CSC 492 – Senior Project II Virtual Scheduler April 23rd, 2009

User Manual



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Introduction

The collegiate scheduling process has yet to experience the power of "Virtual Scheduler."

Problem

The modern day student at California University of Pennsylvania is required to meet with an assigned advisor once a semester in order to determine a potential upcoming schedule. Though this process appears quite simple, it is not as trivial for the typical college student. When creating a new schedule, a great deal of time is spent searching for required classes that will fit their personal schedule. In essence, there are many "permutations" of schedules. How does the student know if they have selected the right schedule "permutation" that will optimally fulfill their needs and preferences? The answer is a "function" of time. If the student spends the time to create all possible schedules, then they can observe each schedule and choose the best one. The scheduling process is a challenge and the root problem is the time required to generate schedules.

Prior to scheduling, the course listing is posted that explains each of the classes that are offered, including the course name, instructor name, location, etc. However, no course description is posted with the course listing. In essence, if a student wants to retrieve a description of the courses, they must consult the University Catalog. This inconvenience can hinder decision-making in the scheduling process.

Administration determines what courses to be offered. In some cases, students are polled to determine whether or not a course should be offered. These types of polls are typically done through email, which is quite informal. Not only do these polls typically isolate only students within particular colleges, but they presume that students are avid about the email process.

Solution

proposing a "Virtual Scheduler" software solution to generate schedules has the potential to reduce the amount of time dedicated to developing schedules. It can also provide the student with an array of schedules to choose from. This solution can benefit both parties of the scheduling process – the student and the advisor. A student can select potential schedules that fulfill their requirements and personal preferences. The student can bring potential schedules to advisement. Then, the advisor will be able to confirm that the schedule satisfies the student's academic requirements. Not only has the student found a schedule to optimally fit their needs, but the advisor has been eased of the challenge of creating schedules from scratch. In effect, the student and advisor will be able to spend their advisement time more effectively – a true Win-Win situation as defined by Stephen Covey, author of *The 7 Habits of Highly Effective People*.

"Virtual Scheduler" will also enhance the course listing by allowing courses to be viewed with a description. Not only will this increase decision-making in the scheduling process, but it will reduce the need for consulting the University Catalog exclusively for course descriptions.

In order to more formalize the polling experience, "Virtual Scheduler" will grant all students the power to participate in polls proposed by administration. In turn, administration will "seek first to understand"

and make decisions to benefit the student body. Formalizing the notion of polling will give administration a better understanding of the academic needs of students abroad.

Description

Intended Audience

"Virtual Scheduler" is an application that could benefit California University of Pennsylvania's current registration system. By integrating "Virtual Scheduler" with the current system, a large scope of students would be targeted as the intended users of the application. Students will ultimately have the power to utilize the majority of "Virtual Schedule's" functionality by generating schedules, viewing course listings with course descriptions, and participating in polls that could help determine whether a class will be offered.

Secondary Audience

In addition to the primary audience of the "Virtual Scheduler," other parties are likely to interact with the software. Perhaps advisors will be interested in generating schedules for students during their advisement session. Nonetheless, the process of creating schedules will be just as interactive and friendly as it is when students generate schedules. Regarding the polling functionality, administration will have the permissions to manage – add, modify, remove – the proposed questions. Also, the departments that created the questions will be able to view the statistics of the poll and help build decisions for the future of offered courses and curriculum.

Prospective students will also be interested in the power of "Virtual Scheduler." The scheduling process may be the factor that compels a student to enroll in a university. There is no better way to win those particular students than to provide them with a friendly way to create schedules for simultaneous and instantaneous viewing.

All Users

Login

There are two methods to log in to Virtual Scheduler. The most beneficial way is to enter a registered username and password into the appropriate text boxes and click the Login button. The information is then sent to the server and if authentication is successful, access is granted to all of the features of the application. The second method is to click the "Login as Guest" link, which will allow access to the Smart Scheduler function of the application.



Registration

In order to take advantage of all of the features of Virtual Scheduler, a user must create a Virtual Scheduler account. After clicking the Register link, the Registration page is opened and fields for Username and security questions are displayed. To successfully create an account with Virtual Scheduler, the user must have a valid email account with California University of Pa. The Cal U account name needs to be entered into the Username field, without "@cup.edu." After clicking the submit button, a random password is generated and sent to the user's email account. This password can then be used to log in to the application.

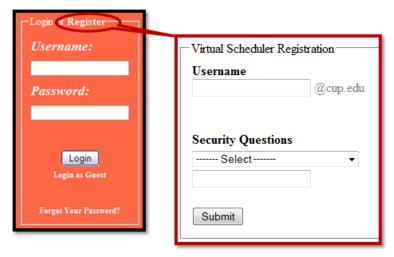


Figure 2 - Registration

Account Management

Reset Password

The "Reset Password" page will display the current username and prompt for the old password, new password, and confirmation of the new password. In order to successfully reset a password, the user will have to enter their current password, and their new password in both the New Password and Confirm New Password fields.



Figure 3.1 – Account Managements

Security Questions

The "Security Questions" page will display the question and answer the user provided during registration. To change an answer, type the new answer into the text box below the security question, and click the submit button.



Figure 3.2 – Account Management

Forgot Password Request

If there is a problem with the user name and password, or have forgotten the password, click the "Forgot Your Password" link. The following page will prompt the user for a username, security question, and answer to that question. After clicking "Submit," the information is verified and if successful, the password is sent to the users Cal U email account.



Figure 3.3 – Account Management

Students

Student Polling

Student polling is a way for faculty and staff to calculate the amount of interest the student body has in a taking a particular class in the upcoming semester. The user has the option of participating in the polling in order to show his or her interest in the class listed in the poll.

Selecting a Ballot

Once the user selects *student pulling* then *voting,* he or she will need to select which ballot they would like to vote on.

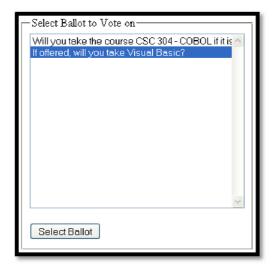


Figure 4.1- Student Polling

Voting

After the user has selected the ballot they wish to participate in, they will need to select their answer. Once the preferred answer is chosen, the user will need to select the Vote Button.



Figure 4.2-Student Polling

After the user has participated in the voting, the screen will return to the ballot selection screen. The user can then choose to participate in another ballot, or select home to return to the main screen.

Smart Scheduler

This unique technology is the core product of virtual scheduler and enables users to generate multiple schedules based on particular criteria. Smart scheduler is a robust web feature in that not all of the seven aspects must be executed in order to generate a schedule. However the minimal requirements to generate a schedule are the following sequential steps.

- 1.) Select a term
- 2.) Degree Audit or Course Listing
- 3.) Course Manager
- 4.) Generate Schedule

Select a Term

In order to begin the scheduling process one must first choose the appropriate semester. The information gathered in this section is critical to schedule generation. This portion of virtual scheduler enables the web application to get the correct semester information. To select a term simply:

- 1. Choose the down arrow on the selection box labeled "Select a Term". After clicking on the drop down box the user should have several different semesters shown.
- 2. Next choose the correct semester in which the user wishes to build a schedule upon by clicking on that text.
- 3. Finally, click the select button to submit the semester information to the server. After completing this task the user may then move on to the next feature.

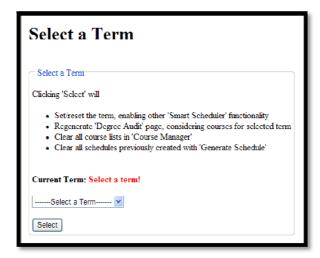


Figure 5.1 – Smart Scheduler

Warning: If the user selects a term after it has already been chosen it will reset the term and all of the "Smart Scheduler's" functionality.

- Set/reset the term, enabling other 'Smart Scheduler' functionality
- Regenerate 'Degree Audit' page considering courses for only the selected term
- Clear all course lists in "Course Manager"
- Clear all schedules previously created with Generate Schedule

Degree Audit

This feature of the schedule generation process though not required is very useful and user friendly. This enables Virtual Scheduler to build a schedule around the specific needs of the user set forth by the requirements students' distribution sheet. To access the degree audit

- 1. Users first must obtain their Degree Audit information from Student Services located on California University's website at https://sisweb.cup.edu/
- 2. Choose the "Enter Student Services" hyperlink. This link is located near the top of the webpage.



Figure 5.2 – Student Services

3. Next, the user will be prompted to enter their login information. The "Student ID" is the students CWID or Campus Wide Identification number and "Pin" would be that students corresponding password.

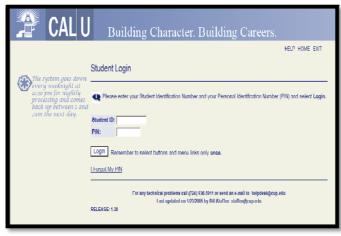


Figure 5.3 – Student Services

4. Then, after the user gains access into the student services they must click on the text "Student Records". This will create a drop down box with several different options to select. Please choose the text "Degree Audit" to proceed to the next page.

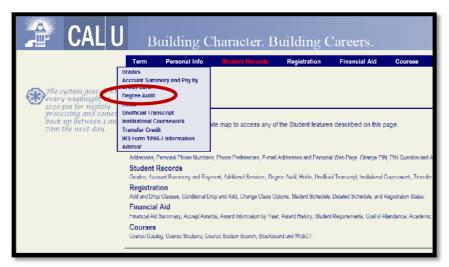


Figure 5.4 – Student Services

5. The site will prompt the user for the primary degree in which they desire to audit.
Please choose the correct degree and then click on the submit button at the bottom of the page.

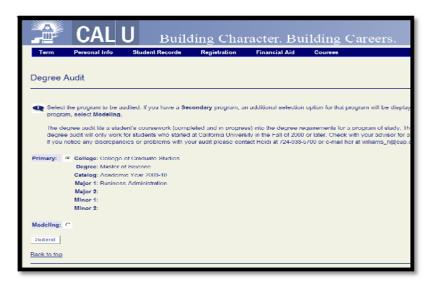


Figure 5.5 – Student Services

- 6. Finally the degree audit information will be displayed to the screen. Copy the text from the screen.
- 7. Once the information is gathered and copied onto the computers clipboard, all a user must do is simply paste the copied degree audit text into the given text box.

8. Once the information is gathered and copied onto the computers clipboard, all a user must do is simply paste the copied degree audit text into the given text box.



Figure 5.6 – Degree Audit

- 9. To finalize this process, the user may simply click on the load button that prepares the users degree audit information to be processed and shown on the next page.
- 10. If a problem occurs with the degree audit the user can choose to clear the screen using the "Clear Text Area" button and begin this step over again.

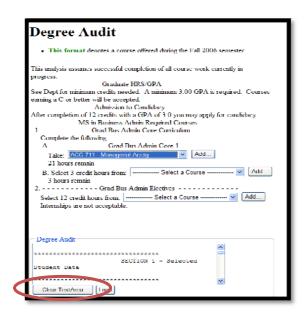


Figure 5.7 – Degree Audit

11. After choosing to load the Degree Audit page, the user may choose which classes to add by using the simple down drop box. The user may then choose the correct class and then click on the add button to submit the class to the Course Manager.

Course Listing

The Course Listing page provides users with a more familiar interface in which to interact with Virtual Scheduler. This is because it is modeled after California University current scheduling system. This feature is an alternative to Degree Audit so those students whom choose not to use it are still able to generate a schedule. To start using Course Listing simply

1. Choose the appropriate department for which the desired course is a member. Then click the "Select" button when finished.



Figure 6.1 - Course Listing

- 2. The next page will display all course offered for that particular department for the given semester. Choose the desired course amongst all the courses that are offered and click "Select".
- 3. To move on to the last page simply click on the "Select" button. However to go back to the previous screen please click on the button labeled "Back to Departments".



Figure 6.2 - Course Listing

- 4. The last page will display all the times that particular class is offered. This also will display specific information pertaining to the class such as the class times, dates, and the instructor.
- 5. To finalize the selection, simply choose the "Add" button; otherwise go back to either the Departments page or Courses page by selection the corresponding button.

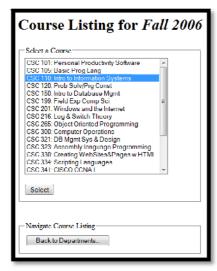


Figure 6.3 - Course Listing

- 6. After successfully completing an add to the course manager, repeat steps one through five until completely satisfied all courses have been accounted for.
- 7. The user can navigate through these choices by clicking "Back to Departments" or "Back to Courses."

Course Manager

The Course Manager is the portion of Virtual Scheduler where the user will make decisions of whether a class is a necessity for the upcoming semester or merely just a desired course that may or may not be supplemental to the user's degree.

- 1. To begin this step of the process, the user must first be presented with classes in the potential classes list. These classes should correspond with the classes that were added in either the "Degree Audit" or "Course Listing" section of Smart Scheduler.
- 2. An alternative to using the Degree Audit or Course Listing feature of adding classes to Course Manager is simply by typing the course in the textbox below and then submitting that class by selecting the button "Add to Potential Courses.

Note: If the user is not presented with any classes in the potential courses list then it is suggested to repeat either Degree Audit or Course Listing to make sure the appropriate classes are added to the Course Manager.

- 1. Next, the user may select a course from the Potential courses list. After selecting a course the user may then add that selected course to either the "Courses Needed" list or "Backup Courses" by choosing the correct button.
- 2. The user may also remove a course in the potential courses list by choosing that course and clicking on the remove button.



Figure 7.1-Course Manager

3. After the courses have been added to the correct lists, the user may change the priority of the classes. They user can perform this action by choosing a class from the list and either click the "Move up" or "Move Down" button for either the Courses needed, Backup Courses or Potential Courses lists.

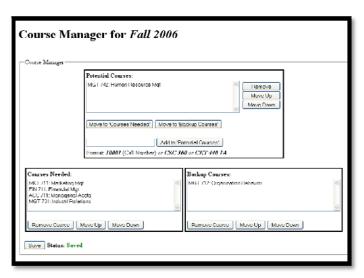


Figure 7.2- Course Manager

4. To finalize this portion of Smart Scheduler, the user may click on the "Save" button on the bottom of the screen. By clicking on this button, the user's information will then be passed onto the next part of Smart Scheduler.

Student Availability

This feature of Smart Scheduler allows users to select time intervals in which they are unable to attend classes. This may be due to conflicts with work or school activities. Though Student Availability is not a requirement in order to process a valid schedule, it does develop a more accurate schedule. To begin blocking off time intervals simply

- 1. The user will select half hour intervals that he or she wishes to have blocked off. As the buttons are selected, they should begin to turn red in color.
- 2. When the user has completed selecting which time intervals to block off and is satisfied with their selection they can complete this section by simply clicking on the submit button.
- 3. By choosing the submit button which is located at the bottom of the webpage, their information is then sent to other portions of the program in order to generate the most optimal school schedule.
- 4. The user can also clear all button by simply clicking on the blue hyperlink entitled "Clear" which will set all the buttons back to their initial state.

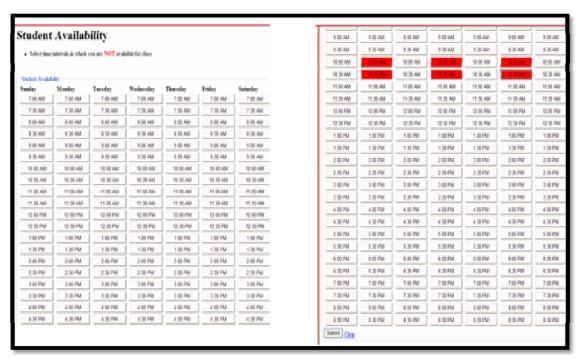


Figure 8-Student Availability

Generate Schedule

Generate Schedule is possibly the most important and final feature of Smart Scheduler. This portion of Smart Scheduler allows the user to specify information regarding the upcoming semester. This information includes Credit hours, Degree Type, and valid or forced schedule.

- 1. Before performing the generate schedule feature the user must first have preformed the previous steps to insure that a term has been selected, and courses have been added into Course Managers Course Needed lists.
- 2. Next, the user will choose the schedule type. The schedule type is either valid, which is that there will be no time conflicts between classes or availability. The second option is forced schedule, which is that it generates a schedule based on what classes are needed, disregarding any time conflicts.

Note: It is recommended to only generate valid schedules to ensure accuracy. Only in certain situation should anyone overload or force a schedule.

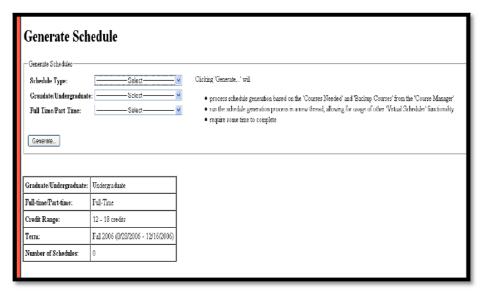


Figure 9.1-Generate Schedule

- 1. The second question is whether the scheduler is to generate a graduate or undergraduate level schedule. This question pertains to the degree type of either a bachelors or master degree. Please select the appropriate degree type.
- 2. The third question pertains to the students schedule status. This is either full-time or part-time student, and depends on the students credit hour range.
- 3. After the three answers have been selected, the user can finalize this part of Generate Schedule by clicking on the "Generate" button below the questions.

4. Next, the user should be presents with several different schedules to choose from. The user should read through all schedules until the best fitting schedule has been selected.

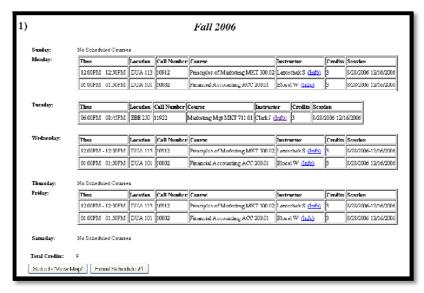


Figure 9.2-Generate Schedule

- 5. Once the user has chosen the correct schedule to fit their needs, click on the "Select View Map" button. By selecting this button the map feature of virtual scheduler will be enabled.
- 6. Another feature of Generate Schedule is to email oneself a copy of their schedule to their campus email address by simply clicking on the "Email Schedule" button. This email address is also the one that was used to register to this service.
- 7. An additional feature of Smart Scheduler is being able to find the contact information of the instructor. This information can range from office location, email address, and phone number. To do so simply click on the blue hyperlink entitled "Info" under the instructor.

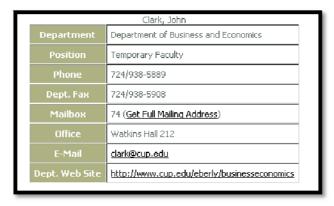


Figure 9.3-Generate Schedule

View Map

One of the final features of Smart Scheduler is the View Map. This feature allows users to view a topographic representation of where their classes are being held. This feature is made possible by interfacing with Google maps to display the satellite image of California Pennsylvania. To begin, the user may

1. Adjust the map by using the arrows on the upper left corner of the *screen. The user can use these* tools along with the zoom in/out to focus on a particular area of campus.



Figure 10.1-View Map

- 2. Next, the user can choose from three different map types. These types are an ordinary map which is simply a blueprint of the street layout. The second type is a satellite map which is a more realistic view of California. The third map is a hybrid which is a combination of both maps the ordinary map and the satellite view.
- 3. The next feature one would notice about the map is the "CALU" logo's placed on the map.

 These icons are used to represent the buildings in which the user has classes in throughout the week. To see what classes and at what times the user has class simply click on the correct logo.
- 4. After clicking on the logo, *the* textbox will open up with the course time information. To close this textbox simply click on the "x" at the top right corner of the textbox.



Figure 10.2- View Map

5. Finally, if the user scrolls down to the bottom of the webpage they can view their schedule along with information regarding the distance they must travel in-between classes on any given day.

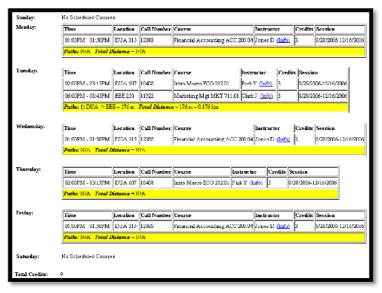


Figure 10.3-View Map

Administrators

Admin Tools

The Admin Tools are available if an account is registered as an administrator. These tools provide the ability to perform tasks that could affect the rest of the users of Virtual Scheduler. An administrator is able to reset passwords, change the role of accounts, and add security questions.

Resetting Passwords

To reset a password, go to Options – User Management. Next choose "Change Password" from the Action Type drop down list, enter the username of the account which is going to be reset, and then the new password.

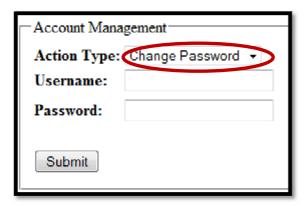


Figure 11- Reset Tools

Changing Account Types

To change the account type of a specific user, go to Options – User Management. Next choose "Change Role" from the Action Type drop down list, enter the username and select the new account type from the Role drop down list.

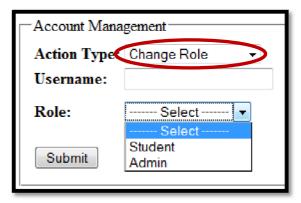


Figure 12 - Change Tools

Add Security Questions

To add a security question for availability during registration, go to Options – Add Security Questions. Next enter the new question in the Add Question field and click the submit button.

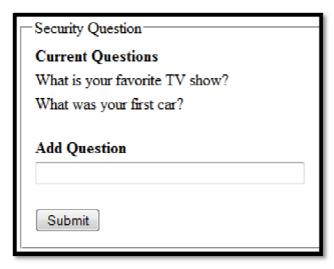


Figure 13 - Security

Student Polling

Ballots

As an administrator, the user has the option of creating a ballot representing the question they would like the user to answer. When creating the ballot, the user must input the question, type of question, and the corresponding answers.

Viewing Ballots

The administrator has the ability to see all current ballots. Select view ballots to see ballots to see: identifier, if it's active, question, ballot type, choices/results, and participants thus far.

Identifier	Is Active	Question	Ballot Type	Choices/Results	Participants
3	true	Will you take the course CSC 304 - COBOL if it is offered?	Boolean-Choice	Yes / 1	mce7859
				No / 0	
4	true	If offered, will you take Visual Basic?	Boolean-Choice	Yes / 0	
				No / 0	

Figure 12-Viewing Ballot

Adding Ballots

The administrator has the option to add a ballot to the student polling.

1. The administrator will need to type in the question that they would like to ask in the Question box.



Figure 13.1- Adding Ballot

2. Next, the administrator will need to select which type of ballot they would like to do. The choices include: General, single choice, or Boolean choice.

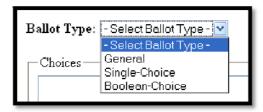


Figure 13.2- Adding Ballot

- 3. Next, the administrator will need to input the choices he or she would like the user to choose from. This is only necessary if the general ballot type was selected.
- 4. Next, the administrator has to choose the activity of the ballot. Choosing False sets the ballot to inactive. Selecting true sets the ballot to active.

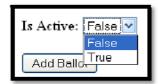


Figure 13.3- Adding Ballot

5. Finally, select the "Add Ballot" button to submit the ballot.

Modifying Ballots

The administrator has the option of modifying the current ballots.

1. Select the ballot to be modified.



Figure 14.1-Modifying Ballot

- 2. Click the "Select Ballot" button.
- 3. Modify the content that needs to be changed.

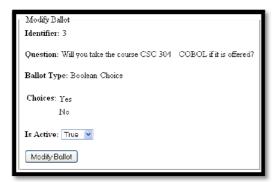


Figure 14.2-Modifying Ballot

Remove Ballots

The administrator has the option of removing a ballot when it is no longer wanted or needed. This is done by selecting the "Remove Ballot" button located in the Remove Ballot section of Polling.

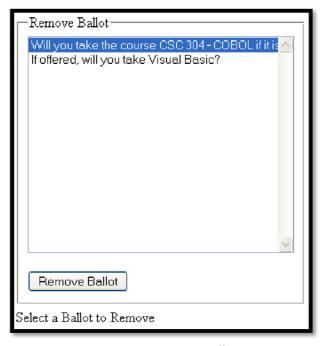


Figure 15-Remove Ballot

Frequently Asked Questions

Q: What are the support browsers?

A: Currently Firefox 3 is the only fully supported browser. Virtual Scheduler may not function as expected in other browsers.

Q: Do I have to submit my person information such as grades and social security number to degree audit?

A: No personal information is needed in order to use or register for Virtual Scheduler.

Q: What should I do if I forget my password?

A: The "Forgot Your Password?" link will allow you to request your password to be sent to your email account.

Q: What should I do if I am unable to request my password because I forgot my security question and answer?

A: If you forget your security question and answer, you may ask an advisor to reset your password.

Q: Do I have to install any plug-ins for view maps to work?

A: No, view maps does not need any extra plug-in installed for it to work.

Q: If I select a term after I generate a schedule will I lose my information store?

A: Yes, if a term is selected after it has already been chosen it will reset the term and all of the "Smart Scheduler's" functionality.

Q: Can I go back to previous steps without losing my information?

A: Yes, as long as you save your information before going back.

Q: Does Virtual Scheduler store any private information that I supply them?

A: No personal information is stored by Virtual Scheduler.