Introduction

Creative Arts Charter School was created five years ago by a group of stay at home mothers who met in an online chat room when their children were still too young to go to school. As they spoke about their children’s education with each other, they found that they all agreed that public school wasn’t the way to go. They felt their children were having their creativity stifled, and their individuality stolen away by public schools. They talked to their husbands, made a plan, and made it happen. These stay at home moms and founders of Creative Arts Charter School now make up the school board. All of their children have graduated from Creative Arts Charter School and are at the top of their class in their respective colleges.

The school has continued to grow since its opening five years ago, and after a meeting with the President, Vice President and Department Heads, decided their current way of doing things wasn’t working. It was difficult for parents to keep track of their students without contacting the professors. Students were having issues trying to attend their live classes because of software problems, and even the meeting this decision was made at crashed twice during that time. Not knowing where to start themselves, and with the help of some generous donations and grants, they contacted a systems analyst to help them update their systems software and hardware.
Organizational Chart
Business Processes

As a school there are many transactions, events and results that can be described and documented. Similar to a private school, Creative Arts Charter School does have a tuition fee which includes everything the student needs for a semester including notebooks, pens, pencils, sketchbooks, etc. Tuition is charged per year rather than per semester since many of our classes span two semesters. At the beginning of the year when tuition is due, the student cannot be fully enrolled in any classes until the parent either sets up a payment plan or pays the balance in full. After one of those two conditions is met, the student will receive a call from the Class Councilor to either select classes if no classes were selected, select new classes if listed classes are full, or to verify the classes the student is taking. Once the Class Councilor talks to the student and the schedule is set, the schedule is sent to the parent who can change the class schedule if they wish to do so. Once the classes are selected, if the student is a new student:

The student receives an email from the school, which is given to them by the Admissions Employee upon the initial registration, which contains their class list, the supplies they should be expecting in the mail, and their login for the laptop they will be receiving along with their student ID Number.

After the course list is finalized by the Class Councilor, the course list and student’s information is sent to Supply Management who generates a supply list. The Supplies Management Employee assigns the student to their new supplies using the database before sending the information to the IT department to prepare hardware and software for the student. The Supplies Management Employee packs up any non-electronic supplies the student may need. The basic kit would include textbooks, notebooks, pencils, pens, etc. They may also ship the student supplies like sketchbooks and art kits, or even an instrument rental depending on their classes. The Supplies Management Employee then flags the box ready for delivery, and it is then sent to the student. (Electronic and non-electronic supplies may arrive separately).

In the IT department, an IT employee receives the student’s supply list and prepares a computer for the student, setting the default login (Student ID, Last 4 of Social Security Number), installing initial software plus any software required by the student’s class selection. The IT employee then packages the computer, a printer, a web cam, a headset with microphone, and a booklet with instructions for logging in and viewing the first tutorial on how to access all school related functions (as well as any other technology needed for registered classes. ie: digital camera, video camera, cords, etc.).
If the student is not a new student:

After the class schedule is set by the Class Councilor, the course listing is sent to the Supplies Management Department to generate a supply list for the student. The supplies management employee sends the list and student info to the IT department and then collects the students supplies, assigns them to the student in the database, and packs them up to flag them for shipping.

After the IT department receives the list of supplies, they grab any hardware that may need to go to the student. They will also collect software disks and pack them in the box with the hardware for the student to install. They also include instructions.

Every two weeks, each employee is responsible for verifying their punch card and submitting it to the payroll employee. The payroll employee is then responsible for double checking paychecks before they are direct deposited or mailed to the employee.

If an employee, Student, or Teacher isn’t happy or needs to change their personal information, they can contact Human Resources. Human resources will do their best to always reach a solution, but if a solution to a problem cannot be found, the Human Resources department will find mediation options for the parties involved.

Once the semester starts, students are required to attend live classes online once a week, and will be assigned homework and projects. Students and Parents may check grades at any time. And Parents have their own login for their student’s information and may communicate with teachers this way.

When the semester is over, textbooks for that semester are returned to the school. Any technology may be kept until graduation. If technology is returned, IT must inspect it carefully for damages. If there are none, it may be checked out to another student. If there are damages, the IT employee must create an invoice for the price of the damages which is then sent to accounts receivable. This same process is repeated at graduation.
Evaluate Feasibility

Operational Feasibility
What the users need is a way to be able to connect with each other from anywhere without anything holding them back. While that is unrealistic, with today’s technology, I think it is possible to create a system that will include all of the features they need. I honestly feel like I will be able to create or find a system that meets all of their requirements and will exceed their expectations.

Technical Feasibility
The school needs some new hardware to facilitate their student’s needs. The new computers will likely be expensive, but in bulk we will be able to find a discount, especially with the quantity we need. In traditional schools, IT departments reimage computers all the time; just about every summer. Once I have the computers in hand, it will be simple enough to network them together to install the image on to them.

Economic Feasibility
Without donations and grants, this upgrade would not be possible. However, this last year Creative Arts Charter School won several awards for their academics and variety of courses offered. They have set this money aside for the upgrade along with money they have been putting aside for three years now, knowing the system would need to be upgraded. The most expensive part will be buying enough computers to replace the ones they have now. Another potentially large expense depends on software package options, or if the system is developed in house. We might also save money by trading in our old computers depending on how we go about it.

Schedule Feasibility
I don’t think schedule will be a problem. After we have software in hand, and with the help of the IT department, we could likely have student’s new computers within a month, no more than two. The timing also depends on how long it takes a company to deliver 200+ computers.
Creative Arts Charter School Student Questionnaire

Your school is taking on a huge project to make your high school experience even better. We want to revolutionize the way you learn. Everyone learns different and so your learning should be tailored to you. Because of this, your input in this situation is invaluable to us. We would greatly appreciate if you could finish this form as soon as you are able and return it to your Class Counselor.

Please rate the following items on a scale of 1 to 10 (1 being least important to you and 10 being most important to you).

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What is your favorite thing about the current system?

____________________________________________________________________________________

____________________________________________________________________________________

What opportunities for change do you see in this system?

____________________________________________________________________________________

____________________________________________________________________________________

On a scale of 1 to 10 (1 hard and 10 easy), how easy is it for you to accomplish the following tasks?

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<td>Interact with your classmates</td>
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<td>Communicate with your Teachers</td>
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<td>Attend Live Classes</td>
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<td>Use School Research Resources</td>
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<td>Communicate with academic advisors</td>
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<td>Schedule Classes</td>
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Creative Arts Charter School Teacher Questionnaire

Your employer is undertaking a huge project in an effort to make your jobs much easier. In order to best tailor this project to your needs, we need your input. If you could fill out this questionnaire as soon as is convenient, we would greatly appreciate the effort. I look forward to working with you farther.

What is your favorite thing about this system? _______________________________________________
_____________________________________________________________________________________

What opportunities for change do you see in this system? ___________________________________
_____________________________________________________________________________________

On a scale of 1 – 10 (1 being hard and 10 being easy), how difficult are the following tasks.

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<td>Conducting live lessons</td>
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<td>Provide students with homework parameters</td>
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<td>Receive Student Homework</td>
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<td>Post Grades to Grade Book</td>
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<td>Communicate with Students</td>
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<td>Communicate with parents</td>
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Creative Arts Charter School Parent Questionnaire

As a parent, I understand that all we want is for our children to succeed. That’s why you send them to this school. We are currently beginning a project that will change the way your children learn. We want to make sure this change is for the better and so we need your input. If you could return this questionnaire at your soonest convenience it would be greatly appreciated. We look forward to sharing this journey with you and your children.

How do you most often view your child’s progress? (ie, email, gradebook, phone calls)

__________________________________________________________________________________

If given the option, would you like to receive email notifications each time grades are updated, weekly, or monthly?

__________________________________________________________________________________

How easy is it to communicate with your child’s teachers and academic advisors?

__________________________________________________________________________________

What is your favorite thing about the current system?

__________________________________________________________________________________

What opportunities for change do you see in this system?

__________________________________________________________________________________

__________________________________________________________________________________
DFD for System
Database Structure

Teachers
Teacher ID, First Name, Last Name, Department, Phone Number, Street Address, City, State, Zip, Start Date, Salary (per year), Vacation Days, Sick Days, Department Head?

Students
Student ID, First Name, Last Name, Year, GPA (Overall), GPA (Current Semester), Phone Number, Street Address, City, State, Zip, Mother’s Name, Father’s Name, Semesters Completed, Excused Absences, Unexcused Absences

Courses
Course ID, Course Name, Teacher, Semester, Start Date, End Date, Time, Credits, Description
Class Diagram
User Interface Design

[Diagram of a student home screen with sections for classes, upcoming assignments, grades, and semester/cumulative GPA]
System Design Specification

After in-depth research and documentation, I believe that I have found the most cost effective way to handle an expensive problem. Currently, you are experiencing an increased volume of hardware and network failures which must be fixed as soon as possible. Unfortunately, repairing hardware is not cheap. With the cost of replacement computers, the new server, webcams, and headsets for the students, we are already looking at $135,980. Then I would strongly suggest purchasing high end network protection since we can’t guarantee the safety of the connections our students connect to while they connect to our server. I estimate this tightened security to cost about $10,000. Office 365 will cost $604 dollars per month to support all the staff and students. While the high cost makes this situation not ideal, but in the long run I feel that there will be a real benefit. The higher end technology will greatly benefit both the students and the teachers. I would estimate that I would be ready to begin installing software onto the new hardware in about twelve weeks at which point I will run some tests on a small scale before the computers are shipped out to the students. I should be finished testing before the next school year would start, giving students enough time to receive the new hardware and have some time to get used to it before their classes would start.

While developing a user interface for the students, I wanted to try to give them the opportunity to chat...
with their peers as students would do at any other high school between classes. Along the side, there are four buttons, Home, Profile, Mail, and Help (from top to bottom). A student may view more detailed lesson plans by selecting the desired class from the list of classes. I also included a calendar to try to help students manage their time without the structure of a typical high school. Along the bottom of the calendar area is a box that will display upcoming assignments for the user. The bottom panel contains a grade book that shows students the grades they have in each class (clicking on the class will bring up a detailed list of assignments), as well as their GPA that semester and their cumulative GPA. Along the right side is a live chat function where students can chat with each other as if they were in a school building together. There are options to mute activity or close out the window if it becomes too distracting.

I have also prepared a list of required data fields for the system to store all of the data pertaining to teachers, students and courses. A student’s file not only contains their information (along with their parents), but it also tracks their academic performance using semester and cumulative GPA. The database also tracks where in their high school career the student is and their absences.

A teacher’s file contains their personal information along with their salary information, vacation days, sick days and status in the department.

Parents initially input the student data (such as name, address, phone number, etc.) for the system to use. A student inputs their class selection so that the system can output a class roster to the teacher, and a supply list to supply management and IT department. The teacher inputs course materials requirements which output a list to supply management. The teacher inputs course/homework requirements which outputs to the students. Students then input their homework which outputs to the teacher. The teacher than grades the assignments and inputs the grade into the system. Each time grades are inputted by the teacher, a report outputs to students and parents showing the updates.

The network will consist of a large central server protected by (preferably a VPN (virtual private network) a stateful multilayer gateway.

### Database Structure

#### Teachers
Teacher ID, First Name, Last Name, Department, Phone Number, Street Address, City, State, Zip, Start Date, Salary (per year), Vacation Days, Sick Days, Department Head?

#### Students
Student ID, First Name, Last Name, Year, GPA (Overall), GPA (Current Semester), Phone Number, Street Address, City, State, Zip, Mother’s Name, Father’s Name, Semesters Completed, Excused Absences, Unexcused Absences

#### Courses
Course ID, Course Name, Teacher, Semester, Start Date, End Date, Time, Credits, Description
This DFD describes the initial enrollment process. It starts when the parent contacts the school to Enroll Student at which point the student’s information is added to the Student Roster. After the Student is enrolled, they can Select Classes from the Course List. When the student selects the course he or she is interested in, the system Adds Student to the Teacher Class Roster (also pulling data from the student Roster). When the Teacher Class Roster is updated, the Teacher is notified. Once school starts, the Student does homework and Submits Homework to the Teacher. The teacher grades the homework and then Posts Grades, which update the students GPA in the Student Roster. Reports are also sent to the Parent and Student.

With the server that was selected for this system, there will not likely be any data storage constraints, allowing for growth without worry. The biggest constraint at the moment is security. In an office building, it is much easier to manage network security because all of the hardware is in one building connected to the same network, or similarly “safe” places within the company. Unfortunately, we cannot guarantee the safety of every network used by our 200 students. Because of this, I seriously think we need a stateful multilayer gateway to protect the server. It is one of the best firewalls out there and if we combine that with educating the students on the importance of network security, I doubt there will be much to worry about. Another constraint could potentially be the sheer volume of computers that have to be imaged and set up. With the help of the existing IT team however, I feel like this shouldn’t be a problem.

Since these users already know how to use a computer, a simple tutorial on startup of the new software may suffice for training accompanied by a manual shipped out with the computer. If the students have any questions, they already know how and when to contact the IT department for help.

The system would require regular backups of all the data, preferably onto a separate server when money allows. A complete data backup should be done once a month with incremental backups each night. Teachers should also keep a personal file of student grades for each semester. Depending on how back the problem started and the time since the last full backup, the full back up on the server could provide a starting point for restoring incremental backups.
Start-up Processing

- Set Up Server
- Test System (redevelop as needed)
- Create Image for New Computers
- Test Computer Image on About 25 New Computers
  - Revisit Image Configuration if errors
- Image All Computers
- Train Employees and Teachers
- Send New Equipment to Students
  - Includes written instructions for initial setup
  - On start-up, have interactive tutorial for students
- Check up with Students and Teachers to get input and clarify any potential confusion

Full backups should only be stored for 6 months, with a full back up of graduated student data to be created each year. Each back up of graduated student data should be put on its own hard drive and filed in a fire-safe filing cabinet or safe for future safety.

As far as the system appears, no external software will be involved, however we will need to contact different hosting companies about webservers for the web based aspects of the system. Luckily, hosting costs are relatively low in today’s technologically advanced world.

If everything is implemented as planned, there should be very few unmanageable constraints. When it comes to students, I’m not too worried about them adjusting to the new technology. Teachers and parents, however, may need extra training and assistance with operating the new system. For the first three to six months, I would expect an increased burden on the IT staff and, depending on how heavy that burden becomes, would suggest posting temporary IT jobs to accommodate the influx of requests.

Because accidents happen, I would suggest working with an insurance company to provide the option for insurance on school hardware. My suggested system for dealing with damages would be to also image the old computers with the new system as “rental” computers to cover a student while their normal computer is in for repairs or awaiting replacement.

There are three practical methods for software distribution to students. The first option involves hard copies of software to then be returned to the school after use. This involves the least amount of work for IT, and is the least server intensive, but it relies on the student to install the software correctly which could cause problems. The second, involves digitally delivering software to students which leaves IT with some work to do, but still requires the student to properly download and install the needed software on the computer. The third, and the option I suggest, is scheduling a day with students to log into the network with their computers, and have the IT staff direct connect to the computers and install the needed software for the student who will receive a call, text, or email when the process is done informing them they can use their computer again. While this places a heavy burden on the IT department in the short weeks between semesters, it reduces the chance for user errors that can
happen when students install the software themselves. I personally feel like many students are capable of handling the digital delivery system, the use of IT personnel to install and configure the software so each student is looking at the same display.

Each school computer that connects to the network, there will be antivirus and firewall services installed. I would also suggest offering parents hard copies of antivirus software at a very low price to encourage system security. That way, if a student uses a parent’s computer or the parent accesses the server for grades, there is an extra level of protection.

Start-up Processes will be performed after the development of the system and acquisition of the hardware required. Initial data entry will be performed with a piece of software developed at the end of the development phase that will link the two systems to move the data over. User training will require several different levels. Students will be receiving a link to a website developed near the end of the development phase to walk them through the basics of the new system interface, and pointing out the changes that were made and why. It will also include a short quiz at the end to show which parts of the system need the most extra training. Parents will also receive a link to a website that walks through how the new changes will help them and their children to better connect with teachers and various resources. The parent tutorial will also include the steps they can take to make their information, and their child’s information, more secure, including the link to purchase and either download, or receive in the mail a copy of anti-virus software. Teachers will receive a tutorial outlining the new gradebook and classroom tools, including an overview of all the new features and how they can be used to help facilitate student learning. After the system is complete and tested but before full implementation and distribution, students will receive data including any new login information for the software and email clients, along with detailed tutorials on how to access their homework assignments, classroom environments, current grades, course history (including any plans that have been made with their course advisor), email, learning tools and resources, and student communication, including filtering features, lists, and student “study rooms” (classroom environments meant for smaller groups of students to hold study groups or work on group projects). Once the system is fully implemented and distributed, tool tips will appear the first time students encounter a new feature, and there will be question mark buttons next to elements that will pop up a tutorial for using that element or feature. Parents will receive a tutorial that goes into the intricacies of keeping up with their student’s progress and communicating with teachers, admissions councilors, course advisors, and IT staff, including tutorials on how to update student and parent personal information, such as emails, phone numbers, addresses, family size, etc. Parents will also receive the options to observe their child’s classes in real-time. Sessions that are attended by the parent are completely anonymous, and neither the child nor the teacher will be aware of the observation unless the parent decides to tell them. Teachers will receive in depth tutorials about updating grades, assigning course work, grading course work, planning classes, teaching classes, sending emails (including class wide emails, individual emails, or project group emails), and communicating with students, teachers, advisors, and IT support.
The Software Test Plans will happen at each step of development. The system changeover will combine pilot operation and phased operation as part of the test plans.

1. To start, we will develop the databases, since they are the real heart of this system.
   a. Once the databases are set up (validation rules and input masks in place, database relationships, etc.), test data will be created (including correct records and incorrect records to cover just about any error that can occur in data entry).
   b. The test data will initially be used to check the integrity of validation rules.
   c. The databases will then have their interactions tested before continuing to the next step.
   d. Any problems in the tests will result in re-development or tweaking of the database setup, and will start related tests at step one.
2. Following successful tests of the databases, software will be developed for the user end of database entry. The goal is to create user friendly screens to mask the database structures underneath.
   a. Each of these pieces of software will be tested individually for bugs, design flaws, simplicity of use, and interactions with related databases.
   b. Following unit testing, the pieces of software will have their interactions tested for bugs, design flaws, simplicity and overall database interactions.
   c. Any errors will result in re-development or tweaking of software which will require re-testing of related systems.
3. After the design is finalized and final testing has begun, the development team will design interactive tutorials for the web development and design teams to recreate into simple to use web tutorials, instruction books, and easily accessible documents for IT support, parents, students, and teachers. This may require the development team, in conjunction with the web development team, to work on an online, searchable database of tutorials, information resources, pdf copies of instruction books, pdf copies of hardware manuals, and troubleshooting data.
4. The final testing phase before user testing will also include tests to ensure web applications are correctly calling/sending data from/to the proper databases.
   a. Any errors here will require re-coding or tweaking by the web development team, and retesting with involved databases, before user testing can be approved.
5. Tutorials may require tweaking based on design changes required during previous testing. When the basic tutorials have been completed, a test would begin with the new hardware.
   a. After imaging about 25 “test” computers, the IT staff would test the software with the hardware.
   b. After IT testing, a second analyst will be brought in to perform a post-implementation evaluation of the initial system tests.
      i. After IT testing and the evaluation of the second analyst, at least 25 IT students will be selected (based on applications) to user test the new software for the fall semester (or more depending on user interest. Priority will be given to students
working primarily on IT classes, which will use the new classroom interaction software.)

1. Classroom interaction software and functions will be installed on the current computers of any students in IT classes that will be using the new features.

2. This first test will be done over the course of the first fall semester after development. Students will be provided with a new ticket system for handling bugs according to the new system. Data generated in the new system (such as grades and student assignments) will be put into both systems.

3. As this stage of testing takes place, patches and updates will be coded depending on the priority level of the bugs.
   a. Level 1 Priority Maintenance requests will be addressed immediately on arrival by one of the three development teams.
   b. Level 2 Priority Maintenance requests will be addressed by the first available development team after Level 1 requests, and may be put on hold as new Level 1 requests come in. These patches will be released on a bi-weekly or monthly basis depending on the completion time and volume of requests.
   c. Level 3 Maintenance requests will be addressed by the first available development team after Level 1 and Level 2 requests are addressed, and may be put on hold as more, lower level requests come in. These completed requests will be implemented during the student's holiday break between Fall and Spring, or, if not completed by that time, in the summer break between Spring and Fall.

4. IT students were selected for this first test run because they have a better understanding of technology, and will be able to submit more technically detailed reports (which will be requested, not required, on a weekly basis in conjunction with bug reports (maintenance requests) as problems are encountered).

ii. While the first test is being run, a second set of computers will be prepared for the second stage of testing that will begin in the Spring Semester. As patches are implemented, the second set of test computers will be patched before distribution between the fall and spring semester. This second test will involve volunteer students who are determined to be non-technical students to test the simplicity of the interface.

iii. The final distribution will happen over the summer after all or most system patches have been documented and implemented, completing the system changeover.
A post-implementation evaluation will be completed at several stages of implementation. The first evaluation will be completed by a second systems analyst following successful systems testing in the test system. The second evaluation will be done by IT students and professors between the Fall and Spring semesters. A third evaluation will be done by the second test group between the Spring and Fall semesters, and a re-evaluation by IT students and teachers depending on the scale of the changes done over that time period. A fourth and final evaluation will be done by the remaining students, teachers and staff members at the completion of the second fall semester. Evaluations will also be done by the first two test groups if the changes were large enough to warrant it, or if they choose to do so.

Reports will be sent to management after each evaluation so management can approve the next test phase. A final report will be completed for management after all the evaluations are complete. This documentation will include the final versions of all systems documentation, planned modifications and enhancements to the system, a summary/recap of all systems development costs and schedules, comparison of actual costs and schedules to the original estimates, and the post implementation evaluations that have been performed on the system. The documentation will also include a detailed change log, organized by which test phase patches were implemented, sorted by date. Each change log entry will include:

- The date the maintenance request was made
- The team that responded to the request
- The priority level of the request
- The date the request was resolved
- The patch the request resolution was part of
- The date of the patch release

In the following format:

<table>
<thead>
<tr>
<th>[Phase of Implementation]</th>
<th>Patch Release Date [date]</th>
<th>Priority Level</th>
<th>[Priority Level]</th>
<th>Patch Number [patch number]</th>
</tr>
</thead>
</table>

Resolved Requests:

<table>
<thead>
<tr>
<th>Ticket Number [Ticket Number]</th>
<th>Team # [Team #]</th>
<th>Responding Dev. [Developer Name]</th>
<th>Requestee [name]</th>
<th>Request:</th>
<th>Resolution</th>
</tr>
</thead>
</table>

Cost estimates have been addressed above, but following is an in depth development and implementation schedule for the system.
The schedule is based off of cooperation between seven teams of people:

- **The web development team (WebDT)**
  - Responsible for developing the web-based applications necessary for the system.

- **The hardware team (HardT)**
  - Responsible for the acquisition of hardware and third party software subscriptions necessary for the new system.
  - Also responsible for the physical setup of the new server hardware and installation of software onto the various pieces of hardware.
  - Reports software requirements to the development team responsible for creating the image for student and teacher hardware.

- **Three development teams (DevT1, DevT2, DevT3)**
  - Responsible for the actual coding of the system
  - Responsible for managing system requests
  - Responsible for systems testing in cooperation with the hardware team.

- **A design team (DesT)**
  - Responsible for designing user interfaces
  - Responsible for evaluating interface change requests
  - Responsible for print and digital user manuals and tutorials (design and creation, not content)

- **A documentation team (DocT)**
  - Created by taking one member from each of the other teams and the head analyst
  - Responsible for
    - Updating documentation
    - Reviewing and enforcing cost and schedule constraints
    - Keeping respective teams on task
    - Creating reports and presentations for management
    - Reviewing system requests and resolutions
    - Managing relationship with users

With the seven teams, most of which working forty hours five days a week, we should be able to stick to the following schedule. The design team could also be removed if the web development team consisted of multi-talented individuals with training in both design and development.
Final Schedule

1. Development Team 1
   a. Equipment Database – 4 days
   b. Class Database – 4 days
   c. Database Testing – 1 week
   d. Develop Gradebook Software – 2 weeks
   e. Develop Course Selection Software – 2 weeks
   f. Software Testing – 2 weeks
   g. 1st Post Implementation Evaluation – 1 week

2. Development Team 2
   a. Student Database – 4 days
   b. Support Database – 4 days
   c. Database Testing – 1 week
   d. Admissions Software Development – 2 weeks
   e. Software Testing Preparation – 2 weeks
   f. Software Testing – 2 weeks
   g. 1st Post Implementation Evaluation – 1 week

3. Development Team 3
   a. Teacher Database – 4 days
   b. Employee Database – 4 days
   c. Database Testing – 1 week
   d. Support/Tutorial Software – 2 weeks
   e. Troubleshooting/Tutorial Info – 2 weeks
   f. Software Testing – 2 weeks
   g. 1st Post Implementation Evaluation – 1 week

4. Design Team
   a. Web Application Design – 4 days
   b. System Design Interface – 1 week
   c. Tutorial Design and Structure – 1 week
   d. Troubleshooting Catalogue Design – 1 week
   e. Create Hardware/Software Manuals – 4 weeks

5. Web Development Team
   a. Create Web Shell/File Structure – 4 days
   b. Create Static Course Screen
      i. Students – 3 days
      ii. Teachers – 3 days
   c. Email
      i. Student – 3 days
      ii. Teacher – 3 days
   d. Classroom Environment
Tegan Hatch  
5/6/2014  
Systems Analysis Final Project  
Creative Arts Charter School

i. Student – 1 week  
ii. Teacher – 1 week

e. Grades  
i. Student – 4 days  
ii. Teacher – 4 days  
iii. Parent – 4 days

f. Course Catalogue – 3 days  
g. Course Selection – 4 days  
h. Support/Troubleshooting Catalogue – 3 days  
i. Hardware/Software Manuals Catalogue – 3 days  
j. Web Site/Database Interaction Tests – 1 week

6. Hardware Team  
a. Order Server, Student, and Teacher Hardware and Software – 1 week  
i. Submit Shipping Schedule to Documentation Team  
b. Setup Small Test Server – 3 days  
i. Submit Spec Sheet to Documentation Team  
c. Assist in Database, Website Testing, and System Testing (during those times)  
d. Prepare User Manuals for Network and Hardware – 4 weeks  
e. Install Disk Image on Test Group 1 – 1 week  
i. During Further Test Stages  
1. Image Test Group 2 – 1 week  
2. Image Remaining – 2 weeks

7. Documentation Team  
a. Done as Needed  
i. Approve Hardware Acquisition  
ii. Approve Web Designs  
iii. Approve Database Test Results  
iv. Approve Software Designs  
v. Approve First Software Test Parameters  
vi. Approve Software Test Results  
vii. Schedule First Evaluation  
1. Analyze results 1 week after appointment  
viii. Get User Test Approval From Management  
b. Oversee User Test 1  
i. Manage Maintenance Requests and Patch Releases  
ii. Schedule User Evaluation  
1. Analyze Test Group 1 Evaluation  
c. User Test 2  
i. Implement Patches Prior to Test Start  
ii. Prepare User Test Group 2 for Implementation
iii. Oversee User Test 2
iv. Manage Maintenance Requests and Patch Releases
v. Schedule User Evaluation
   1. Analyze Evaluation
d. Remaining Users Implementation
   i. Implement Patches Prior to Final Release
   ii. Prepare Remaining Users for Implementation
   iii. Manage Maintenance Requests and Patch Releases
   iv. Schedule User Evaluation
      1. Analyze User Evaluation
e. Prepare Final Report For Management

On this schedule, the distribution of the system to the first test group will be ready by August 28th of 2014. This estimate accounts for weekends and holidays. During user test phases, the three development teams will be performing maintenance procedures, supervised by the documentation team.

All documents relating to this system have been attached.
Development Method

I would take an object-oriented approach to development because of the different, modular parts that build the system. Since the system is designed to be modular, the object-oriented method is the logical choice.

Dealing with Security

- Server-side firewall protection
- Pre-installed anti-virus software on student and teacher computers
- Password security suggestions for students, teachers and parents
- Anti-virus software offered at low price to parents
- Wi-Fi security suggestions and tutorials for student’s home internet connection