**Student Application**

**About me**

* **Full Name**
  + Ahmad Y Javaid
* **University / current enrollment**
  + University of Toledo
* **Short bio / overview of my background**
  + 2011 - Computer Engineering Graduate Student at University of Toledo.
  + 2011-2008 – Worked in Industry, 2 years as Developer-cum-Project Coordinator and System manager, and 1 year as a Mainframe Application Developer.
  + 2008 - Received undergraduate degree in Computer Engineering from Aligarh Muslim University, India.
  + 2008-2005 - Has worked in the field of Face Recognition, Mobile Computing and Network Management and published 1 National, 5 International (3 IEEE + 2 ACM) and 1 journal publications during undergraduate studies. Received several scholarships and awards too during this period.
* **Subscribe to the mailing list of the appropriate group and introduce yourself**
  + Done. Contacted John Melton, mentor for my project, and have been discussing my project idea with him.
* **Tell us your IRC nick with which you will use the group's IRC channel**
  + Javaid
* **Recommendation letter from university authority or professor including their contact details** (in english).
  + Dr. Weiqing Sun
  + Assistant Professor, Computer Science and Engineering Technology
  + Office Phone: 419-530-3273
  + Fax: 419-530-3068
  + Email – Weiqing.sun<at>utoledo.edu, wsun<at>eng.utoledo.edu
  + Recommendation - *I will add this section as soon as I receive the recommendation, probably by today evening.*

**My Coding Skills**

* **What platform do you use to code? Hardware specifications and operating system.**
  + Windows
    - Eclipse for JAVA
    - Visual Studio for C++/C/VB, etc.
  + Linux
    - Gedit for Tcl/Tk, JAVA and C/C++.
  + Hardware
    - 2nd generation quad core processor
    - 4 GB RAM minimum
* **Did you ever code in C or C++/Perl/python/..., yes/no? what is your experience?**
  + C - more than 5 years of experience (college + industry)
  + C++ - 3 years of experience (industry)
  + JAVA - more than 3 years of experience (college + industry)
  + COBOL – 1 year of experience (industry)
* **If you apply for a project on our ideas list, have you experience in the areas listed under "Desired knowledge"?**
  + I am already working in the field of Cyber Security with concentration on Attack and Threat Analysis of a system.

**Set yourself up**

* **Set up your platform to build a Bazaar/GIT/Subversion snapshot of the current state of the project you are interested in.**
  + Done. Downloaded the svn version of the code and studied the application structure and working. Have used the AppSensorDemo application as well as my own web application using various detection points and checked the “TrendMonitoring” module specifically as I plan to work on the same.
* **If you need help, ask on the mailing list of the appropriate group, or in the IRC.**
  + Done and thankfully, received a lot of help.
* **Report success on the mailing list or IRC.**
  + Done successfully and received feedback.

**You and Us**

* **Were you involved in development in the project's group in the past? What was your contribution?**
  + I have not been involved in the group until now.
* **Were you involved in other OpenSource development projects in the past? which, when and in what role?**
  + This is my first attempt in getting involved in an Open Source project.
* **Why have you chosen your development idea and what do you expect from your implementation?**
  + I am working in the Security field and have been working on a similar problem. I feel that the Project as well as I can learn a lot through working together.
  + I expect that my implementation could be a major component of the project and could also be used as a component in other modules as well. Being a Trend Monitoring tool, it can be modified easily for use in other modules.

**My Project**

* **What do you want to achieve?**
  + I want to enhance the “Trend Monitoring” module which is not fully developed and there is a lot of scope for enhancement in this module.
  + More specifically, I want to implement Trend Monitoring for two kinds of Exceptions – ***User Trend Exceptions*** and ***System Trend Exceptions***. Each of these Exception classes has four and three detection points defined in the Project respectively.
  + Perform Testing and benchmark the module using NIST-Test Suite #69: Juliet Test Suite for Java (http://samate.nist.gov/SRD/view.php?tsID=69)
    - Contains 14184 test cases for 106 different CWEs, i.e., weaknesses/vulnerabilities.
    - Too many test cases and testing for each CWE is not necessary, only required test cases from implemented CWEs can be used from this repository for benchmarking.
* **If you have chosen an idea from our list, why did you choose this specific idea?**
  + Yes, I have selected the project idea from the ideas page on the GSoC website.
  + Trend monitoring serves as a very important part of any Intrusion Detection System, not just to view the trend but to analyze possible attempts of attack as certain kind of seemingly “non-malicious” or “erroneous” requests may actually be tools of vulnerability detection with respect to an attacker. I looked at the Trend monitoring module as well and it seems it needs a lot of enhancement in order to provide site administrator with a comprehensive report of failed and successful attacks, possible network vulnerability detection attempts, etc.
  + Further, I am working already in similar kind of project (Threat Analysis and Modeling) as part of my graduate thesis work and I think working on this specific project is going to be beneficial for me as well as the AppSensor project.
* **If you are proposing a project of your own, what is unique about it?**
  + Not applicable
* **What makes you suited to carry the project?**
  + I am a Cyber Security Graduate Student willing to work during summers for almost 20 hours a week (or more depending upon the requirement), with college as well as industrial experience of JAVA and have worked on REAL organizational web based application security on Windows platform. All of this and my interest in the field of security will possibly make me suited for this project.
* **How much time do you plan to invest in the project before, during and after the Summer of Code?**
  + ***Initially***, I have been spending almost 3-5 hours every day to study the application in order to develop a good understanding of the Project and come up with a substantial proposal.
  + ***During the waiting period*** (while selection is being made), if mentors require, I can prove my worth by developing the requirements specification and design document in order to save time for development and improvement during the actual GSoC period OR by doing some tasks given by the mentors, like some kind of bug fixing or sample coding, etc. It should be noted that during this period it might not be possible for me to spend more than 2-3 hours every day on the project as it is the end of the spring semester (until first week of May).
  + ***During the GSoC period*** (including second two weeks of May), I would spend somewhere around 20 hours a week on the project. This time is adjustable based on the project requirement. If mentor(s) feel that more time is required or project targets are not met, this time can be sure increased.
  + ***After the GSoC project is finished***, I wish to continue being part of this project. Since, my interest lies in the same field, i.e., security, I would definitely like to contribute more by developing some more modules. More specifically, I want to code the whole Trend Monitoring module for all kinds of detection point classes over a period of 9-12 months.
* **Please provide a schedule of how this time will be spent on subtasks of the project. While this is only preliminary, you will be required to provide a detailed plan latest at the beginning of GSoC and during the project you will issue weekly progress reports against that plan.**

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| From Date | To Date | Task |
| April 7, 2012 | April 20, 2012 | * ***Detailed Stud***y of modules of AppSensor and its working * Work on ***Requirements Specification Document*** |
| April 20, 2012 | April 30,2012 | * Study of other similar vulnerability analysis tools and their monitoring modules to get better understanding of the problem and its solution * Requirements Specification under review * Work on ***Design Specification Document*** * Improvement of Requirements Specification Document |
| May 1, 2012 | May 5, 2012 | * ***Break for my finals*** * Design Document Review |
| May 6, 2012 | May 15, 2012 | * Discussion with mentors to fill missing gaps in understanding of AppSensor * ***Improve the Design Specification Document*** |
| May 16, 2012 | June 15, 2012 | * Work on ***implementation phase – I (UTE implementation)*** * Coding following the AppSensor coding and commenting convention * Discussion with mentors about progress (frequency to be decided) * Includes development of “new” classes for the trend monitoring, logging, analysis and report generation * Include changes in the TrendEvent, TrendLogger and other dependent classes |
| June 16, 2012 | July 15, 2012 | * Work on ***implementation phase – II (STE implementation)*** * Coding following the AppSensor coding and commenting convention * Discussion with mentors about progress (frequency to be decided) * Includes development of “new” classes for the trend monitoring, logging, analysis and report generation * Include changes in the TrendEvent, TrendLogger and other dependent classes |
| July 16, 2012 | August 15, 2012 | * Testing of the modules using test web application and detection points * Changes in the documentation, if required |
| August 15, 2012 | August 20, 2012 | * Final documented Code Delivery * Documentation finalization and delivery * Final Submission of all related documents to GSoC |

Please note that this is a tentative project timeline, detailed project timeline can later be agreed upon in sync with the mentors in the first week of GSoC project initiation period.