**DEVELOPMENT GUIDELINES AND INSTRUCTIONS**

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# DEVELOPMENT ENVIRONMENT

## 1.1 Assembla.com Team Collaboration Space

Assembla.com is a website offering an integrated solution for online team collaboration. While various paid plans are available, there is a free public plan that provides enough resources for the scope of this project.

### 1.1.1 Team Collaboration

To manage a project, the team leader can create a new team collaboration space and invite each member to join it. This requires that each member of the team creates an account on assembla.com. To simplify things, we have used our Concordia netnames as account names. Through team collaboration space, members easily reach the rest of the team through a messaging system and a chat. There is also a place where you can see the latest events.

### 1.1.2 Git Distributed Version Control System

One of the main reasons for using assembla.com’s service is because they provide free version control system hosting. Version control can easily be added to the team collaboration space by the administrator with a one-click installation. Assembla.com provides multiple version control systems such as subversion, mercurial and git. While subversion is a popular one, the new trend is to move to git, a more recent and efficient system original created by Linus Torvalds and now in use for the Linux kernel and a lot of important open source projects. Having used both subversion and git, I voted in favor of git because it is faster and more efficient than subversion, especially in regards to branching.

### 1.2.3 Webhook

Another nice feature that made assembla.com a good choice for hosting our git repository is webhooks. The webhook is a simple HTTP POST that is sent automatically to notify of an event. As we wanted to host our web application on a separate server, we are using it to trigger an update of the application on the remote server whenever someone commits changes on the git repository. Without webhooks, this would have to be done by constantly polling the git server for updates, which is a quite inefficient way of doing things.

## 1.2 OpenSolaris Server

OpenSolaris is a free open source operating system based on Sun’s Solaris. It is one of the variants of UNIX based on SVR4. As Sun mostly ships Solaris with their selection of high performance servers of all types, OpenSolaris is a good choice for making our web server. For this project, a dedicated server with a P4 3.0GHz and 1 GB of RAM is used to host our web application in development.

### 1.2.1 Web Stack (AMP)

OpenSolaris’ web stack, called the “AMP” stack (stands for Apache, MySQL and PHP), provides an easy way to set up the various programs needed to host our web application. This is perfect for us as this is exactly what we need.

### 1.2.2 Development Web Stack (AMP-dev)

A web development stack is also available, providing a full set of tools to develop web applications. While it is not really an option for team members to use it (nobody uses OpenSolaris as their desktop OS) it comes with documentation and instructions on how to use the tools it installs. This is great as it provided a lot of ideas on what to use, such as the NetBeans IDE.

### 1.2.3 Hostname

The server is connected to the internet with a residential videotron connection. As videotron is nice enough the usual HTTP port 80, we have to use the alternative port 8080. Also, videotron does not provide a static IP, so we registered a free hostname from dyndns.org that can be automatically updated to point to the current IP address of the server using a client program. Our website can be accessed at http://team7.ath.cx:8080/

### 1.2.4 Individual Test Space

As we are many people working on the same website, a separate space is provided to each member so that they can do their own testing without breaking other member’s work. Each member has an account on the server with a username corresponding to their Concordia netname (again, just to keep it simple). Apache has been configured to enable the user directory features, which gives each member a web folder accessible at http://team7.ath.cx:8080/~username/. Each user’s home folder contains a public\_html folder where they can put their files for their personal web space.