

CENG 492 PROGRESS REPORT – 2

Group Name: iTeam4

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Project Name: Online National Election Voting System

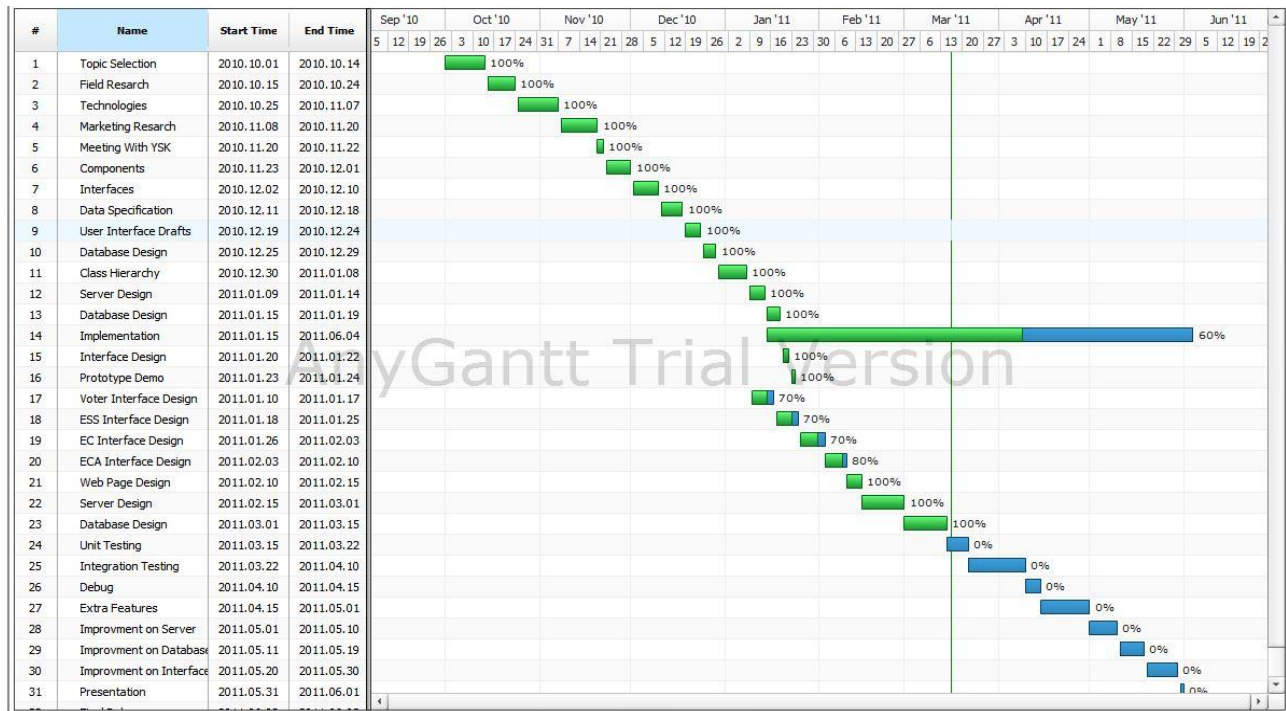
In this document the weekly activities done by the iTeam4 for the senior project are described and the progress of the project is stated.

Mehmet Barış Özkan

Main mission of this week was preparing the system user interfaces for the normal interaction mode and constructing the living schedule of the project.

We have prepared the new voter registration pages and candidate main pages for the first term demonstration. We prepared the voter main page for the normal interaction mode. In this page voters see the lists of the candidates from his election region and the links of the candidates' page. In this page there will be another part which the voters see the past years' election results but we have not implemented it yet.

The other task of the week was preparing the living schedule. In order to set the schedule free Anygantt tool was used ^[1]. In order to gain dynamism the schedule an xml file is prepared and the values of the progresses are also kept on this file. We will put this living schedule html file to our web site this week.



(Living Schedule of iTeam4)

Hassan Salehe Matar

- Database Handling Requests and Capacity

We concentrated on finding out how DB2 handles requests from the clients and figure out how we can utilize this property in our system. When a request from a client fired to the database, the database creates a separate thread to serve that request. Therefore, simultaneous requests from different clients can be responded concurrently. The number of maximum threads that can be created by BD2 can be set by the system administrator ^[2]. By default 2000 threads can be created and run concurrently complying with the minimum requirements of DB2 system. However, we could not find the exact maximum number of threads that can be created and run at the same time. We tried to test the performance of DB2 database by using a simulator called Jmeter ^[3] we found that when number of clients increases the response time decreases. When we tried with 30,000 clients (threads were created by Jmeter) trying to access the database simultaneously; 15,000 clients were served within 2 seconds, however the system stuck immediately. We could not prove the cause of the problem, however the great problem might be lack of memory or deadlocks happened.

- Flow of Data: Technologies to Be Used

In this part we focused on how data in and out of the database (DB2) could be secured. First off, DB2 itself has a built-in functions for encryption ^[4]. These functions can be used to encrypt data within the database and the same data can be transferred among remote databases without harm. However, when the database interacts with other systems like application servers, common standards like SSL are used. DB2 has no built in SSL; however it can use the installed SSL encryption algorithm of the host operation system or server to encrypt the data before sending to the other side ^[5].

- Research: Connection for Every Transaction against common Connection for all transactions

We could not find appropriate information for this. Research is still going on.

Emilbek Joldosev

This week we started implementing the Election part of our project. But there were many obstacles that avoided us from proceeding faster. These are the new technologies, tools and development patterns. When I read the 'Rational Application Developer for WebSphere Software V8 Programming

Guide' [6], I understood that in the beginning of our implementation we should learn how to best, effectively, easily develop web application using J2EE technologies. The book suggests that using MVC approach is the best choice for bigger applications and it suggests the book called 'Core J2EE PATTERNS Best Practices and Design Strategies' [7].

MVC (Model-View-Controller) approach is a pattern which separates Presentation tier (View) and Business tier (Model) from each other. The controller component is used to make communication between these two tiers.

We have read these suggestions and implemented some part of our project, specifically Login part. Tomorrow we will show the completed part.

Hüseyin Lutin

REFERENCES

[1] <http://www.anychart.com/products/anygantt/overview/>

[2]

http://publib.boulder.ibm.com/infocenter/dzichelp/v2r2/index.jsp?topic=/com.ibm.db29.doc.perf/db2z_setthreadlimits.htm

[3] <http://www.ibm.com/developerworks/data/library/techarticle/0303bhogal/0303bhogal.html>

[4] <http://www.ibm.com/developerworks/data/library/techarticle/benfield/0108benfield.html>

[5]

http://publib.boulder.ibm.com/infocenter/dzichelp/v2r2/topic/com.ibm.db29.doc.perf/db2z_setthreadlimits.htm

[6] <http://www.redbooks.ibm.com/redpieces/abstracts/sg247835.html?Open>

[7] <http://www.corej2eepatterns.com/>