**IT497 Group Assignment#1**

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This report discusses the use of Google Drive, Dropbox, Ubuntu One, Evernote and GitHub as tools to aid in course assignment management and collaboration.

First tool is Google Drive. It is a sharing tool based on concept of virtualization. Google drive allows synchronization and sharing of files which are originally stored at some remote server, this makes user data accessible from anywhere. It removes dependency from hardware devices and burden of managing them, this makes Google drive perfect tool for working on any individual project or assignment. Google drive initially offers free space of 5 GB to its users and can be extended up to 16 TB for monthly fee.

Students can use it for individual assignments and projects. It provides reliable storage and easy access from any device that is connected to the Internet. It also provides version control which can be very helpful when working on assignments.

It is a very useful tool for team projects. Once a file is shared, all the users can edit the file at the same time. In order to synchronize files between client and the remote server, one can download Google drive client software on the client machine and the software will update data in the main storage space continuously. By doing so, updates will reflect changes to all users in real time. Google offers this Google drive client software for variety of platforms ranging from Windows XP to Android and iOS. This makes Google drive compatible and as a platform independent this can be a very useful feature while working on a group or team project. It also offers version control.

Google drive supports viewing and editing of HTML, CSS, PHP, C, and CPP codes which makes it an effective tool for teaching web-designing and programming languages. It restores the format of the stored files without converting them for storage thus; when these files are downloaded they can be compiled or executed directly. We are currently utilizing Google drive in our course work of IT-353.05. It is a very good collaborative tool and is very flexible.

Google drive can be integrated with other software like Google docs and office suite which not only provide an interactive user interface but it also gives a collaborative and productive means of managing spreadsheets, documents and presentations. This can be very useful while teaching a non-technical course like- Research Methodology where lot of presentation, data analysis and intuitive work is required.

Second tool is Dropbox. It is a remote storage tool that can be accessed from anywhere - home computer using desktop client software, Dropbox website or a smartphone application. It is really convenient and free. Users get 2.5 GB of initial storage space. The free account can be upgraded to have more space for a reasonable amount of money monthly or create a business account for a monthly rate that can be used by minimum of five users with unlimited storage space. Desktop application is easy to use as all one needs to do is download the software from Dropbox website. Desktop Application is been designed as a windows folder format that everyone is familiar with.

How does Dropbox help with individual assignment or project? With Dropbox, books, videos, notes, audio, text files, documents, pictures, music, programming files or any kind of digital files can be stored in one location, and later accessed from anywhere that the internet is available. One can also stream music/audio, and video files at any time. Dropbox continuously synchs what’s been done on one device with the rest of electronic devices that run Dropbox application. Files can be accessed offline but it will be the version that Dropbox application last synched. Dropbox is convenient because it eliminates the need for storage devices that are easy to lose, heavy to carry, or could get corrupted. Dropbox provides security as well; no one can access the material unless given permission to do so, and the files on the account are password protected. For instance, I can work on this paper from home, save it and go to school, login to Dropbox and access the latest version of the paper and continue editing it thus saving time.

Dropbox can also be used for collaboration. Files can be shared by sending an email with a link to all team members. But in order for the members to access it they need to have Dropbox account. It eliminates the need for emails with attachments. One can use the free version of Dropbox for group work or the business version, depending on how important the project is, and who the project is for. The business version comes with file recovery feature which can be very useful in case of accidental deletions. However, Dropbox has limited version control for simultaneous edits and that is the downside of the tool when collaborating.

Dropbox is helpful with non-programming course as explained above but not much with programming course. It does not have the capability to merge or fork programs, it commits the changes right away, it does not let one assign specific task to team members in the group, and one can’t integrate it with any programming software. Despite the fact that it’s nothing more than a storage tool, it’s easy, convenient, secure and reliable.

Third tool is Ubuntu One. It is a cloud service used to store and synchronize data over various devices. Most of the services offered by Ubuntu One are very similar to other cloud services like Google Drive, and Dropbox. Streaming of audio files from the cloud to mobile devices and large free storage space are some of its noticeable features.

This tool can be used effectively for individual assignments where the stored files can be accessed from anywhere with the help of internet connection. It also allows for sharing of files or folders by entering email addresses and selecting whether the user can make modifications. This feature makes it a good choice for group assignments. However, it seems to be of limited use due to the lack of version control feature to keep track of the changes made to the documents. Also, it has no mechanism to check-in a file to a particular member of a group in order to avoid any inconsistency when more than one member try’s to modify the same document simultaneously.

For a programming course, Ubuntu one has limited purpose when compared to other cloud applications available in the market. For example, In Google Drive online editing of documents like .html, .php etc., is possible whereas the usage of Ubuntu One is restricted only to file sharing since it doesn’t support online viewing or editing and so the native system must have features to view or edit these files.

For a non-programming course, if sharing of documents is the only criteria then Ubuntu One comes handy. But for course like Research and Methodology where usage of version control is desirable, Ubuntu One is certainly on its downside.

Fourth is Evernote. Evernote is an application used to share data and to store data on the web. It is a note making tool. A note can be a text file, audio file, video clip or handwritten ink note. It provides synchronization services. Evernote supports most operating systems such as Microsoft windows, IOS, Blackberry, Android, etc. Evernote can also be used on the phone which makes it very handy. This application is very useful for students in organizing and managing all the course material.

Evernote can be useful in students’ individual as well as group projects or assignments. In individual projects, assignments, and research, it might be used to store the work or research and share it with the professor or advisor who can then review and edit the work as necessary. This also eliminates the need for printing. Scheduling team meetings can be a challenge, but with Evernote, the team can use a shared notebook which can be accessed and updated by all group members.

Evernote can be used for programming courses because the code can be stored on the cloud network, and students can get help from their professor online instead of visiting them in their office. Professors can also make suggestions to the class. It can’t be integrated into programming software but one can still use the merge feature to merge the code after assigning work to all the group members.

Evernote can also be used for non-programming courses as we can make handwritten notes, audio notes, video notes on Evernote and if something is lost on one’s personal device, it is still available on Evernote server.

Finally, GitHub is a web based hosting service that uses GitHub, as version control software. Although used predominantly by programmers to host their code and/or work on open source projects in a collaborative environment, it can also be used for non- programming purposes. It can be used to manage individual coursework much the same way Google Drive and Dropbox are used. Students can store text based files in addition to software code. It provides additional backup and can be accessed from multiple devices. The need for powerful version control is perhaps the most important reason to use this software. If additional backup is the only criteria and if version control is not critical, applications like Dropbox and google drive are probably more convenient.

Code or text based files are stored in “repositories” or folders. To make use of its collaborative capabilities, everyone on the team needs a GitHub account as well as access to the shared repository. They can then create copies of the project by “branching” or “forking”, edit and propose changes which can then be “merged” with the original file. For non-programming group projects that do not require extensive version control, Google drive and Dropbox are probably more convenient.

GitHub can be effectively used for programming courses. The instructor could post code and the students could “branch” or “fork” and create another version of an existing project which they can then work off of. . They can change the code and revert back to previous version if necessary. Powerful versioning control ensures they don’t lose any of their previous edits. They can also get feedback from the instructor as well as their peers. They can always make their repositories private to comply with plagiarism rules while working on individual assignments. Beginner programming courses should use GitHub so that the students can become skilled by the time they get to advanced courses.

Its use for non-programming course may be limited by the fact that not all students are familiar with the application or were not exposed to it as part of their curriculum. It does not seem very user friendly and students that do not have a programming background may find it too complex and frustrating. Another disadvantage is the programming jargon which people with no programming knowledge may find intimidating. However, professors can expose the students to the application by requiring that at least one team assignment be completed using GitHub.

Out of the five applications, everyone on the group had used Dropbox, Ubuntu One and Google drive. We had to try out and familiarize ourselves with GitHub and Evernote in order to come up with content for this assignment. Although these applications seem to be comparable in their utility especially for backup and file sharing, they also have their specific strengths. Ultimately, the nature of the course and the specific assignment will probably determine which application is chosen.