Korea Advanced Institute of Science and Technology

Department of Computer Science

REPORT on Increasing Qualification

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Ferghana branch

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1. Acknowledgement

We would like to express our special thanks to Head of Computer Science department of KAIST, Prof. Doohwan Bae and Administration team members to support us during our training at KAIST. Also special acknowledgement Ms.Eun-Young Park for her help for everything we asked during we are in the department.

We are grateful to our supervisor prof. Soon Joo Hyun for contributing many suggestions and useful advices. Also special acknowledgement for professors Sung-eui Yoon and SukYoung Ryu which are conducted subjects and taught new knowledge and skills.

Our appreciation also goes to our administration. We feel honored to have been given the opportunity to study in KAIST, which is supplied by rector of TUIT, Mr. Mukhitdinov Kh. A and Head of International Department Dr. Sabirjan Yusupov.

Finally, we would like to thank to International Scholar and Student Services organization of KAIST to invite us various performances.

2. Introduction/ Background

The importance of developing Information and Communication Technologies(ICTs) and using ICTs for development of the country reached the momentum and this issue became a "National priority" by special decree of the President of the Republic of Uzbekistan PP-1942 from 26.03.2013 and the action plan the Cabinet of Ministers of 08.08.2013. № 08/1-350 - "On measures for further improvement of the personnel training system in the field of information and communication technologies".

To support this initiative and to maintain valuable knowledge and experience of teachers of Tashkent University of Information Technologies are being sent to South Korea to training programs to qualification. This programme will help to ensure quality, in line with international standards, training and professional development of highly qualified specialists in the field of information and communication technologies.

3. Aims and Objectives of the training

The aim of the training course programme to strengthen the knowledge, teaching skills and learn research activities. Main Objectives of Training Programm are as follows:

- To study the best practices of universities, research centers and the Republic of Korea in the field of information and communication technologies
- To study the mechanism of effective implementation of ICT in the educational process
- Detailed study and analyze new innovative programs in education of priority areas.
- To study the culture of the country, its features, national values and principles of the developed democratic civil society.
- study appointed subjects in the related department;
- study and comparative analyze of subjects' catalogs, curriculums, syllabus and education standards in the related department;

4. Activities and earnings

I participated three courses of Computer Science department of KAIST.

1) Introduction to Database. Teacher: prof. Hyun Soon.

- From the first day, Professor supports us and solved any problems, in lessons especially stands out with relationship to class, conducting lesson and free to talk with students.
- The subject is called Introduction to Database, but in lessons professor gave not only introduction, he explain us how to create, use, rules of creating database and implement in practice.
- Exactingness.

Students must be ready for each lesson, because professor gives homework or reading assignments in ending lesson and in the next lesson he takes quiz. In quiz has one or

two questions but professor can know how to student think about this theme. Questions are made with the key point of the lesson. Each assessment summarizes and applies an overall assessment. Another advantages of quiz is that students are not late for the lesson. Because, student knows, in the beginning of the lesson professor takes quiz, if student late to quiz, he cannot collect mark.

- Laboratories.

Usually laboratories not provided every week. In work with database, we participated laboratories in theme SQL(Structured Query Language). We saw in practice use SQL, SQL rules, creating, updating, selecting, deleting and other functions. For this special thank for teacher assistants. Assistants prepared material for laboratory. The materials are grateful, because assistants indicated every function step by step. And after new function they gave example and gave task for individual work. I think it improves students' skill on working with database system. In practice students must write SQL code for which he thinks.

- Literature .

For subject selected textbook Th. Connolly, C.Begg "Database systems: a practical approach to design, implementation and Management ". The book has in library of university for the selling and using. Still there is an electronic version of the book and students can use this. Importantly, themes in the book 100 percent fit that studied in the classroom. If student cannot understand any concept, he can read in home and improve own notions.

- Why I chose this subject?

Nowadays in our country there is a demand for convenient, fast, secure information systems. For creating these systems programmer must know good knowledge about database management. If the database is not a repetition of data and other issues, the program that created the basis of this database will work without conflicts. I introduced different ways creating and using database. I understood relation model, relation algebra, SQL, DDL, DML, normalization and other concepts about database. I hope the skills help me for creating and implementing different information system.

- Term project.

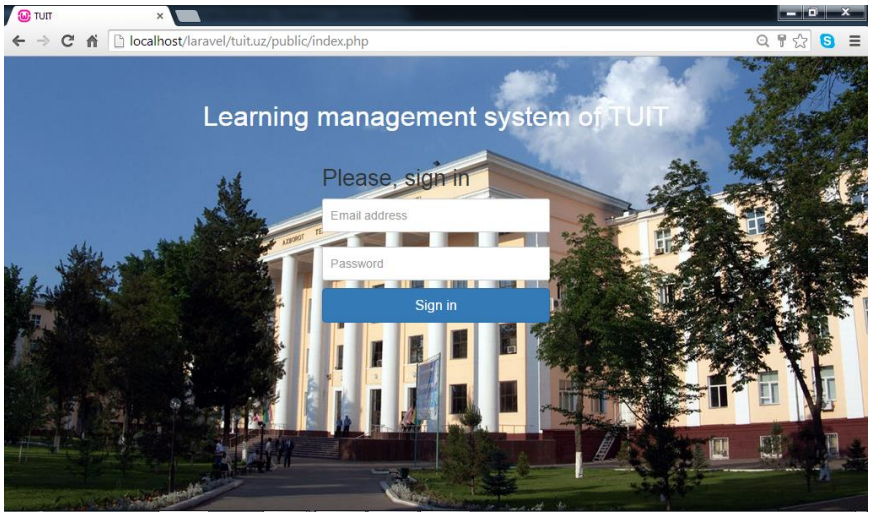
Very important part of subject is term project. Functions of term project are improving students' skills and knowledge. In term project students must create real automatic system for various direction. Students divided little groups. Every group consists of 3-4 students.

This is a good opportunity for students to familiarity and share own knowledge with friends. Teacher assistants check process of project and give advises for group. First, assistants ask relation model for system, because relation model is very important part of database. If in model has any disadvantage, assistants help and correct this problem. Our group created enrollment system for university. We divided project to 3 part: for administrator, for teacher, for students. We did many functions for each panel. For this project we create database in MYSQL, because MYSQL can work with many users at the same time. We created this system in web environment. For this we used WAMP server. W-windows, A-Apache, M-Mysql, P-Php. For programming we used php. Why we chose Php? Our system must service for many users. Therefore we used client - server technology. Clients sent query to server and will get answer.

2) Programming Language. Prof. SukYoung Ryu

In this subject not chosen any programming environment. The subject student can learn programming concepts, rules, implement programs. Prof. is stand with very high knowledge, skill.

- Work with students. In professor's materials has quizzes and answers by step. Each student in the professor attention, she can at any time be able to address a question. This is a great work, but it will give good effect.



Pic.1. Home page Learning management system of TUIT

- Study plan.

Responsible professor can know with the curriculum. The curriculum plays a very major role in education. In this lectures students can know all themes of course and dates, holidays. It is help students make plans for study course.

- Noah board.

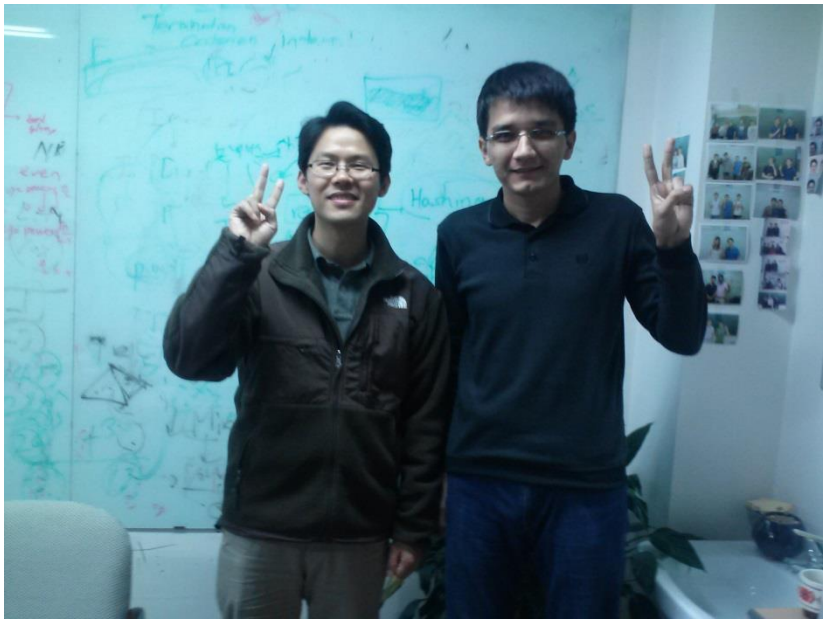
In addition KLMS, professor manages own noah board. This board will be declared the questions are given from students, answers the questions, grades students, programming codes, homework and other necessary materials to course.

- We know working with programming languages require a lot of effort, knowing that at any time the professor responds to the questions given from students.

3) Data structure prof. Sung-eui Yoon

In this course I got notions of Data Structures and algorithms. I noticed many advantages of professor in lesson:

Before each lesson professor offers 4 students for review and preview. Students talk about what they learned last lesson, and that will learn today. This requires each student must be state of readiness. After review/preview professor takes photo together students, this improves the relationship among them. With this professor to prepare the audience for the lesson.



Pic.2. With prof. Sung-eui Yoon

Professor's knowledge and experience in high-level. Professor made presentation with good content for each lesson. In materials first professor gave terminology and theory, after that he worked with examples and games.

Algorithms are explained by a pseudo code, it is good for students who do not have the skills yet to work with programming languages.

In addition professor could use web resources. For example, in lesson professor explained to us sophisticated algorithms with animation on the site www.visual-algo.com.

Professor combined structures with each other and show advantages and disadvantages of structures.

Programming assignment.

One of the requirements of the course, this program assignment. Every program assignment is directed one of the structure. Teacher assistant give unfinished source of code and student must finish this code. This method is easy to checking answers. Teacher assistants play very big role in this case. They are prepare assignment and explain task, help to students for solve this assignment.

4. Seminars of Computer science.

One of the good side of the department Computer science organizes every week at least one seminar with priority professors from all over the world. I participated in these seminars and I got a lot of information and I found out many information communication problems which are being solved by these professors.

1. Lejla Batina, Radboud University Nijmegen. Machine learning and evolutionary computation in side-channel cryptanalysis.

2. Keith Ross, NYU Shanghai. Mining Online Social Networks: Opportunities and Privacy Issues.

Pic 3. Colloquium. Speaker: Julian Dolby

3. Julian Dolby, IBM Watson Research. To Dream the Impossible Dream: Toward Security Analysis for JavaScript.

4. Gehrke, Cornell University Johannes. Coordination for Big Data.

5. Wook-Shin Han, POSTECH. Big Graph Data Processing.

6. Sungjin Im, University of California, Merced. Competitive Scheduling from Competitive Equilibria.

In addition we participated events of provided by KAIST ISSS, KAIST One and KI House. They are:

1) Chuseok holiday. September 10th.
2) KAIST One Ruanda(October 2nd)
3) KAIST One Germany(November 27th)
4) International food festival (October 31th)
5) Social gathering
6) Year-end party (December 4th)

In this events we introduced with culture, art, sport of many countries, listened music, found new friends, played games with international students,

Pic.4. KAIST ONE, Germany

Pic.5. Year-end party

ate different dishes in general provided time very happy. These events helped for all students for gather strength again and good study. The organizers of the well-tried and could do us a good evening. For this we are very grateful.

5. Methodology of the Implementation of Training benefits to TUIT

I introduced in KAIST with high-level education system and had new knowledge and skills. I hope it is good help to young teacher as I .

1) Organize lessons

It is necessary to pay attention to the presentation course. Student must know themes and dates lessons, grading system, meaning of subject, tasks. Its help to student for learning this course.

2) Lesson's process

I saw in KAIST, relationship between professor and students is very important in education. For improve this relationship professor must has high knowledge and skills, he must pay attention to each student. At the time of planning the course he should arrange topics chain Topics owed by connecting to each other with meaning. And even more advanced topics should be taught with many examples and exactly problems

3) Use students effectively in lessons

Every class has talented students. If professor can direct to true way this talent it will be produce good results. In KAIST students help to teacher to preparing materials to lessons, taking exam, explaining homework and other works. Also they improve own skills.

4) Using web resources for lesson

Of course I also use web resources in my pedagogical activities. in preparing materials for lesson show more tasks and answers to this tasks helps to students improve concepts. In addition may use video tutorials, animations and scientific news.

5) Tasks.

Tasks and homework are very important part in education. I saw students in one course do 5 or 6 homework, but level of difficulty is very high. So I want give tasks more difficulty, because student try to solve and learn this theme better and points for this tasks will improve.

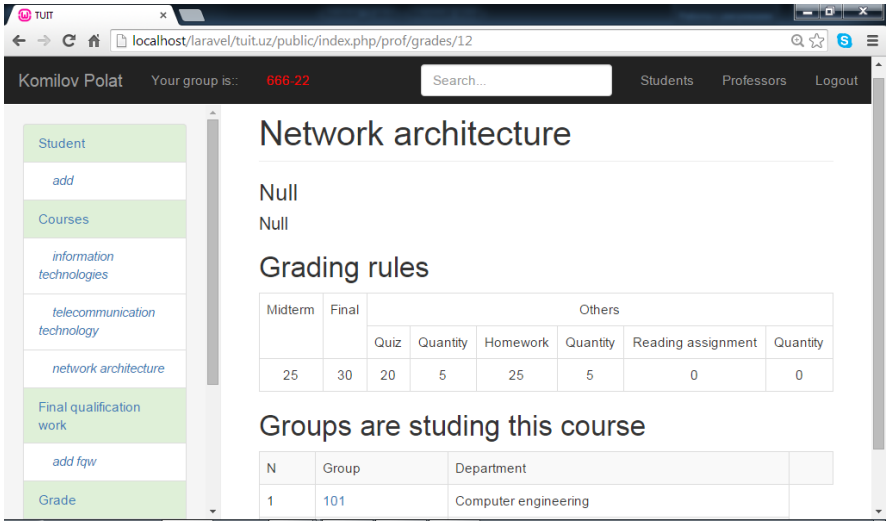
6) Quiz

Students must be ready for each lesson, because professor give homework's or reading assignments in ending lesson and in next lesson he take quiz. In quiz has one or two

questions but professor can know how to student think about this theme. Questions are made with the key point of the lesson. Each assessment summarizes and applies an overall assessment. Another advantages quiz is students are not late for lesson. Because, student knows, in start lesson professor take quiz, if student late to quiz, he cannot collect mark.

7) Learning management system.

KLMS (Kaist learning management system) is help for teachers and students. Because, KLMS gives many opportunities for all. This is a good way to improve the relationship between teacher and student. We are created university enrollment system on course "Introduction to Database" as term project. Created system has many functions for each user. I hope we will correct mistakes and will use the system in our university and this helps us improve quality education.



Pic.6. View of our term project University enrollment system

8) Creating for education system applications which simplify process. The applications must connect all areas. Its automate process such as grading system, curriculum, schedule, calculation and others.

9) Syllabus - an outline and summary of topics to be covered in an education or training course. A syllabus is often either set out by an exam board, or prepared by the professor who supervises or controls the course quality. It may be provided in paper form or online. Syllabus can give notions for students about main of course.

6. Conclusion

This 4 month is very big school in my career. In this time I introduced with very high level education system, learned modern technologies and skills from high level professors. I had notions about world education system.

It is no secret information technology is one of very popular, modern, developed area in every society. At the same time requirement for good specialist is improving. “The National Programme for Training specialist“ that adopted in 1997 August 29, nowadays in stage of quality. Our purpose is Provided informatization of the educational process, full coverage of the continuing education system computer information network, with access to the global information network. For these we learn education system of top universities in world and apply received skills, knowledge to our job place.

It is no secret KAIST is one of top universities of world. We feel honored to have been given the opportunity to study in KAIST. I saw in KAIST very highly paid attention for quality education, level of professors and scientific investigation work. I participated courses of Computer Science department KAIST. Professors are top-level, I learned from professors new pedagogical skills, method of provide lesson, relationship with students and other useful things. I hope use learned skills in my job place and will give to our student new technologies and knowledge.