information, which was a time-consuming process.
- In order to alleviate this situation, I am requiring each student to use the KeePass Password Manager to access the Web-CAT grading website.

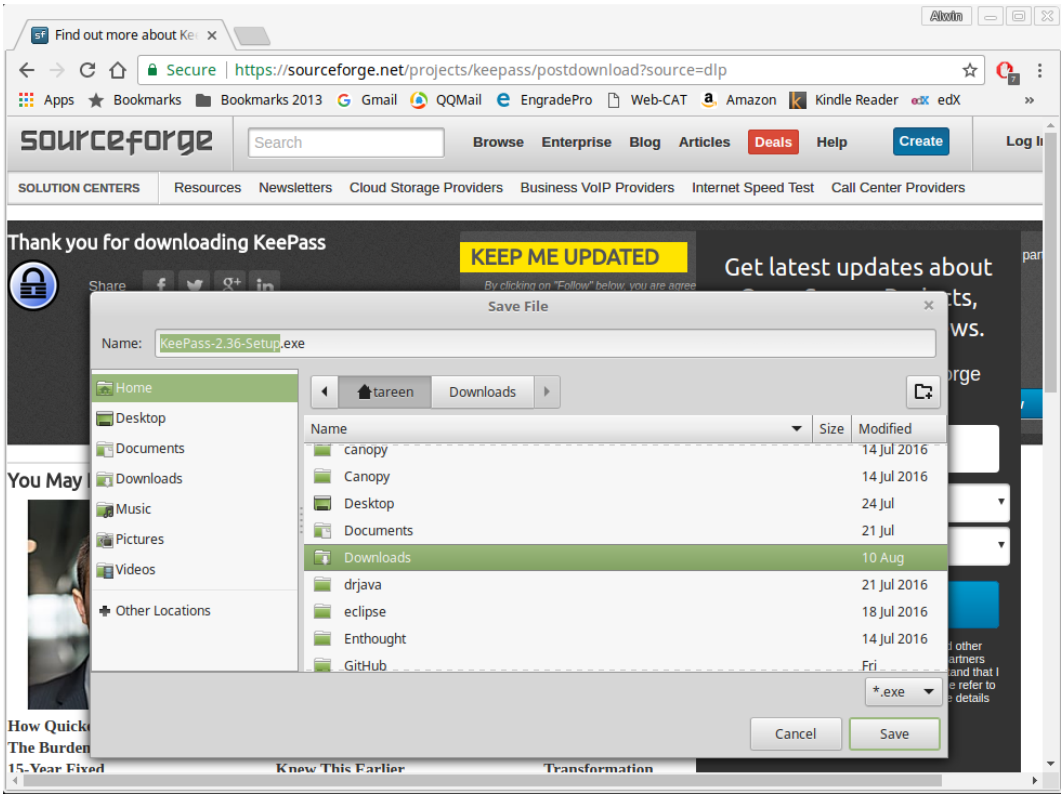
Installing the KeePass Password Manager: Windows Operating Systems

- Go to the KeePass website at: `http://keepass.info` and click on the `Downloads` link. I have indicated it below with my cursor.

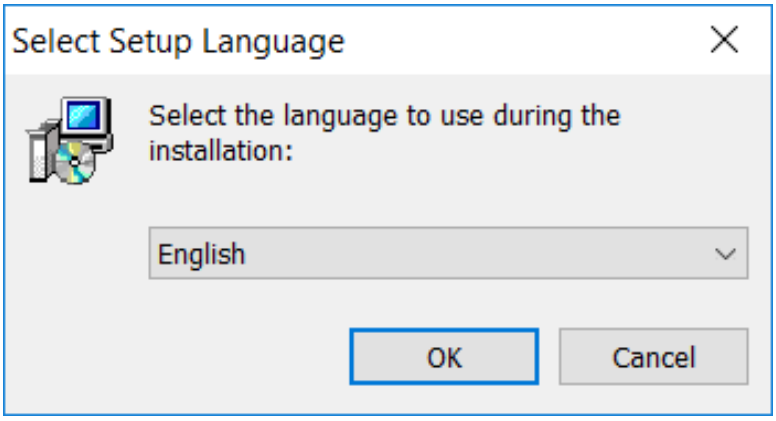
- Click on the big green button corresponding to `Professional Edition KeePass 2.36 Installer`. I have indicated it below with my cursor.



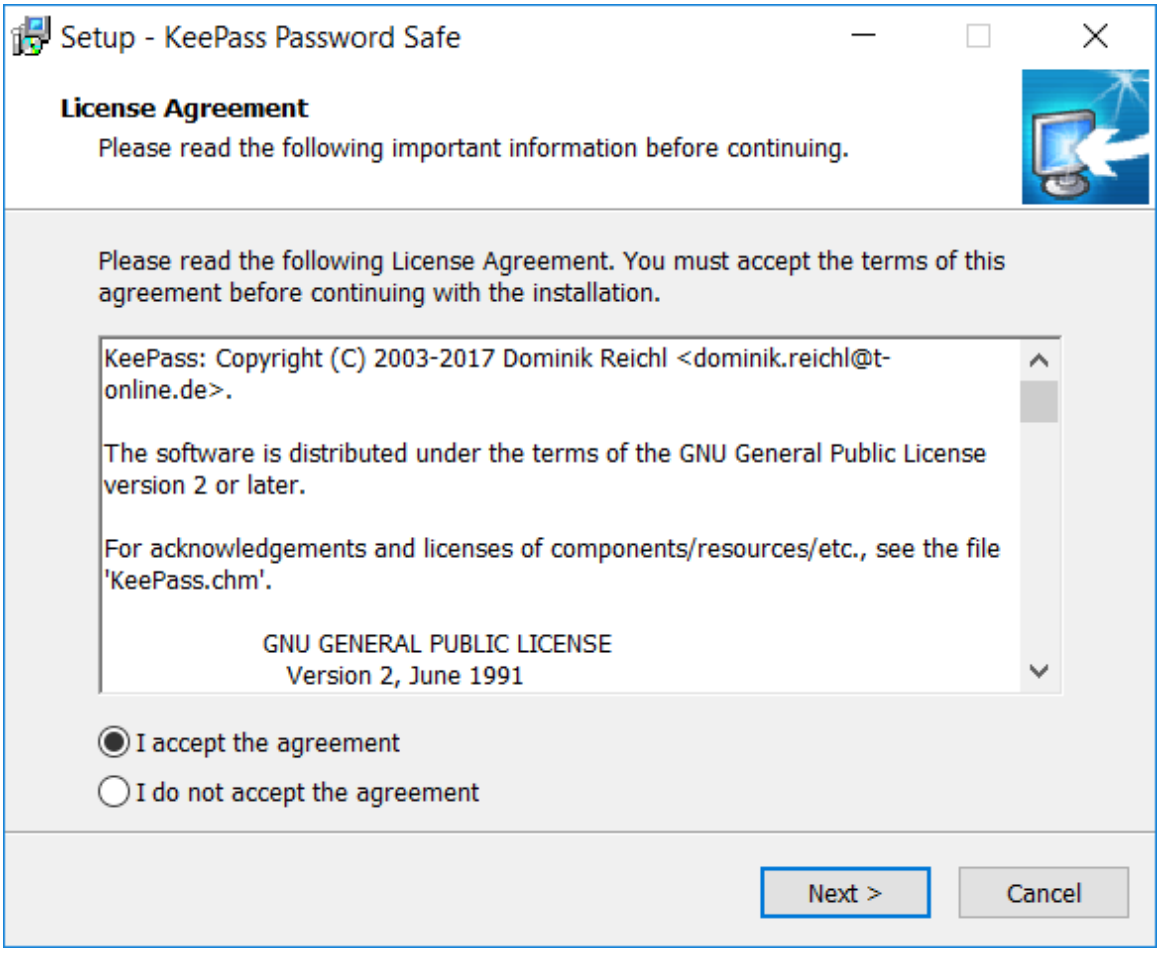
- You will be directed to the SourceForge website, where you will be prompted to select a location to save the executable file. I have chosen to save it in my `Downloads` directory.



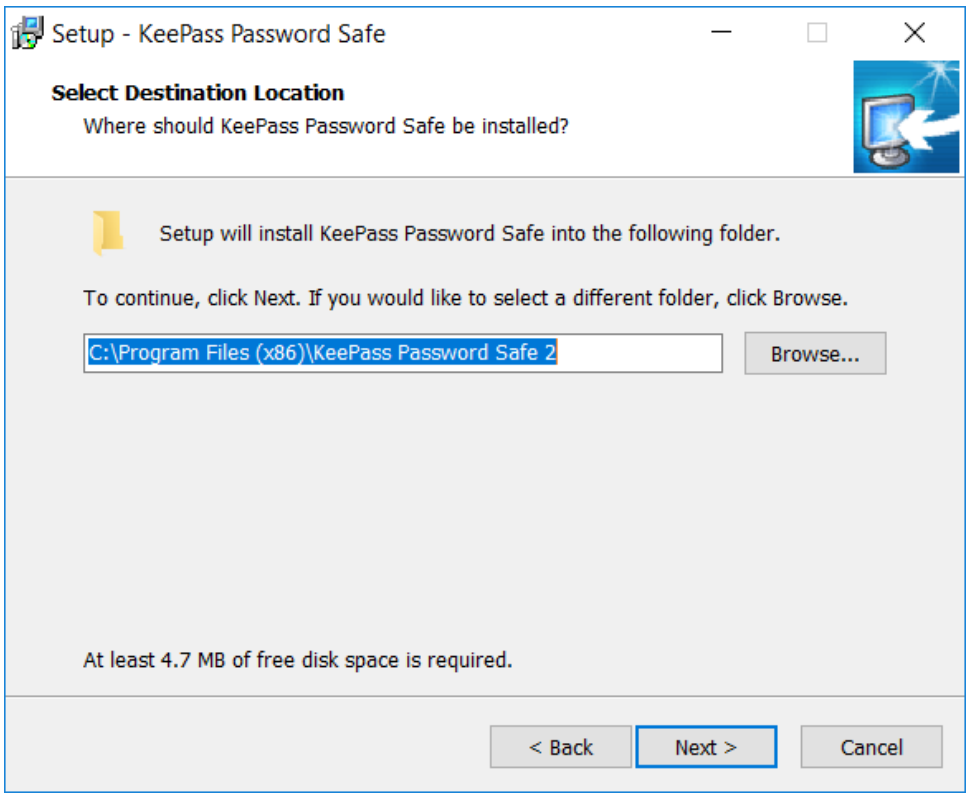
- Double-click on the `KeePass-2.36-Setup.exe` file to begin the installation process. I will be using a Windows 10 operating system to demonstrate this.
- The first window that appears is the `Select Setup Language` window. Confirm that the `English` option is selected, then click on the `OK` button.



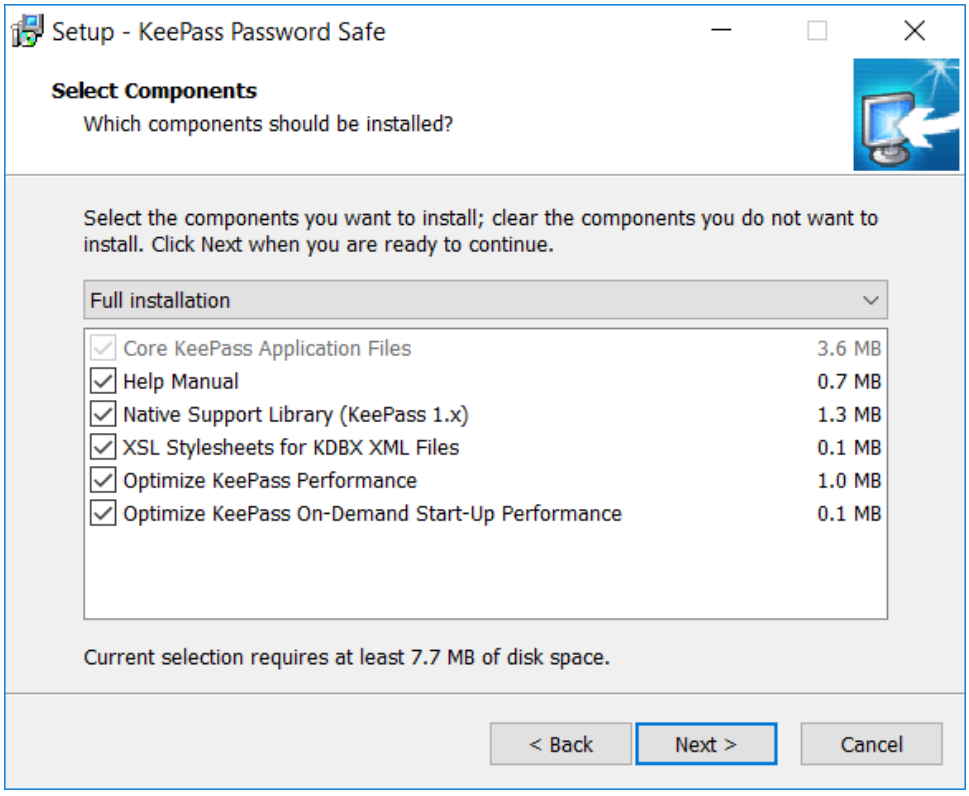
- The next window that appears is the `Licence Agreement`. Select the radio button corresponding to `I accept the agreement` and click on the `Next` button.



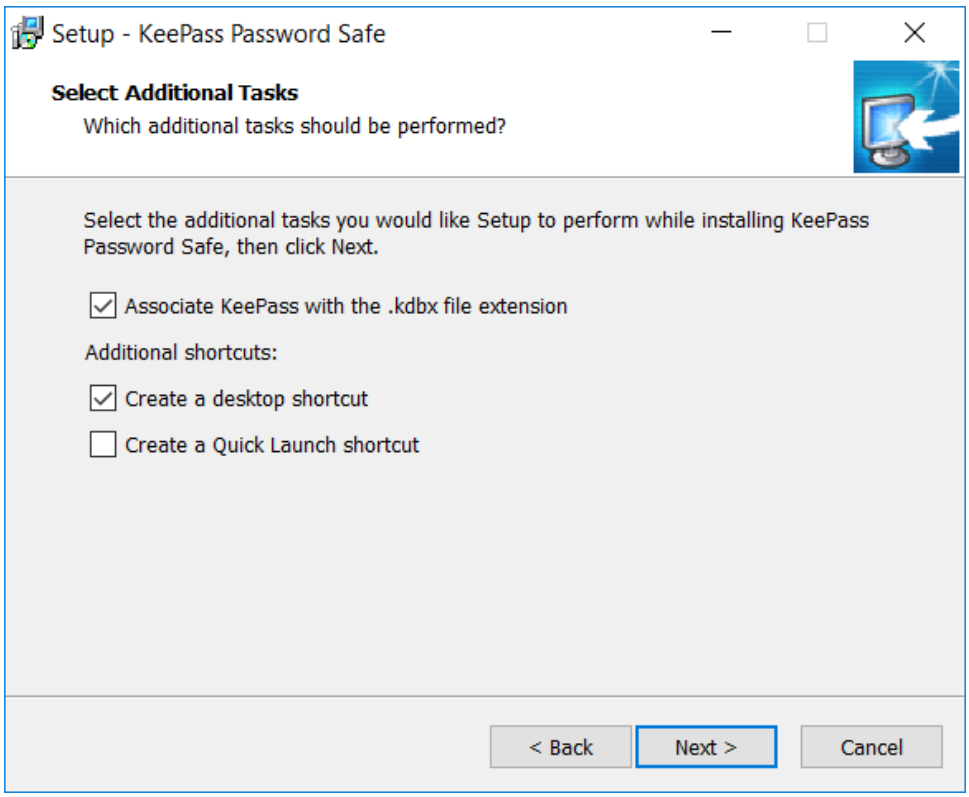
- The following window is the `Select Destination Location`, which specifies where the KeePass program should be stored. The default location is fine. Click on the `Next` button.



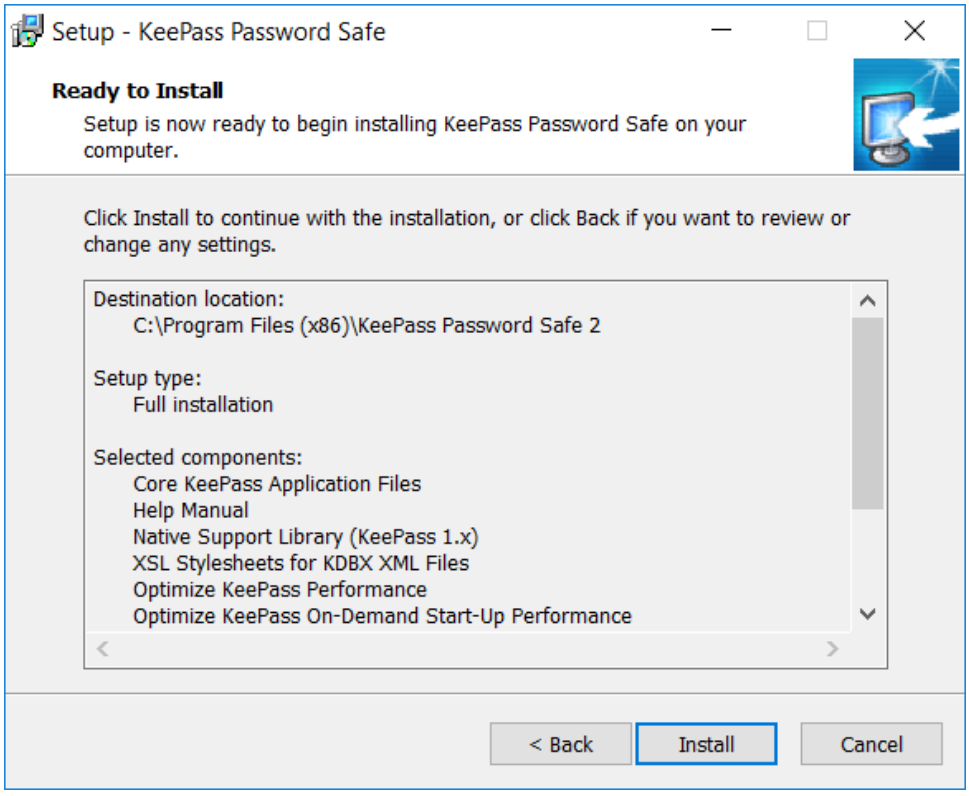
- The next one is the `Select Components` window, which gives users a choice as to the specific components to be installed. The default options are fine. Click on the `Next` button.



- After that, comes the `Select Additional Tasks` window. I have clicked on the option corresponding to `Create a desktop shortcut`. Click on the `Next` button.



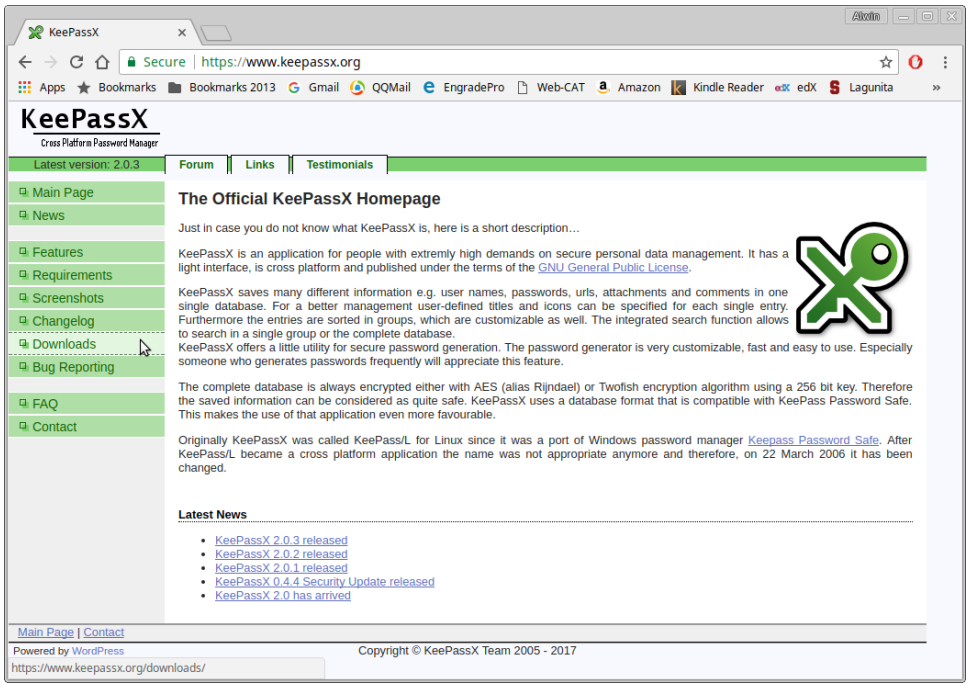
- Then, we have the `Ready to Install` window. At this point, everything should be configured properly. Click on the `Install` button.



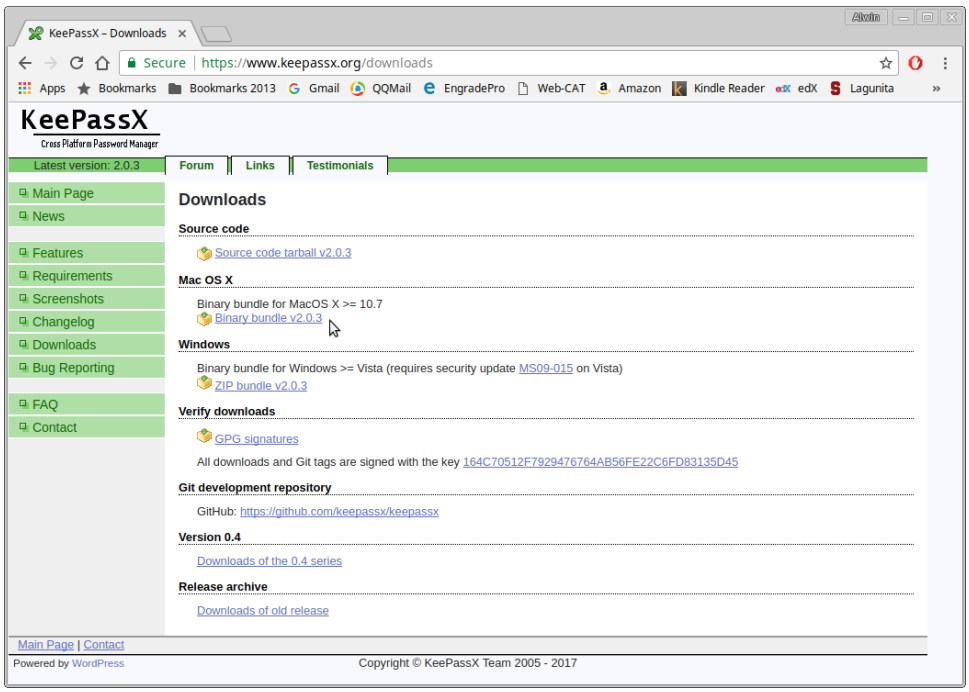
- If everything has proceeded correctly, you should see the following completion window. Click on the `Finish` button.

Installing the KeePassX Password Manager: Mac Operating Systems

- For Mac users, there is a variant called KeePassX which has virtually all the same functionality as KeePass.
- Go to the KeePassX website at: `https://www.keepassx.org` and click on the `Downloads` link. I have indicated it below with my cursor.

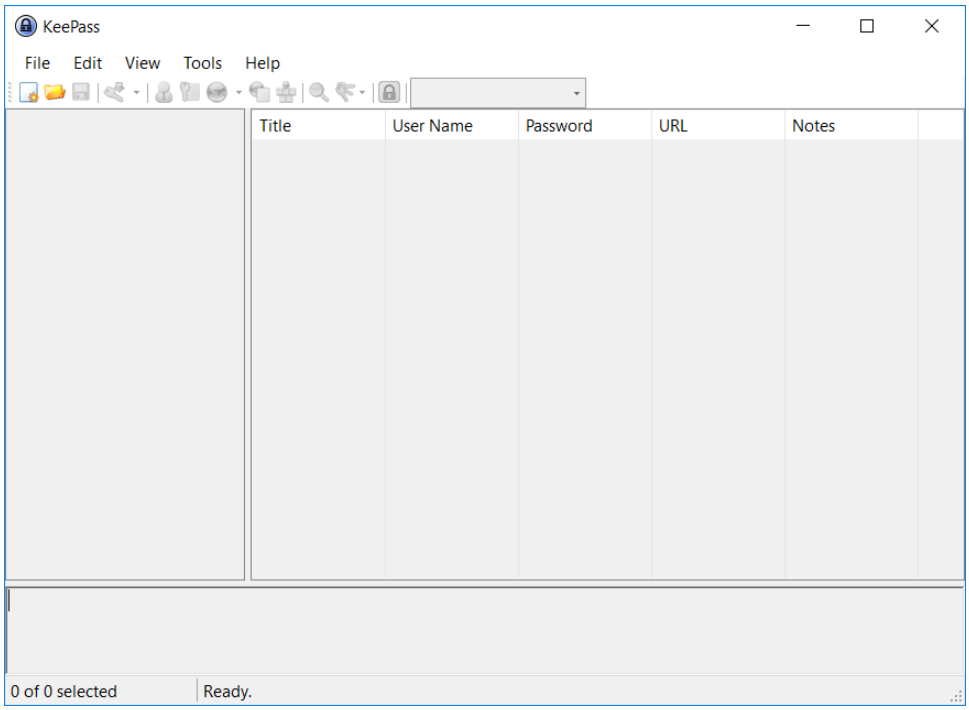


- Then, under the **Mac OS X** heading, click on the link `Binary bundle v2.0.3`. This will allow you to download the installation file. Unfortunately, I cannot give any more detail about the installation process, because I don't have an Apple computer.

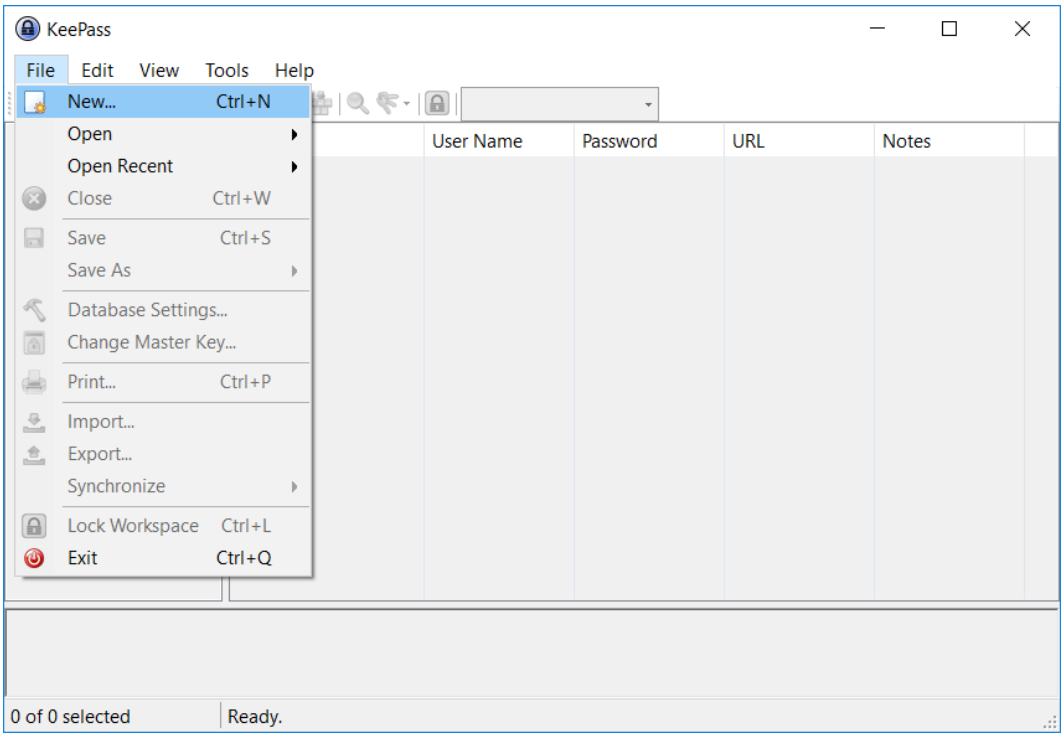


Configuring KeePass to Work with the Web-CAT Autograding Website

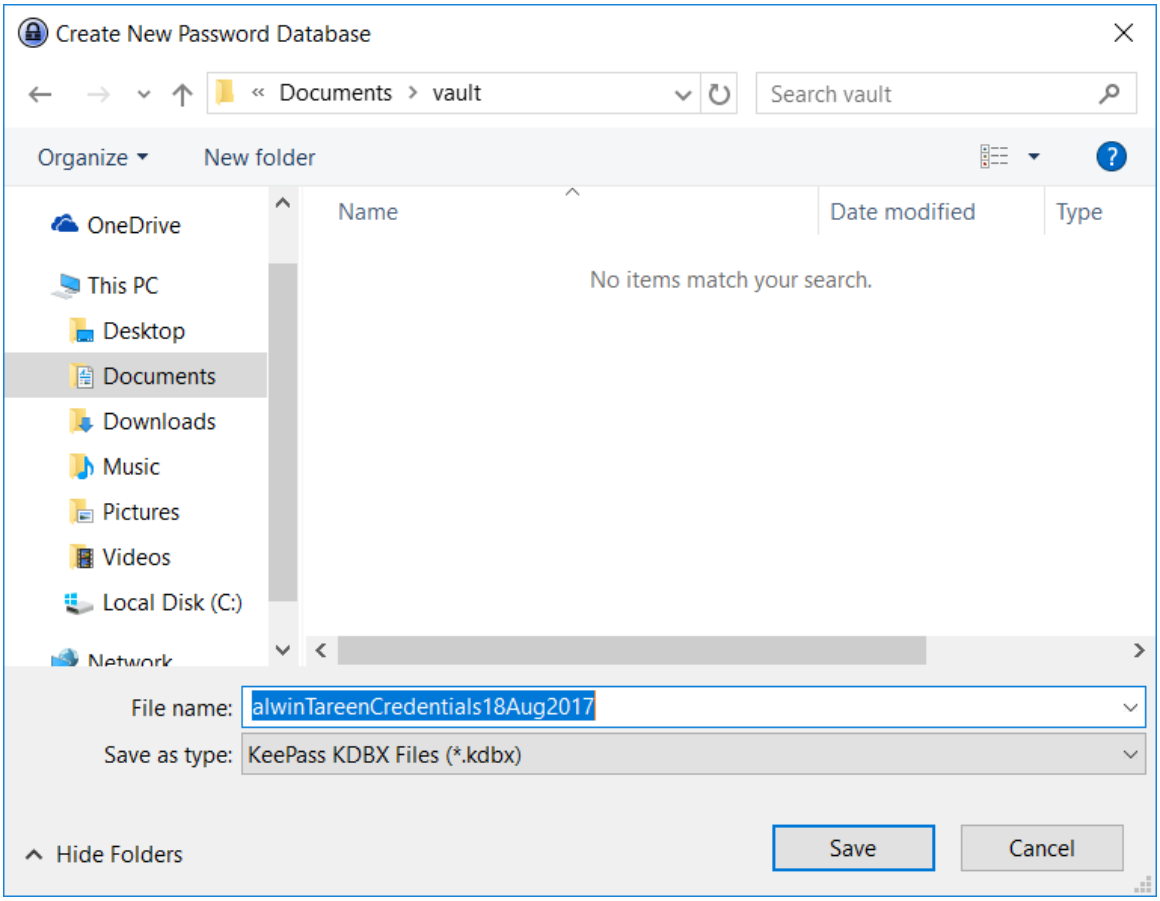
- Double-click on your desktop icon, or select the KeePass application from your Start menu to launch the program. You should see the following window appear.



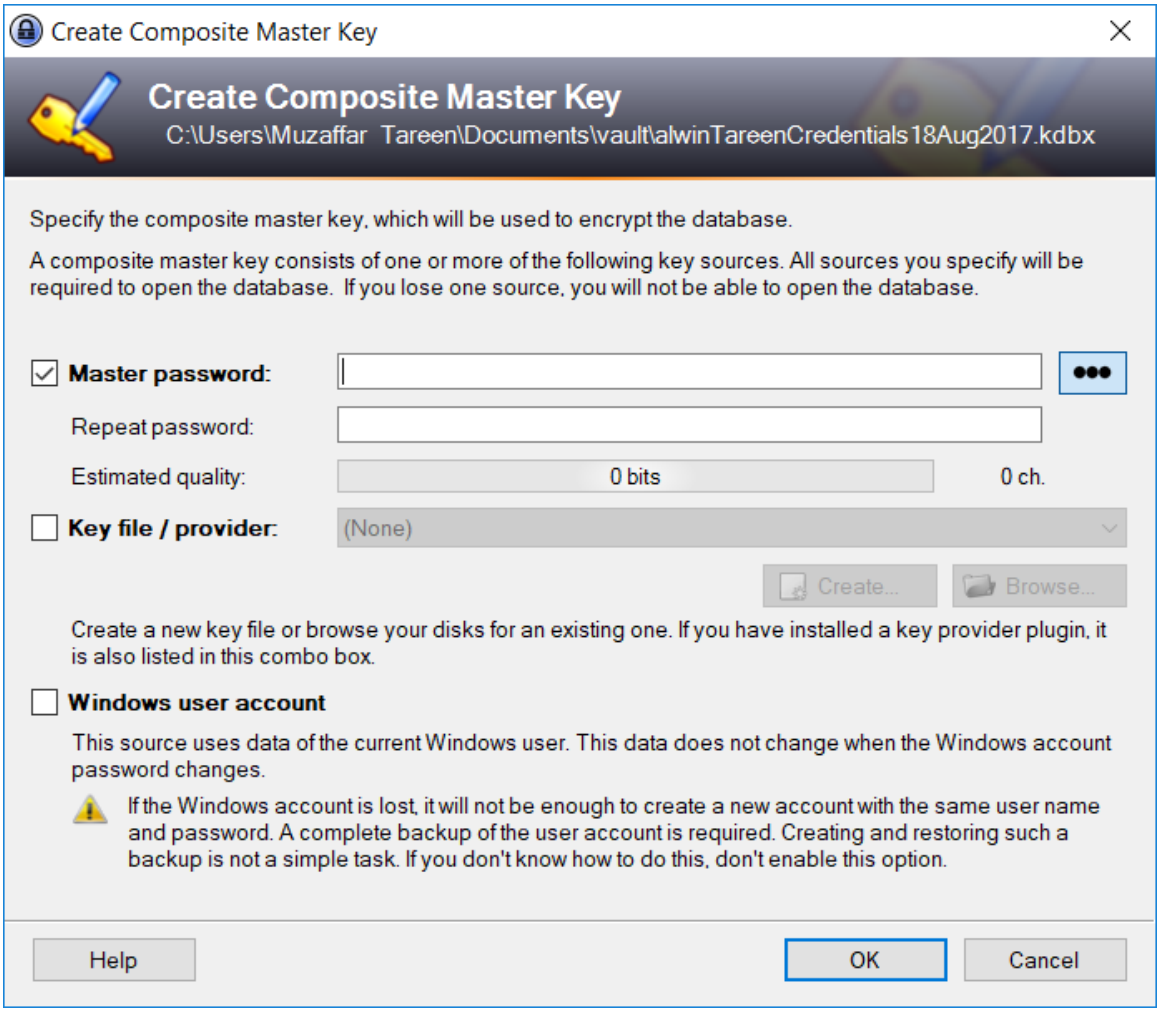
- The first step is to create a password database file. It is encrypted with one of the most secure algorithms currently known. Even if an adversary were somehow able to obtain a copy of your password database file, they would be unable to discover its contents.
- Click on the `File` menu, then select `New...`



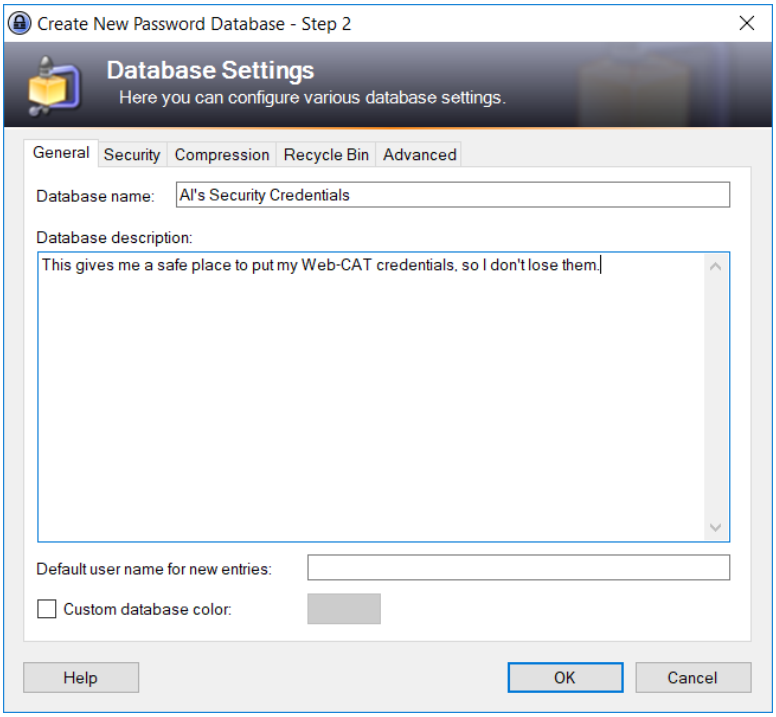
- The `Create New Password Database` window appears. I have chosen to save my password database file in a directory named `vault`, which is a sub-directory of `Documents`. Generally, I keep all of my credential files in this `vault` folder, so I don't lose track of them. I have decided to name my file `alwinTareenCredentials18Aug2017`, and you are free to choose a similar naming scheme. Once you have finished, click on the `Save` button.



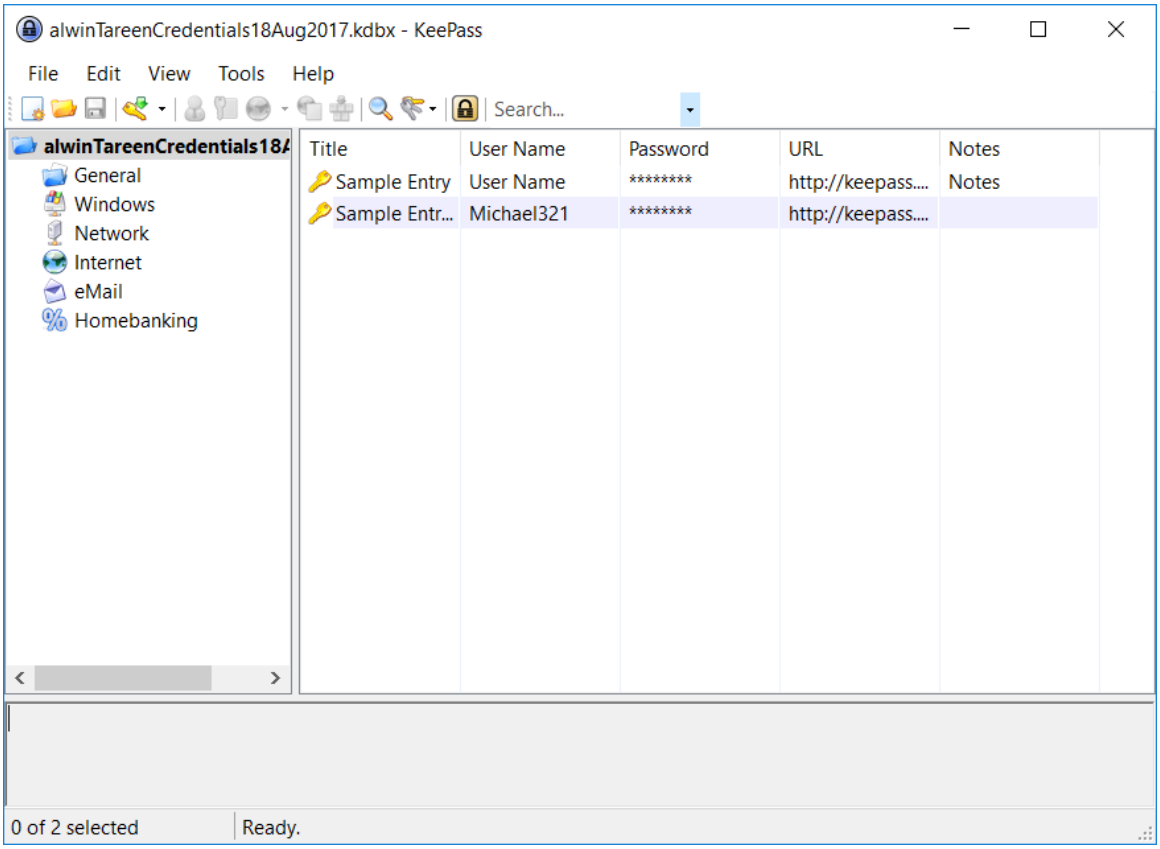
- Then, the `Create Composite Master Key` window appears. Here, you are expected to create a Master password that unlocks this database file.
- Take care to select a password which is strong, and spend some time memorizing it. **Do not lose this password!** If you are afraid you might forget it, then write it down somewhere safe, or take a photo of the password with your phone. If you lose this password, then there's no corrective action I can take, you simply won't be able to open your database file.
- Type your password into the `Master password` text box, then type it in again into the `Repeat password` text box. Leave the `Key file/provider` and `Windows user account` options unchecked. Then, click on the `OK` button.



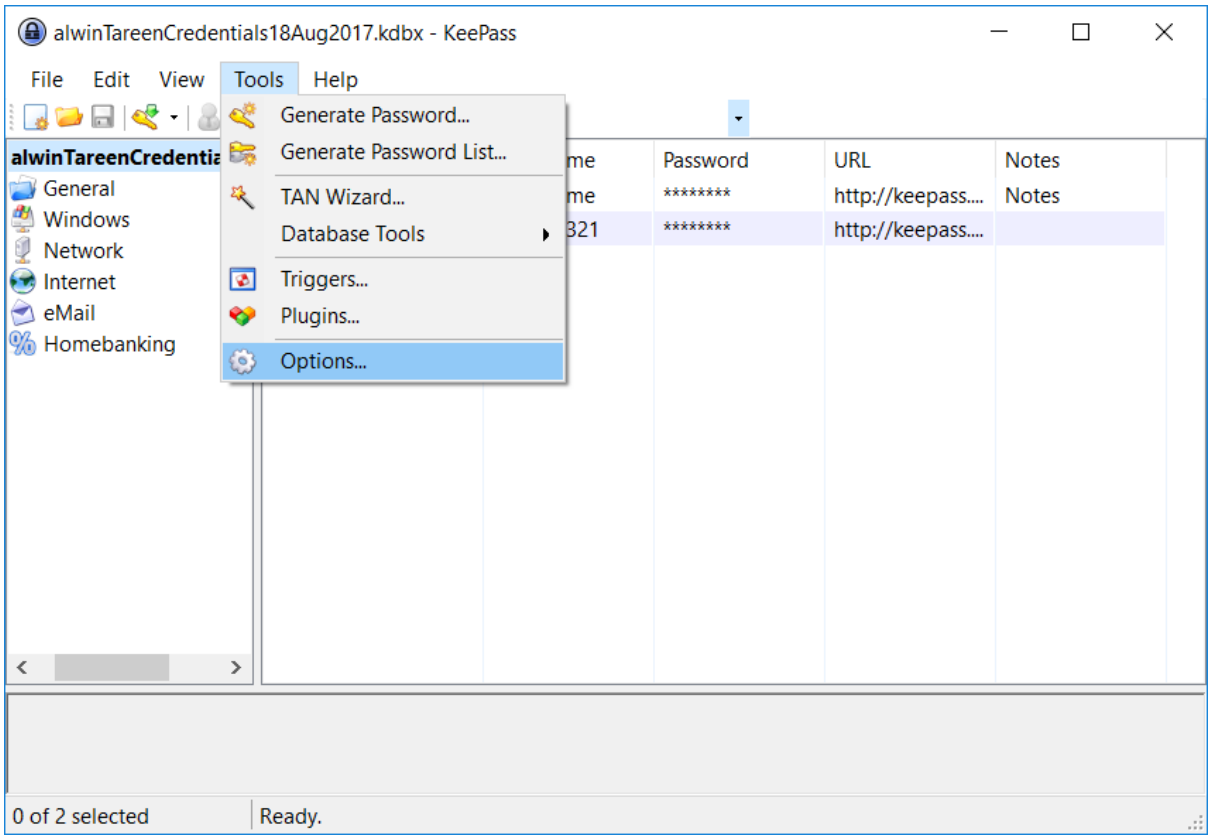
- Then, the `Database Settings` window appears. This is where you can customize some of the various settings. The default settings are fine. However, I have typed in a name for my database, as well as a description. Once you have finished, click on the `OK` button.



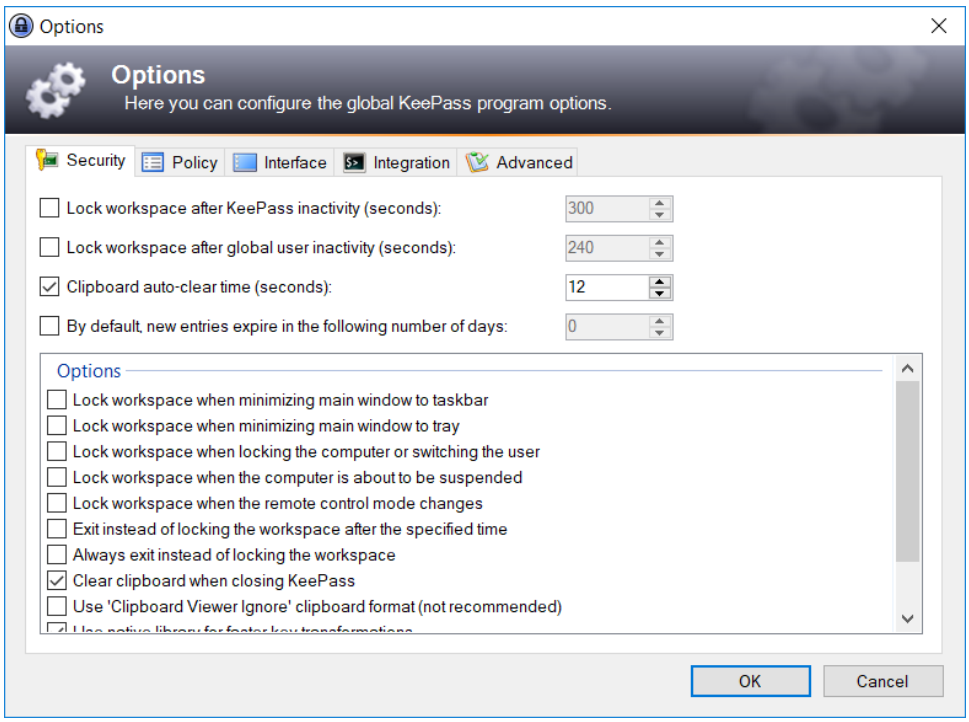
- Now, your password database file should be set up similar to the following window.



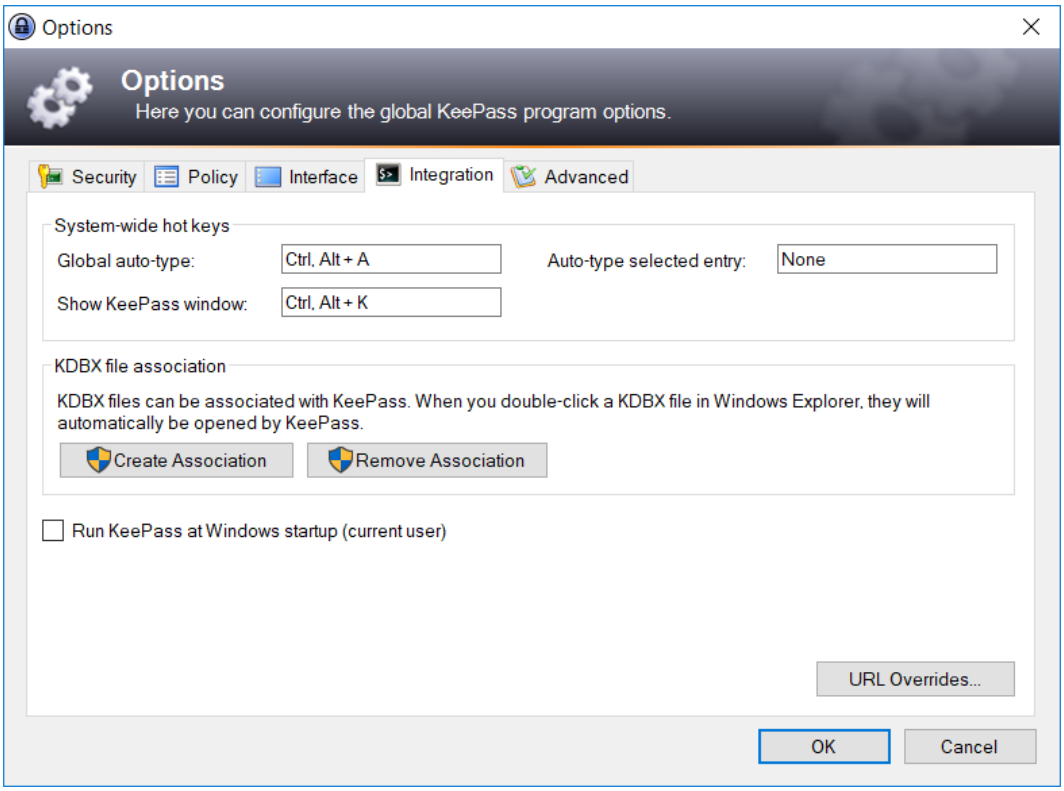
- Next, we need to configure KeePass to activate with a specific keystroke combination. Go to the `Tools` menu and select `Options...`



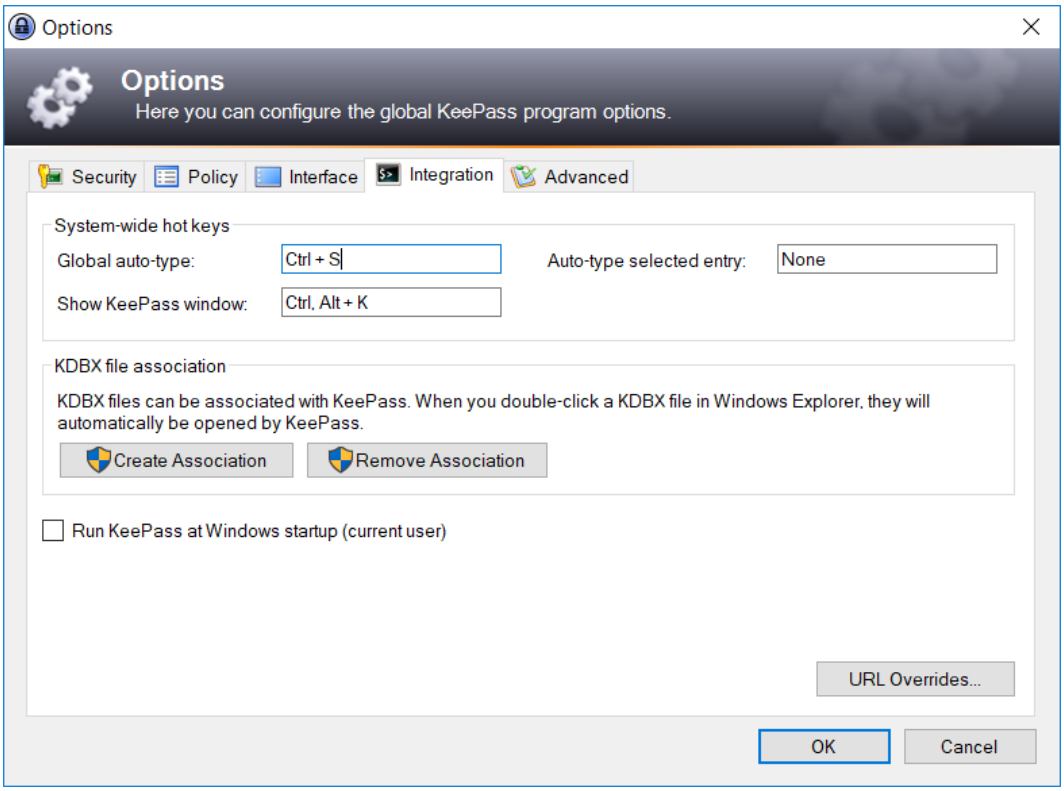
- You should see the `Options` window appear. Most of these options can be ignored. However, there is a particular set of options that we need to focus on. Click on the `Integration` tab.



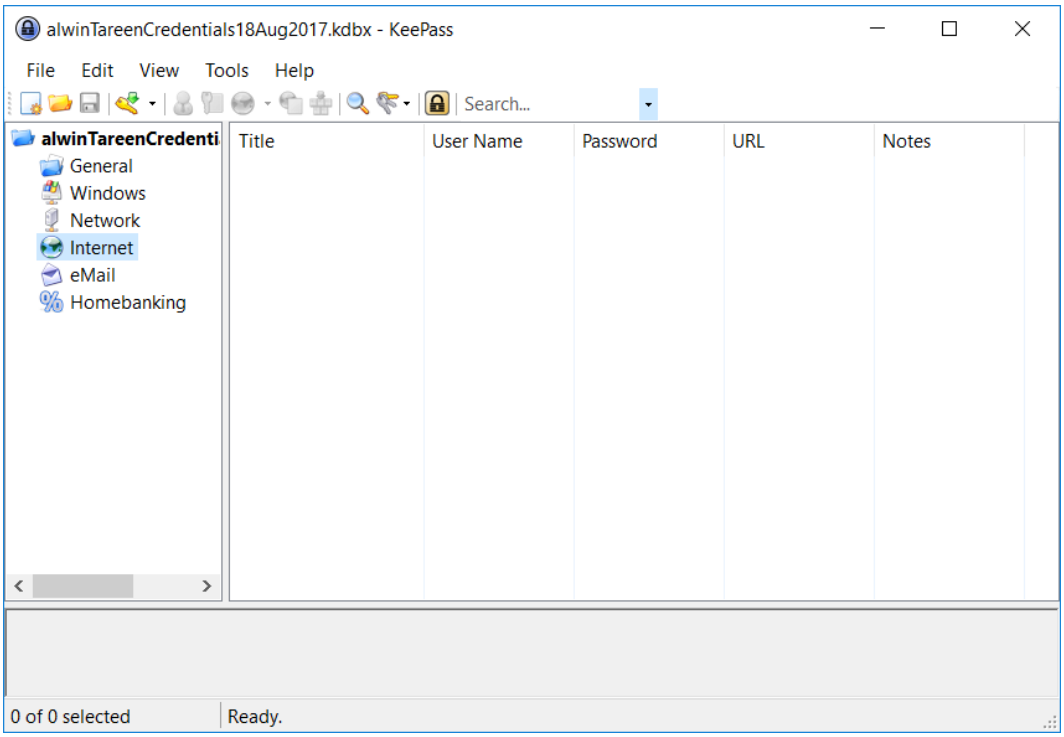
- Now, we are in the `Integration` tab. Our task is to indicate a specific keystroke combination that will automatically fill in the login and password fields for a website.



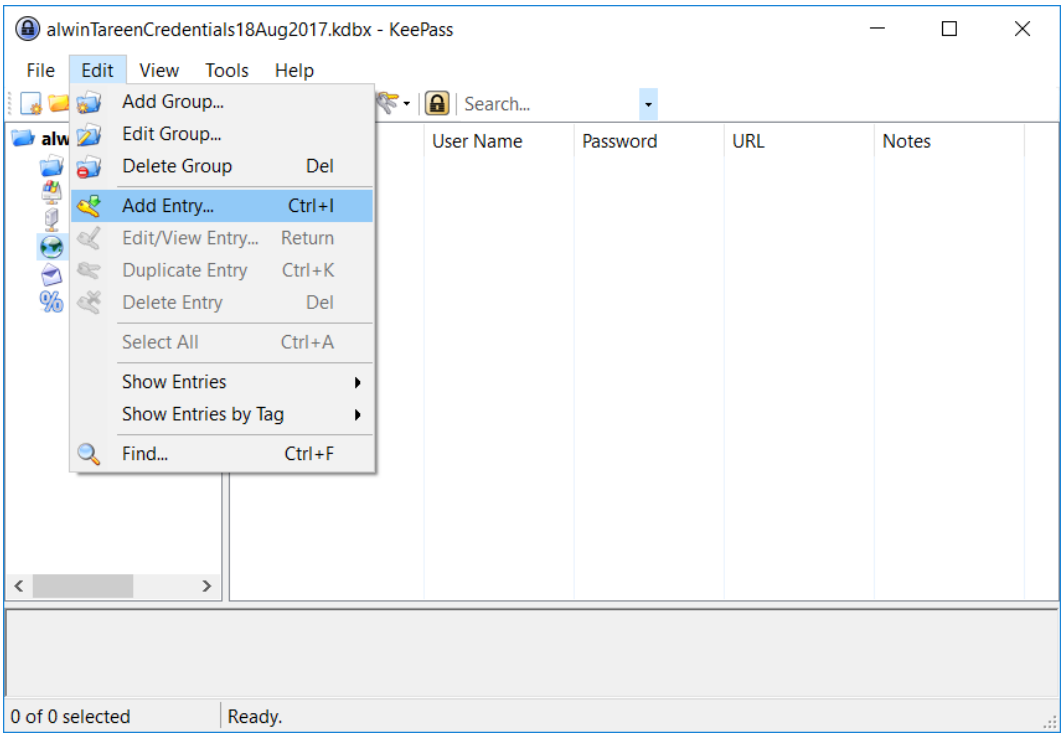
- There is a text box labelled `Global auto-type`, and we need to indicate a keystroke combination that will perform this action. Place your cursor inside this text box, and perform the keystroke combination `Ctrl + S`. You should see this keystroke combination appear in the text box. Then, click on the `OK` button.



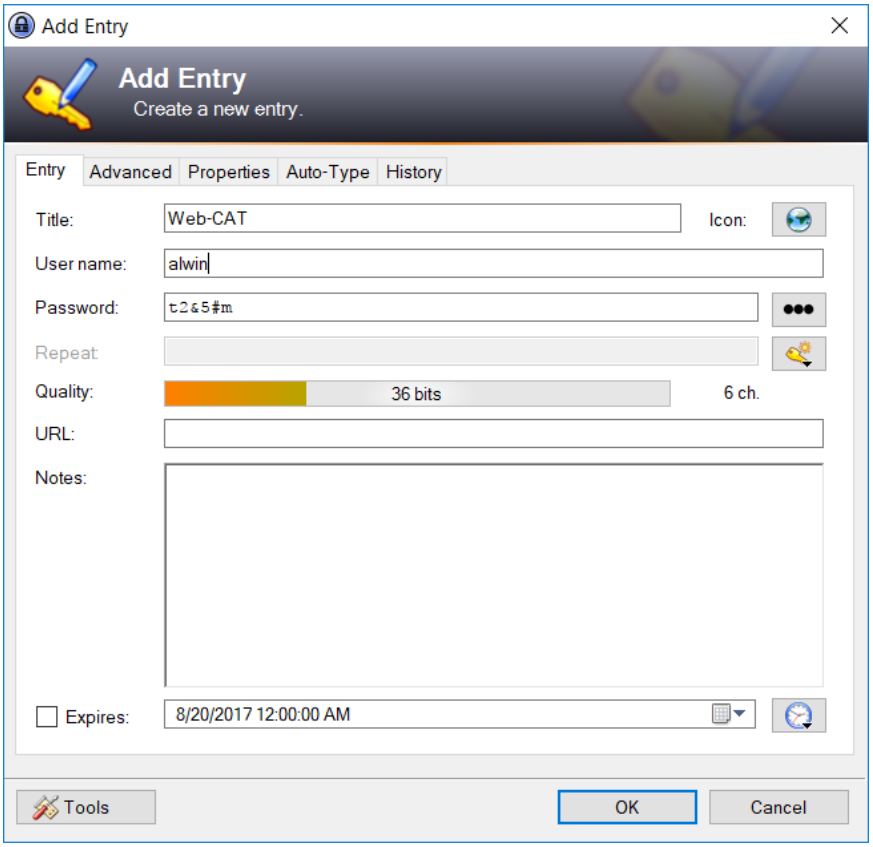
- Now, we need to place our username and password credentials inside KeePass. Notice that there are several sub-folders in the left hand panel that help you to organize your credentials. Click on the folder marked `Internet`.



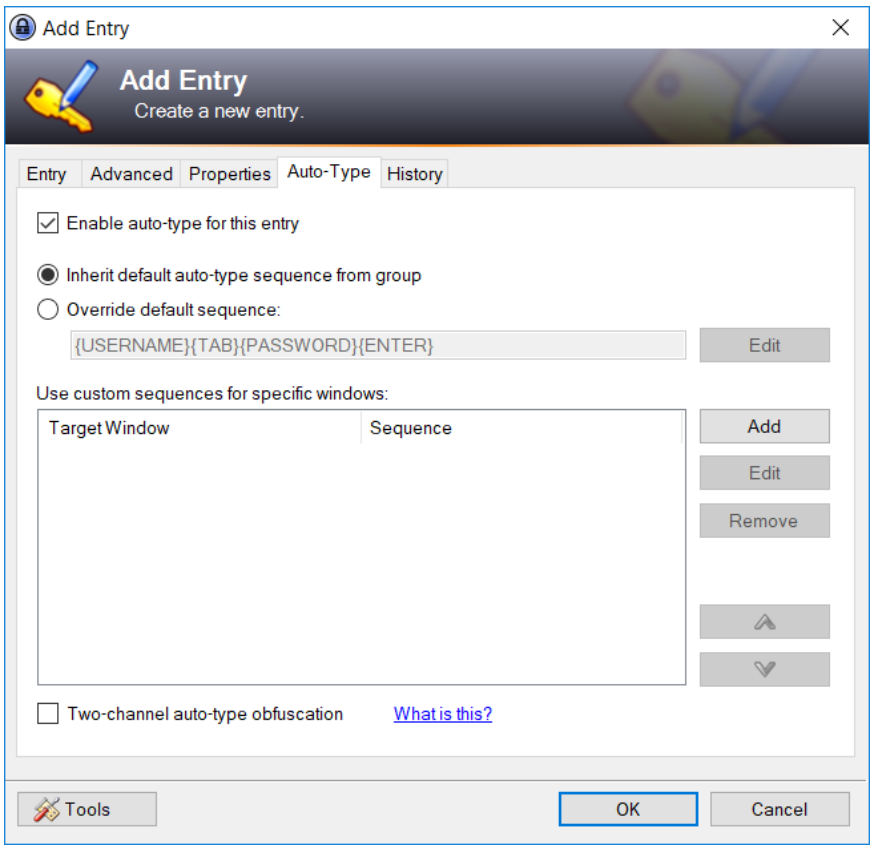
- Then, click on the `Edit` menu and select `Add Entry...`



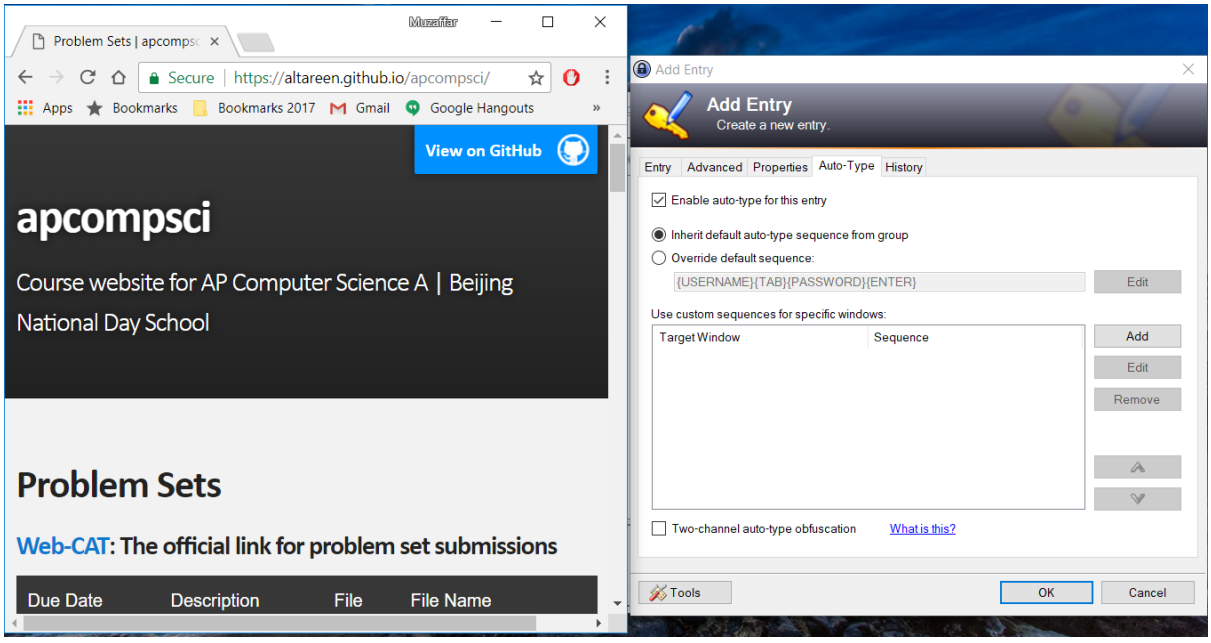
- You should see the `Add Entry` window appear. In the `Title` text box, type the word `Web-CAT`. Then, you must enter your username and password credentials. These have been sent to you through the EngradePro messaging system, and you must copy them into these text boxes. The credentials I have placed in there are just for demonstration, they are not my actual ones.



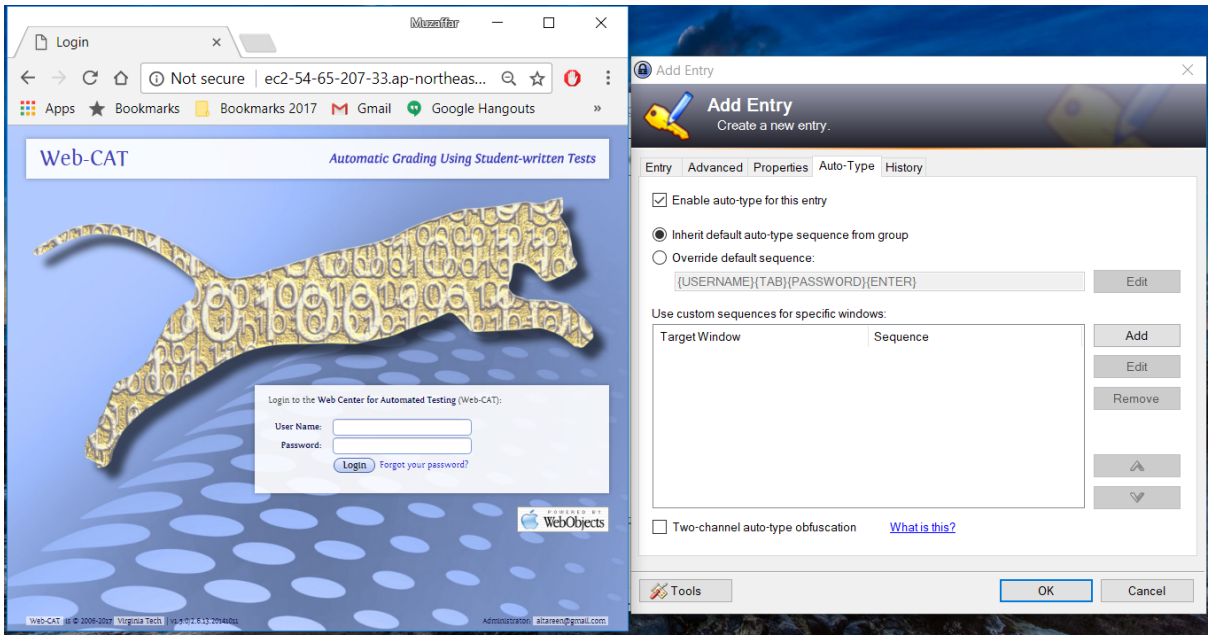
- Next, click on the `Auto-Type` tab. This is where we will link your username and password credentials to the specific website where they are supposed to be entered.



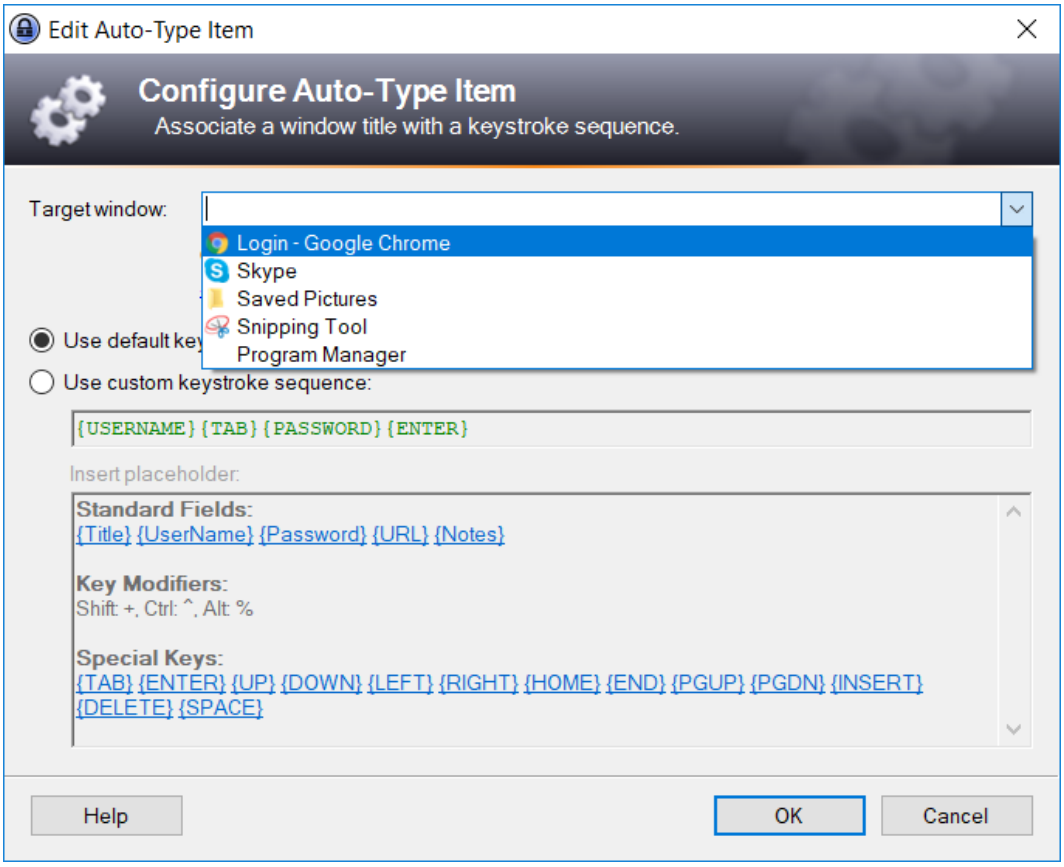
- Open up a web browser, and go to the course website, located at the following URL: `https://altareen.github.io/aslevelcompsci` Then, click on the Web-CAT link located under the **Problem Sets** heading.



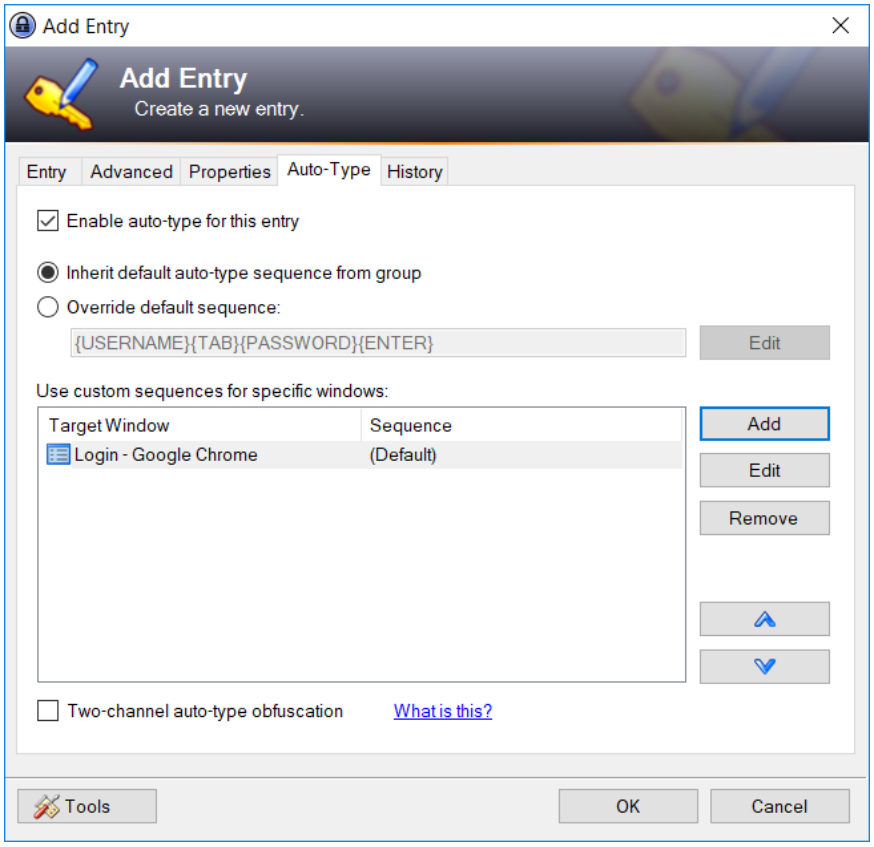
- Now, I am at my Web-CAT website. Go back to the `Add Entry...` window, and click on the `Add` button.



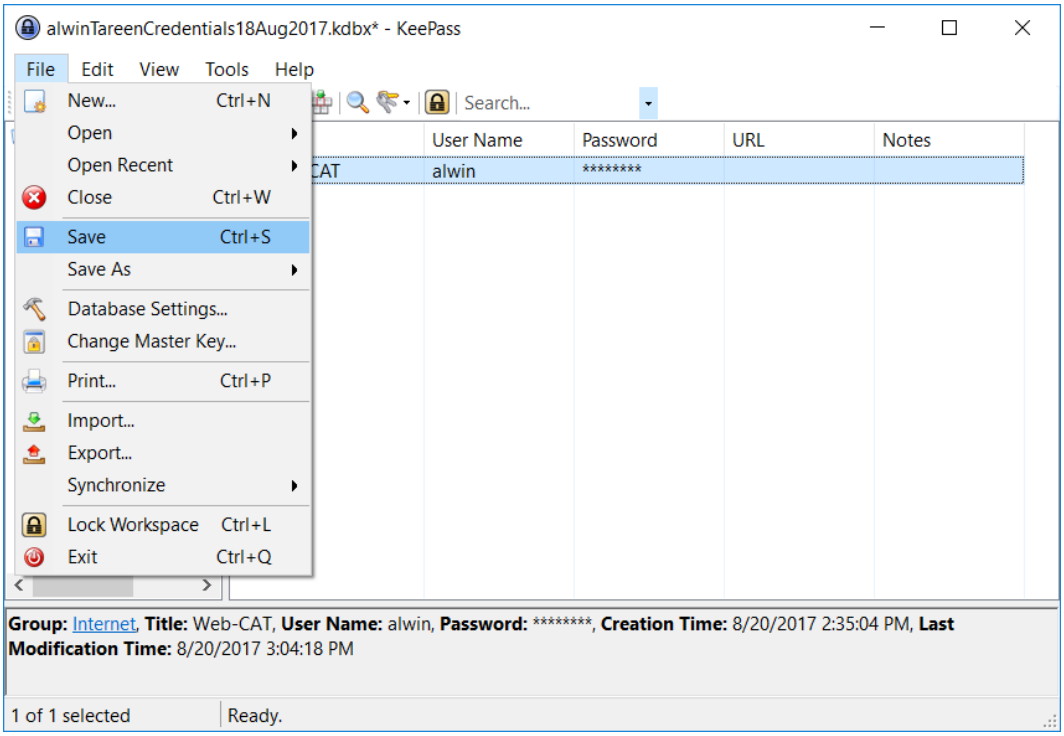
- The `Edit Auto-Type Item` window appears. There is a drop-down list corresponding to `Target window`. Click on this drop-down list, and select the option `Login - Google Chrome`. *Note:* If you are using another browser, it might show up as `Login - Internet Explorer` or `Login - Safari`. Then, click on the `OK` button.



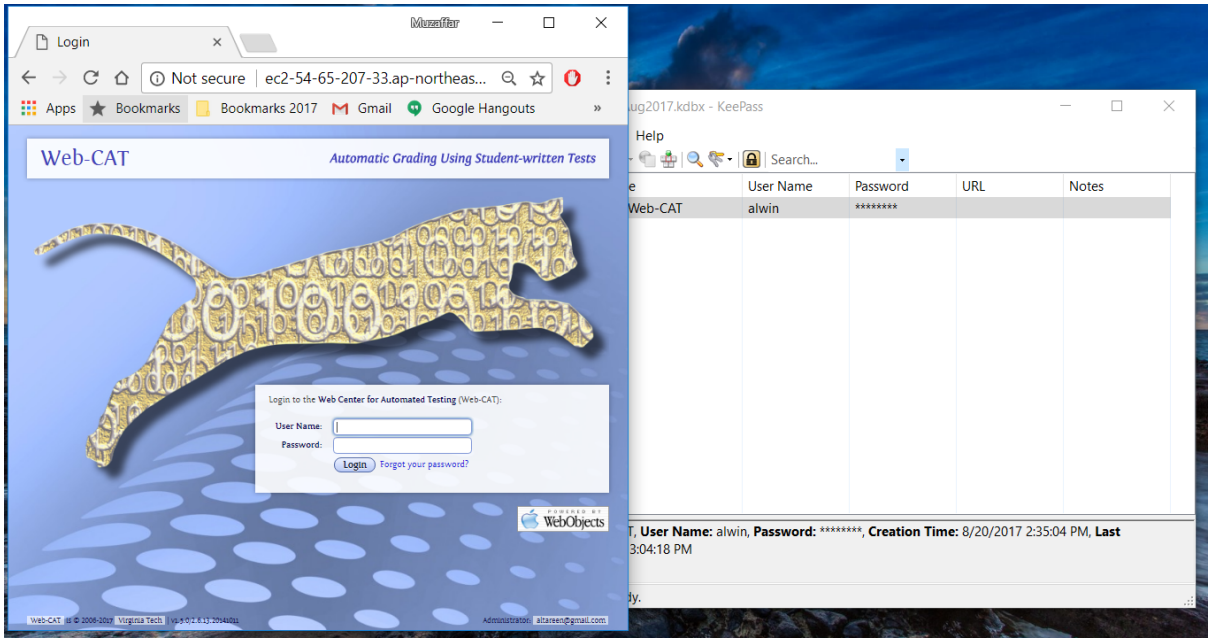
- The `Add Entry` window should look like the following screenshot. Essentially, we have connected your username and password credentials with the title of the Web-CAT webpage. This is how KeePass knows to place the correct credentials into Web-CAT. Click on the `OK` button.



- Next, you must save your changes. Go to the `File` menu and select `Save`.



- At this point, everything is set up properly, and you should be ready to execute the keystroke combination. Note that it only works when the KeePass application is open. Go to the Web-CAT website and place your cursor inside the text box corresponding to `User Name`. Then, perform the keystroke combination `Ctrl + S`.



- If you have configured KeePass correctly, then you should see your username and password being entered automatically, as well as the `Enter` key being pressed. You should then be inside your Web-CAT account. If you weren't able to achieve this, then something must have went wrong during the setup process, and you should see me for further assistance.