

MIT-AITI ETHIOPIA PROJECT REPORT
ADDIS ABABA UNIVERSITY
FACULTY OF TECHNOLOGY
SUMMER 2003

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Part I: Program Description

Overview

During the summer of 2003, MIT-AITI sent a team of seven MIT students to Addis Ababa, the capital city of Ethiopia, for a period of six weeks to teach a curriculum of software technology courses to a group of engineering students at the national university. The primary course of study was the Java programming language. Following this, small introductory courses were given about JAVA Server Pages (JSP) and the Linux operating system. The intention was to give the students exposure to modern open-source software used in the technology industry. Included with the technical curriculum, a seminar on entrepreneurship was offered in which the students were taught about business planning and development. This seminar included a series of lectures on business opportunities given by prominent local industrialists and government officials. Overall, the program was a great success, not only teaching the students valuable skills which can be applied in the IT sector, but also giving them ideas and encouragement to go out and build businesses of their own.

Students

The original intention of the program was to offer the course in Java to approximately 80 students at the Addis Ababa University Faculty of Technology, but at the onset of the program the number of students had swelled to around 150. The class roster included senior-level (fourth and fifth year) students, Master's level students from all departments as well as a handful of faculty members. The breakdown of students by department was fairly even, with students from the Civil, Mechanical, Chemical, Electrical and Computer Engineering programs represented in close numbers. The students all had an excellent grounding in engineering fundamentals, but in most cases had rather limited exposure to software. The intention of the JAVA course was to give the students a solid grounding in computer programming fundamentals. Additionally, a small-scale course in AutoCad was given to a group of approximately 20 first-year students and a few instructors at NECAT engineering college.

Curriculum

The JAVA programming class spanned the first four weeks of the program. It was a complete and rigorous course teaching all the fundamentals of the Java programming language. The lectures began by introducing the basic concepts of variables, types, and statements. Following this the lectures moved forward into advanced topics including inheritance and object-oriented programming. Accompanying the lectures was a set of programming exercise sets which were completed by the students in the university computer labs. The format of the course was built to teach students not only the principles of computer programming, but also the design of basic practical applications using Java. The final lectures of the course covered the use of the

Java Swing library in building graphical user interfaces for software as well as the Java IO library for interacting with data files.

Following the Java curriculum, the students were given a short series of lectures about Java Server Pages (JSP). JSP is a common technology built upon the Java programming language which allows for the integration of Java software into web pages on the internet. Using JSP, it is possible to add useful functionality to a web site - many e-commerce companies utilize JSP to perform a variety of complex operations on their sites. This material in this lecture series not only presented the students with technical knowledge, but also included examples of how this technology is applied on the internet to offer goods and services to consumers worldwide.

The final component of the curriculum was a short introduction to the Linux operating system. This lecture series began by outlining the differences between the standard Windows operating system and Linux system, highlighting the benefits and disadvantages of each. The students were presented with all the basic commands needed to interact with Linux, as well as shown demonstrations about its functionality. Giving the students this introduction to Linux was worthwhile, as engineering students and professionals commonly use it to perform scientific and technical computation. Additionally, as Linux is an open-source operating system, it will be more easily accessible to students in Ethiopia than copyrighted software.

Class Structure

The organization of the class was decided on the basis of the available facilities at the university. The faculty provided us with three independent computer labs, each equipped with roughly 25 computers. The majority of the computers were modern Pentium 3 and Pentium 4 systems which were easily capable of running all the Java software which was presented in class. The systems with lesser capability (Pentium and 486 class machines) were equipped to run the Java software by connecting remotely to the high-end machines using a terminal services client. As we had 150 students in the class, it was decided to split the class into two sections, such that one group would attend lecture while the other would be in lab. In this way, during the lab sections, students did not have to share the computers.

The two class periods both ran for three hours. The morning session ran from 9:00-12:00, and the afternoon session ran from 1:30-4:30. Lecture was given to one student group (75 students) in a lecture hall, typically by two teachers, while the students of the other group were distributed amongst the labs to work on exercise sets. The remainder of the teaching staff (5 people) was distributed amongst the labs to help the students with the exercises.

Lectures were presented in the form of PowerPoint slides, using a digital projector to present to the students. Most of the lectures introduced students to new material about Java programming, but every three or four days an "application" lecture was given, presenting the students with some practical application of material learned in the previous few days. In this manner, the students were able to gain a deeper understanding of the theory and application of computer programming.

Students were evaluated on the basis on their performance on the exercise sets as well as two exams. These exams were given during the lecture period, and together

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accounted for 80% of the students' final grade, the remaining 20% accounted for by the exercise sets.

The Java programming lectures ran for a period of 22 days of class, including standard lectures, application lectures, exam review lectures and exams. Following this, the JSP lecture series lasted for 3 days, and the entire Linux presentation was given in a single day. (This material was by far the most straightforward, and thus could be compressed into a single day). On the final day of the program, there was a formal ceremony in which those students who had completed the curriculum at a satisfactory level were presented with certificates of completion.

Part II: Impacts and Benefits

Acquiring programming skills

Most of the students learnt useful programming skills that will help them in their academic lives. Computer and electrical engineering students added Java to their bag of programming languages. For most other students this was the first language they have received intensive instruction in so it formed the basis for them to learn more programming in future.

These skills can also be used to provide employment to the students, for example, by working in newly formed software companies in Ethiopia. Some students are also thinking of offering classes to other people that need Java skills for a fee.

Exposure to a different learning approach

The teaching model we adopted presented the students with a new approach to learning. Most of the students are used to a very curt, formal relationship between faculty and students and we offered them the chance to actively participate in the classes, field questions afterwards and interact with the same instructors in the labs. The AITI program also offered the students a chance to actively implement the theory that they acquired in lectures during the practical lab sessions.

Community service

This program propelled some students to start thinking about similar initiatives that they can do in Ethiopia by for example, running the same kind of program at other schools and in other parts of the country.

Cultural and personal interaction

Our very diverse group of MIT students offered the students a chance to learn from different personalities and experiences. The presence of a graduate school graduate in the group offered the Ethiopian students a chance to learn about graduate programs and studies in General. He was able to offer general advice about “theses” to students who are the first group in the newly started masters program in Electrical and Computer Engineering at the university. American students offered the students a window to look at perceptions of learning in the Western world. The African MIT students who participate in this program especially are a source of encouragement to these students who see in them the ability to excel to the highest levels of academia.

Technology exposure

The use of projector and laptops in instruction, and an intranet access to class schedules, announcements, notes and homework demonstrated active use of modern technology to aid in the learning process. This is not commonly the case in African universities and this should offer the faculty in the university the challenge to use similar tools to improve efficiency in the teaching process.

Part III: Problems Encountered and Recommendations

This section is composed of three types of problems encountered during the summer 2003 trip to Ethiopia, and appropriate solutions and/or recommendations for each problem. These three categories are as follows: short-term curriculum-related problems that we were able to solve while in Ethiopia, long-term curriculum-related issues and our proposed recommendations on how to solve these problems based on our experiences, and finally, logistical troubles outside of class that we encountered and possible solutions.

Curriculum-Related Problems: Short-Term Problems and Solutions

Throughout the first 2-3 weeks of the program, the group noticed that there were a number of significant problems that could be resolved if we gathered the appropriate information from the students and brainstormed for solutions. During the third week of the course, we asked each student in lecture to write down any feedback they considered valuable, i.e. recommendations on things we could be doing better, fundamental problems about the curriculum/our teaching styles/setup of the class, the lecture/lab situation, etc. A summary of these comments are included in Appendix A. The major problems that we were able to solve are outlined below:

1. Course Schedule

As mentioned above, the class was divided into two large groups, each with 75 students. One of these groups would attend a large lecture in the morning (9:00 AM-12:00 PM) given by two MIT-AITI instructors, and the other group would be working on problem sets and personal understanding of the material in one of three, 25-person computer laboratory settings. In the afternoon (1:30 PM-4:30 PM), these groups would switch tasks and complete their day by either listening to a lecture, or performing lab exercises.

The biggest problem we encountered according to the feedback from the students was that the class was not uniformly paced: the lectures were moving too fast, and there was not enough lab time to finish the problem sets (which were being graded upon completion) and review material from lecture, if necessary. While a small percentage of the students said that either the class was moving too slowly or at a decent pace, the majority of students felt as if they were falling behind fast, and asked us to find some way to slow down.

Our solution to this problem was to slow the lectures down, and somehow find a way to reinforce material taught over the first three weeks. The first change was to remove

Lectures 18-22 from the curriculum because we felt this material was more abstract than the students desired to learn. They were mostly interested in practical applications that they could market as skills they attained through our program. With the loss of five Java lectures, we decided to incorporate “Application Lectures” using concepts taught in the first three weeks (e.g. inheritance in OOP languages) with a running example of “Encryption-Decryption Systems.” This proved to be an excellent solution because it slowed down the pace of new material, reinforced old material, and gave the students a practical example to which they could relate their Java experiences. We also added review lectures before quizzes, and quiz debriefing lectures after quizzes. A copy of our final schedule can be seen in Appendix B.

2. Lecture and Teaching Style

A significant number of comments received from the students focused on our teaching styles, and the difficulties they were having in understand both our actual words (lecture style) and ways of explaining concepts (teaching style). In terms of lecture style, most of the feedback stated that we were speaking too fast, not annunciating enough, or a combination of both. As for teaching style, a number of complaints revolved around skimming over concepts that were not understood well, and that the MIT-AITI lecturers should come more prepared to answer specific questions and know more about the material than what is on the slide. We sat down and talked about these issues, coming to a few conclusions. First, we decided that Ashish should be a part of every lecture, since the students seemed to learn best from his style (a lot of students praised Ashish for his slow-speaking and clarity). We also attempted to review the material more if one of us was assisting Ashish with the lecture, in an effort to explain subtle concepts better. Finally, we tried to add more practicality into the lecture so that the entire time period was not filled with abstractly explained concepts, but grounded in some real-life, well-developed examples.

3. Lunch Break

A simple change we decided to make dealt with the beginning of the afternoon session. Both the students and the MIT-AITI staff (though mostly the staff) felt that one hour was not sufficient for lunch break, especially since we usually worked until ~ 12:20 PM. Thus, we changed the beginning of the afternoon session from 1:00 PM to 1:30 PM, which proved to be a very good decision. It gave us a chance to have a little more time to prepare for the afternoon session, and the students more time to take care of personal matters.

Curriculum-Related Problems: Long-Term Problems and Recommendations

While we evaluated what could be changed to make this year a success, a number of problems encountered were based on the fundamental setup of the class, and thus need to be re-evaluated over the course of the 2003-2004 academic year so that the summer

2004 group will have much more success. These were problems that usually depended on either how the class or curriculum was set up. The main problems are outlined below:

1. Class Composition

The biggest problem faced in Ethiopia in terms of the class was that the composition was not appropriate for the designed curriculum. First, instead of having a reasonable class size where every student could have a personal computer to work on during lectures (as in past years in Kenya and Ghana), we had ~ 150 students, changing the dynamic of the class tremendously. Due to lack of resources, we had to offer lecture in a lecture hall, where no computers were accessible to the students. In our opinions, this hindered the students' learning abilities significantly. The curriculum was designed so that students could *try* the examples during the lecture, and the setup of the class (see "Course Schedule" above) was in such a way that we could not offer extra time to review the lectures. The end result of this was that students reviewed lectures during their lab time, and did not finish their lab assignments on time.

In addition to the volume of the class, the difference in the level of students was staggering. While some had background in C++ and the fundamentals of object-oriented programming, others were completely new to the ideas presented in our program. We spent a large portion of our first week teaching basic computer skills, i.e. how to save a file of type ".java" correctly, the differences between a file and a directory, how to set a path, etc. There were two types of students: ones with enough experience to comfortably move at the pace for which the class was originally designed, and those who needed us to move much slower than we anticipated. The students with the experience tended to be the Electrical and Computer Engineering (ECE) graduate students, and those of lesser experience were from all other engineering backgrounds (civil engineering, mechanical engineering, etc.). The end result was an inherent tension in trying to teach a class which had enough students of both types to cause complaint. Appendix C should a distribution graph of the first quiz, covering up to Java classes and objects. As can be seen, the curve is bimodal, telling us that students fell near one of two peaks and verifying our theory that there were two types of students in the class.

There are really only two ways to solve this problem, in our opinions. The first approach would be to keep the class size at this level, and teach two versions of the class: one fast-paced version for the ECE graduate students, and one slower-paced class for the students majoring in other fields. This would mean either taking more MIT-AITI participants and resources (i.e. two projectors instead of one) to the country, or splitting the current level of participants and materials into two groups and having the participants figure out a workable system. The second idea is simply to limit enrollment in the class as in other countries, and teach one type of class: a fast-paced, intense course, or a slower, purely introductory level course.

2. Course Materials

As mentioned above, the course materials are designed for a smaller, more interactive classroom setting. There are practice exercises in the lecture notes for the specific purpose of having the students test them as the lecture progresses, in real time. For our situation in Ethiopia, this curriculum was not very applicable to a large, lecture hall setting. We found that students wanted to try the lecture examples, but since they could not at the time of presentation, they utilized valuable lab exercise time to review lectures, thus weakening their lab scores considerably. The question of whether the curriculum or the format of the class should be changed is left for debate; the only certain thing is that this curriculum is not the best approach to teaching with this type of classroom setting by any means.

In addition, there were a lot of minor errors in the lecture slides that needed to be reviewed/revised both before a lecture was given, and after a lecture when a student pointed out the error. For example, many students cut and paste code from the PowerPoint slides, but since Microsoft PowerPoint relies on default correction of “errors,” much of the code was altered and did not compile or run. A common complaint was that the code is wrong because reserved keywords like “public” and “private” were capitalized, which Java cannot understand. For the next session, regardless of the country, all the code in the lectures should be reviewed and changed where necessary. Also, the conceptual explanations should be reviewed for both content and clarity. Another common reaction on the part of the students was that the slides did not make a lot of sense to them. Ashish mentioned that he was interested in revamping certain aspects of the curriculum, especially with the introduction of “Application Lectures” as a permanent part of the curriculum.

Logistical-Related Problems

1. Living Accommodations

We were situated in a villa in the Bole area, which is the same area of Addis Ababa in which most of the embassies and UN-related individuals reside. The group agrees unanimously that the area was a great choice – close to the heart of Addis, very nice restaurants and facilities within walking distance (including a gym where Manish and Mohamed paid for membership), and an extremely safe atmosphere. Within the villa though, the group think that housing could have been more satisfying. Eric and Eston did not feel as if they were able to cook in the kitchen freely because it was below comfortable standards. Manish and Ashish had chronic problems with hot water, and the workers at the villa were not as accommodating as expected. For example, we did not eat breakfast most days because it was not ready until after we had to leave for AAU.

We feel that even though the housing was definitely adequate and livable, alternative options should be considered for the summer 2004 session. The three best alternatives are some hotel setting, a cheaper villa outside of the main parts of the city, and the

housing that AAU offers to “visiting professors.” The first option would definitely be comfortable enough for any student, it would take away from the experience of living in Ethiopia, since a hotel is designed to be a place for foreigners to stay while in a country. Also, a hotel setting would prove to be much more expensive, most likely. A cheaper villa in the outskirts of Addis would probably be more comfortable for the same price, but would not allow the MIT-AITI participants the chance to live in the city, which we all valued very much. The third option should definitely be the first inquiry for the summer 2004 group. The guest house offered to “visiting professors” is supposedly comfortable, close to the campus, and of minimal cost. Dean Dinke Abebe, Dean of the Faculty of Technology, is the best contact for this option.

2. Transportation

Many different transportation options were attempted while in Addis Ababa, but in the end the group ended up taking contract taxis to work everyday. At first, we attempted to take public taxis (equivalent to buses in the US), but this proved to take entirely too long (~ 45 minutes). We also tried to hire contract taxis to come at a certain time and take us everyday, but relations with these individuals deteriorated after arguments over the price of their rides occurred. For the final four weeks, we walked to the nearest road and picked up different taxis everyday. This was not too expensive, but cheaper ways do exist.

We recommend that a taxi driver (with a large car to fit everyone, like a van) should be contacted by either Solomon or AAU and a contract be set up for the entire six weeks where a reliable driver comes to the residence at a specific time and takes the MIT-AITI staff to the university. The end of the day is not as important since there is no set time at which the staff has to return home, as in the morning. Either the same driver can take the group home, or they can take taxis (both public and contract). The important thing here is that a relationship is set up where the driver knows the prices beforehand, so no issues over money arise after he has been driving for a few weeks. Our experience was that unless the cost is outlined time and time again beforehand, it will become an issue later, and relations will break down fast.

This is another argument for the university-provided housing. If it is walking distance to the campus, then no worries over transportation are necessary, since the MIT-AITI participants can simply walk to campus (we would have all preferred this).

Part IV: Entrepreneurship and NECAT Engineering College

Entrepreneurship Lecture, AAU Faculty of Technology

Background

Being a part of various MIT Entrepreneurship clubs and having taken some entrepreneurship lectures given by Joost Bonsen and Joe Hadzima, and having taken an entrepreneurship seminar by Richard Shyduroff and consequently participated in the MIT 50K competition, Eston Kimani came to the realization of the importance of entrepreneurship and how the knowledge of entrepreneurship is crucial to Africa which continues to lag behind economically and is in dire need of entrepreneurs. Entrepreneurship classes are mostly absent in Africa where the focus is to educate people for employment. This fact was evident in AAU where students, some of them in their fifth year of studies had never taken any classes on entrepreneurship. Consequently he decided to teach entrepreneurship lessons on the side during the MIT-AITI project in Ethiopia.

Organization

Starting on the second week of the programs Eston started teaching optional entrepreneurship classes at 4p.m. right after regular java classes for a period of one hour on Tuesdays and Thursdays. The students were very enthusiastic about the class (as their comments attest) and we were very encouraged by the progress of the course. Moreover, we felt that students needed entrepreneurs from Ethiopia who were experienced and understood the local social and economic factors to speak to them about their experiences. Consequently, with the help of Ato Abbas Nazerali, we were honored by the following guest lecturers:

1. Ato Tariq Al-Mosheky, Senior Technical Consultant, EthioMarket.com on E-commerce in Ethiopia
2. Ato Lulseged Teferi, President, Dashen Bank (s.c.) on Banking and Investment
3. Mr. Mitsuyoshi Sagawa, Japan International Cooperation Association, on Ground water development and water supply in Ethiopia.
4. Ato Michael Asfaha, head of the minister's office, Ministry of Trade and Investment, on Marketing and International Trade
5. Ato Omar Bagersh, Bagersh P.L.C., on Being an Entrepreneur

These lectures complemented Eston's presentation very well and were profoundly inspirational and motivating to the students. They have repeatedly expressed their appreciation and eagerness to take the lead in Entrepreneurial initiatives in Ethiopia.

Future Plans

Students in AAU were motivated by the presence of guest speakers and they were motivated to start organizing more guest lectures on their own in the future and build on the core teaching program and share it with other institutions. We also plan to organize a business plan competition for the entire MIT-AITI program which would be run akin the MIT 50K competition. This was a relatively new initiative, and we dare to say revolutionary for AAU students. Students in most African schools get very slight exposure to interdisciplinary study and for that matter to entrepreneurship studies. We believe that the teaching of entrepreneurship must be a part and parcel of economic revival in Africa and are excited by the success of this first project. We hope that MIT-AITI will seize this opportunity and implement entrepreneurship as a core of the summer program!

NECAT Engineering College

NECAT is a private engineering college run by Dr., Ing. Daniel Kitaw, who is also the chairman of the AAU Technology Faculty Industrial Linkage, through which AITI initially made contact with AAU. NECAT has been offering certification for various technical fields that are in much need in Ethiopia, and which is the best alternative for students who do not qualify to follow government sponsored higher education. This fiscal year, NECAT has started to offer certain BSc. and advanced level diploma courses and it is planning expansion in all its departments.

The Course

NECAT requested that we offer some practical training in application software. Matlab and AutoCad were proposed and we chose AutoCad because of ease of availability. The Java course was thought to be too advanced, and the time available too short for the students to grasp sufficiently.

Five female and fifteen male students with the highest GPA's (according to the affirmative action arrangement) and ten staff members took the course. There were only fourteen computers available for them, and this made the task very difficult because the class largely consisted in doing exercises in the lab, with lesser amount of presentation.

Mohamed Haji would go to NECAT on Wednesday and Friday afternoons for two hours each for this program.

Future Assessment

As long as there are a sufficient number of instructors in AITI, as we had this summer, it is a good idea to pursue such activity at NECAT or other such private colleges. In fact, MIT could play an important advisory role to such fledgling colleges by way of curriculum development, training programs like AITI, etc. Such activity, if it sustained in any one private college would also encourage better cooperation between the government colleges, such as AAU and private colleges-- which is now lacking.

Part V: Protocol Activities and Networking

Dean, Dr. Ing. Abebe Dinku arranged a number of meetings with the university staff and administration, as well as media and U.S. embassy representatives, in addition to hosting us for dinner at his house and providing us with help and advice in our school as well as outside activities. Independent of this, Ato Bekure Assefa, member of the Ethiopian Rotary Club and Solomon Assefa's brother and Ato Abbas Nazerali, Nasruddin Nazerali's father, introduced us to people who contributed to our experience in Ethiopia and who could be valuable resources for future programs.

1. Informal meetings with Faculty
2. Meeting with the president of the University, Professor Endrias Eshete at his office in the main Campus
3. Reception with the president, vice president, deans and guest lecturers in the Entrepreneurship seminars
4. Visit from the cultural attaché and senior aide of the U.S. embassy at AAU.
5. National and independent newspapers run stories on AITI
6. Lunch hosted by the Rotary Club.
7. NCR (Solo could fill in something here.)
8. Mamo Kacha PVT. LTD. Manager.
9. All our guest lecturers-- see section on Entrepreneurship

Appendix A: Summary of Student Comments

LECTURERS

too fast

voice too weak

don't mention things you don't are not sure about or have not prepared

Ashish preferred

don't just read slides

interact more personally-- allow us to share our experiences

come more prepared

answer questions 'fluently'

LECTURES

more worked examples

more participatory

more practical, engineering examples

not detailed enough when we want to refer to them for the problem sets

time use not efficient--

make more interesting

too abridged

LABS

should have more open hours

check progress more regularly

more problems to practice

new comers are creating problems

attendance could be better

be more familiar with problems so you can help us easily

some of you do your own work/don't pay much attention

need time to read lectures

supervise and give individual comments

no sufficient time

give detailed answers

MATERIAL

first time oop for some

handouts would solve problem of slow progress in labs

problems difficult for beginners

reference books should be available

course general and equips me to read further-- please give concrete projects as well

disproportionate time allocated to basics and to major oop concepts

entrepreneurship and other American experience is 'expected' and appreciated

STUDENTS

some with no background so ease up

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late comers

\oop background = lag behind

should be divided according to background

some students are showing us others' assignments for their assessment so do it by tests only

SESSION

morning for morning students and afternoon for afternoon students

no time to read

test appeared too soon

start afternoon session later

publish solutions on a timely basis

Appendix B: Final Curriculum Schedule for Class

DATE	LECTURE	LAB EXERCISES
WEEK 0		
Friday, July 18	Introduction, Lectures 1-2	
WEEK 1		
Monday, July 21	Lectures 3/4	Problem Set #1
Tuesday, July 22	Lectures 5/6	Problem Set #1
Wednesday, July 23	Lecture 7	Problem Set #2
Thursday, July 24	Lecture 8	Problem Set #2
Friday, July 25	Lectures 9/10	Problem Set #3
WEEK 2		
Monday, July 28	Lecture 11	Problem Set #3, Study for Quiz
Tuesday, July 29	Quiz # 1 (Covers up to Lecture #8)	No Lab Session due to Quiz Problems
Wednesday, July 30	Lecture 12	Problem Set #3
Thursday, July 31	Lecture 13	Problem Set #4
Friday, August 1	Quiz # 1 Overview	Problem Set #4
WEEK 3		
Monday, August 4	Application Lecture - Data Encryption	Problem Set #4
Tuesday, August 5	Lecture 14	Problem Set #5
Wednesday, August 6	Lecture 15	Problem Set #5
Thursday, August 7	Application Lecture - File I/O	Problem Set #6
Friday, August 8	Lecture 16	Problem Set #6

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WEEK 4		
Monday, August 11	Lecture 17	Problem Set #6
Tuesday, August 12	Lecture Cancelled	Problem Set #7
Wednesday, August 13	Quiz # 2 Review Lecture	Problem Set #7
Thursday, August 14	JSP Lecture #1	Problem Set #8
Friday, August 15	Lecture Cancelled	Problem Set #8
WEEK 5		
Monday, August 18	Quiz #2 (Covers up to Lecture #15)	JSP Exercises
Tuesday, August 19	JSP Lecture #2	JSP Exercises
Wednesday, August 20	JSP Lecture #3	JSP Exercises
Thursday, August 21	UNIX Lecture #1	UNIX Exercises
Friday, August 22	UNIX Lecture #2	UNIX Exercises

Appendix C: Distribution of AAU Students on 1st Quiz

