

Meeting Minutes

Electronic Voting System

Group C

Pádraig Doheny,

Adrian Duffy,

David Mills,

Stephen Morrissey,

Brian Twomey.

First meeting

16th Oct 03

Thurs 4:30 pm

All members present

Today we had our first meeting in the student centre's function hall. Everyone's heads were full of questions and we needed to sort out some sort of structure for the coming year, results planning, meeting times, company organisation and other details of the project on the whole.

Main points put forward at the meeting:

- a) We decided that with regards to organisation we would have a flat structure. We decided that this was best because if in the event of any failures or discrepancies, responsibility is shared among all members as opposed to just one if things don't go according to plan. This also gives every one the chance to put equal input into the project.
- b) We decided that Brian would take the minutes at the meetings. This would simply involve writing up the main points that were discussed at each meeting.
- c) We decided that we should try to meet at least twice, on Mondays after the CS3000 lecture at 3pm, and on Thursdays at 2pm. This would give us a chance to make an agenda for the week at the Monday meeting, and a chance to discuss our weekly progress on the Thursday.

Discussion

Steve and Dave had a lengthy discussion about the voting system in general and about the votes would be recorded. Pádraig said that we would have to do research on the various aspects of the project. Adrian added that at the next meeting we should each take aspects to do some research on.

Second Meeting

23rd Oct 03

Thurs 2pm

All members present.

We were supposed to meet the Monday at the same week, but due to Pádraig, Adrian and Steve having to play a soccer match on that Monday the meeting was cancelled. We again scheduled our meeting for the student centre.

Main points put forward at the meeting:

Firstly we discussed the problems with meeting times. Due to the hectic week schedule we agreed that instead of having meetings on a Monday at a specific time (3pm) we would decide when to have our first meeting of the week after the CS3000 lectures as we had to cater for everybody's timetable.

We had a long discussion on various aspects of the projects. We decided that over the weekend everyone would do some basic research on topics which caused confusion. We also thought that it would be a good idea to do a market research survey to establish the user's interests and requirements in such an electronic voting system, as user and client requirements were currently being discussed at the lectures.

Here are the topics for research and the person who would research each topic. Once each topic was researched, each member would bring an informal/verbal report to group at the next meeting.

Member	Job Assigned
David	Research how the current voting system works i.e., the voters role, the government's role, in counting ballots.
Brian	Create survey sheet and carry out the survey.
Steve	Research various database languages so that people could vote from home via a webpage (in case this would be a requirement – we were still unsure).
Adrian	Research previous e-vote systems, problems they had and whether they succeeded or failed.
Pádraig	Research of documentation such as the project management plan and software quantity plan using the CS3000 website.

We also decided that at all later meetings, the minutes from the previous meetings would be read aloud to the entire present group.

Third Meeting

29th Oct 03

Wed 2pm

Today we had our third meeting in the student centre. After everyone doing their own research we felt it was time to bring the research to the fore.

Main points put forward at the meeting:

Brian read out the minutes from the minutes before. He brought forward the survey which he prepared and presented it to the group. We discussed some things we should add to make it more suitable for the people who would fill it in. He said he would mail it to the group, and each member would print out copies and hand them around to be filled in.

Next, we asked David to inform us of what he found out about the current voting systems. Pádraig asked him about the registry and then put forward a point of voters logging on to the system using their voters id(registered id) and a pin number only known by the voter. It was decided that we would need to review this point in more detail in the detailed design phase. The fact that David had done some research on this made our goals a lot clearer.

Adrian collated a large report on other electronic voting systems using the internet. He was able to tell us the areas in which such systems failed(security being a major issue), and the areas in which they excelled. This is also something for us to utilise when the design process was in progress.

Steve researched database languages. It was already obvious that we would require a large voting system. He asked several people for advise (i.e.: people in our course, lecturers and fourth year cs students, even employees of companies) and proposed that PHP was recommended on many occasions as an easy to learn web based DML language that was free. Pádraig researched the various documentation required for such a project. He said that we should get involved in the project management plan right away, but before we do that, we should consider the requirements process. He said that we should have an appendix in the project management plan for the two types of requirements for such a system. They are functional requirements and data requirements. He also told us about the software quality assurance plan (SQAP), which ensures our code meets high standards, through types of testing such as black box testing and white box testing. But before those plans and designs could be laid down, he said it was important to decide on the requirements of a large project.

For the next meeting:

We decided that everyone should think of functional and data requirements for the project, using the online lecture notes as a reference to go by for the requirements process. Then at the next meeting we should have a clearer view of what the system needs and what the user needs. We decided that at our next meeting we should have our ideas about requirements organised, at which point we could initiate documentation of the PMP. Steve asked if the PMP should be given to people in sections. We agreed that the typing of the different sections could be typed up by different individuals, but the planning itself would have to be done so that everyone was on common ground with regards to dates of phase initiation/completion, etc.

Fourth Meeting

3rd Nov 03

Monday 3pm

All members present.

We all brought forth their ideas of what requirements were necessary. Brian & Adrian brought requirements that other electronic voting systems had used when setting up an electronic voting system.

Main points put forward at the meeting:

- a) The first thing we had done today was discuss the requirements we had each written down. We pooled all of our requirements together and looked at one another's; we then completed a list of the most significant requirements (with David writing). Pádraig will then type them up and include them in the appendix of the PMP.
- b) We had a copy of the PMP template from the CS3000 website and wrote our introduction.
- c) Once we finished writing the introduction it was getting late we would need more time to write the PMP in proper detail.

We decided to meet on Wednesday at 2pm in the student centre.

Fifth Meeting

5th Nov 03

Wed 2pm

All members are present.

Brian read minutes from previous meeting.

Main points put forward at the meeting:

- a) With David doing the writing we completed and reviewed the introduction of the PMP. We began to write the proceeding sections of the PMP using the CS3000 template as a guide.
- b) Some sections caused a lot of haggling over dates on which each phase should begin and end. With the prospect of a group meeting with Dr. Morrison some time in December, we had to make sure that we planned everything correctly.
- c) Some members of the group were anxious about coding before Christmas (or at least before the Presentation) and some were anxious about staying in college over weekends, which caused a heated argument.
- d) We decided to that the main thing to get done before the presentation was extensive planning of each individual phase. Clearly breaking up our time this way would give us a clearer understanding of what was going ahead and when. Everything else we would get done before this would be a bonus.
- e) We all agree to forward any appropriate typed up documentation we have to Adrian. David has already been given responsibility to type up the PMP and will forward this to Adrian.
- f) Brian confirms that the questionnaires have been sent out and some have been returned. Steve will receive the completed questionnaires and calculate the results. We decide to include these results in the presentation.

For the next meeting:

By the end of the meeting we had completed up to the end of section 3 in the PMP. We would continue with the PMP the following meeting.

We aimed to have the design phase started by Christmas and then start the coding after that. Brian will book the Christmas Presentation preferably for Friday 12th December

Sixth Meeting

13th Nov 03

Thurs 2pm

All members present (Adrian arrived late as he had a placement interview with Motorola)

Today our main objective is to have completed by the end:

Sections 4, 5, 6 of the PMP.

Brian read minutes from previous meeting.

Main points put forward at the meeting:

- a) Brian confirms the Christmas presentation has been booked for Friday 12th December at 14.00.
- b) We all brought back the completed surveys and gave them to Steve.
- c) The completed list of requirements which Pádraig has formed has been included in the appendix. We will need to analyse these again in designing the system in order to ensure all the demands are met.
- d) With the above done we set about writing the planning definition phase and the planning design phase. Doing this really brought home how the project would proceed plus it gave a logical definition to the scope of the series of events for the future.
- e) Everyone was glad that we had agreed to do this section of the documentation in unison. With time running out David said that he would type up today work at home.
- f) We had previously planned that Global Realisation would take place after Christmas and finish before the end of February, so it was pretty obvious that would go into that section. Pádraig confirmed that he would produce the SQAP for the next meeting.

For the Next Meeting:

With the planning phase more or less complete we hoped to get on to the design phase as soon as possible. We knew that the PMP was not in a reasonable condition yet, as some things would have to be changed on an ongoing basis with the progression of the project.

Seventh Meeting

19th Nov 03

Wed 2pm

All members present. Brian had to leave early for a lecture at 3pm

Brian read minutes from previous meeting.

Main points put forward at the meeting:

- a) Pádraig showed us the final SQAP for inclusion in the PMP. He said that he would e-mail it to Dave then he could put it into the final PMP.
- b) David said that it was time to start preparing for the presentation. We knew that we would have to do a power point presentation. Adrian said that he would undertake that job as he had some prior knowledge in using PowerPoint.
- c) We all agreed that the questionnaire results and conclusions would go into the presentation. Steve and Adrian decided to work together out of class on that.
- d) In our PMP we had said that we would start work on the design phase on the 27th of November. We felt that to reduce the amount of time spent on designing, we should all go home and individually think of how the system should be designed, then pool all of our ideas together at the next meeting and hopefully design the best possible solution, with the requirements in mind.

For the Next Meeting:

For the next day everyone should have ideas on what our system should do, how it would do it, and how we would ensure that all the requirements were being met.

Eighth Meeting

1 Dec 03

Mon 3pm

All members present.

Brian read minutes from previous meeting. Today's objective was to reach common ground on how to design the system

Discussions and Advancements

- a) The first thing we discussed was our failing to meet the previous week. Some members of the group were quite angry that we had let a whole week pass without doing any work whatsoever.
- b) Everyone produced their ideas on paper. Pádraig said that before we should go any further we should keep a copy of our requirements close at hand while doing the design so that we would guarantee the designs integrity.
- c) First of all we had a discussion on how we would implement the current voting system. Steve initialised a conversation about voting at a booth. We had a discussion about how to we would cater for these. After a long debate agreed that we would design an online web-based voting system, and people who wanted to vote at the booths would also vote via a webpage. It was agreed that this would be problematic as booths would need internet access, however it was established that this was the best solution.
- d) Pádraig said that the voting system would need some sort of setup programme. He had sketched ideas on paper. He said the setup GUI would have to do the work of creating the databases tables so that we could do the following things:
 - record votes
 - set up candidates for each constituency
 - setup new constituencies etc.
- e) We also had to tackle the problem of network security. Today no one has any ideas. Should we encrypt the database inserts, updates and questions?
And how do we go about doing that?

For the Next Meeting:

Adrian said that we would have to design the databases in more detail the next day. That would be the next major step. We all agreed that we should design it in unison as everyone would involved with the coding would be involved with the database in some way.

Ninth Meeting 9th Dec 03 Tuesday 2pm Student Centre

All members present except Brian. I (Pádraig) took the minutes for today.

Reason for meeting:

Firstly, we had to discuss some overhanging issues regarding the presentation to Dr. Morrison on Friday. Adrian said that he was almost finished his PowerPoint presentation. As we had reached the design phase, we thought that it would be good if we had something solid to show Dr. Morrison on Friday, for instance an E.R. diagram of how our database would be conceptually conceived and flow charts of the webpage would appear.

Discussions and Advancements

Today, with me scribbling on a page, we did a mock up flow chart of how our website should work. When we had all agreed its basic structure, Dave and Steve got into a long discussion about security. Steve said that “voters” tuples should be deleted from the database once they have logged in, as opposed to when they log out. He said that this was a serious security issue and that we must prevent people viewing voter information. I personally disagreed, as this meant that voters could log in once and only once, and if their system crashed they could not log in again. We could not come to any conclusion. It would ultimately fall on Steve’s shoulders as he had already asked the group if he could design it. I told him that he would have to keep in mind all the requirements we had already specified in our Requirements Documentation, with regards to voters rights, and information security. We agreed that it was something to discuss with Dr. Morrison on Friday. I said that I would use the Together 6 program in the lab to draw a professional representation of the flowchart and that I would send it to Adrian via e-mail so that he could add it to his PowerPoint file.

At the last meeting, everyone was told to come up with ideas on how to design the database. We knew we had to suit every developer involved from GUI designers to webpage designers, so the DB design would need to be spot on. Dave already had ideas on how to implement it. We started by letting everyone draw out their ideas on paper. Then we discussed each idea. We came to similar conclusions on how to record most data, for example referendum results, but implementing the proportional representation idea was most difficult. Dave had a very efficient idea: instead of holding each vote in a table, we could implement the system by incrementing tuples in the table, depending on the preferences on each ballot sheet. He won everyone’s confidence except mine. My argument was that this type of table design, while possible, was not feasible given the time limit on the project and the complexity of the design.

Conclusions

We decided that we would meet again on Thursday to get ready for the presentation. We would also need to discuss the database design again, as we were now all unsure as to what design decisions we should make. Plus we would have to get Brian up to date as he missed the last meeting.

Tenth Meeting

11th Dec 03

Thursday 5 pm

All members present.

Pádraig read out the minutes from the last meeting then gave them to me.

We met today to get ready for the presentation to Dr. Morrison.

Discussions and Advancements

Today we discussed about all the things we had prepared for the presentation. I have got most of the minutes typed up. The SQAP is finished and ready. Dave has put the final touches on the PMP so that too looks good. Our Requirements Document is completed and ready also. Last night Adrian sent around his PowerPoint presentation with Pádraig flowchart included. It doesn't have an E.R. diagram, which was still understandable as we are still quite unsure about its design.

With all that ready we got down to discussing what we would like to ask Dr. Morrison at the presentation. Steve said we should ask him about network security and how much detail we need.

With regards to our database, Dave said that he had drawn up ideas using Microsoft Word and put them into an Appendix of the PMP as possible design solutions. Steve had a good idea about the design. He said that we could get one of the fourth years to help us out. Andrew Mullins worked in Core Design for his third year work experience, and most of his work involved database management. Steve said that he could give us some tips on what way to go about storing or information.

Conclusions

I think everyone in the group is quietly confident about tomorrow. We have put a lot of time into our Project Management plan, and so far we have stuck to it. We are all aware of the system we want to create, and should be able to discuss anything that we have written down in detail. I just hope we get the detailed design phase finished on time, because at the moment there doesn't seem to be much productivity on that front.

Eleventh Meeting 12th Dec 03 Friday, after our presentation.

Today we had our presentation with Doctor Morrison in the Computer Science department of the Kane Science building. This meeting was not as formal as our other meetings, in fact it was just a discussion we had after the presentation about how the presentation went. The reason I am recording this is to take note of the positives and negatives that the group as a whole should take away from the presentation, and the opinions and ideas of the group given the day's course of events. The mood was quite light as we thought we had done ok.

How the meeting went:

Doctor Morrison was approximately one hour late, which really made everyone even more anxious beforehand. Once he finally did arrive, he took our percentages down on paper (we all had originally decided on 20% each), and then we began with the slide show. Dave talked him through it telling him about our survey results.

When we got to the requirements section he halted the slide show to take a look at our requirements documentation. He said that we had gone astray in this department. His exact words were that “you couldn't hand it to a programmer and ask him to design a system based on this.” He said that it required more detail, and that we had completely misunderstood the function of the “fit criteria” parts.

That said the next thing on the PowerPoint presentation was the flow chart. This led to a long discussion about how to solve the “log in” problem that we were having. Should a user be deleted from the database once they have logged in, or should it be deleted once a user had voted? Should it be deleted at all? Should we just set a Boolean value to show if a person has voted? Doctor Morrison said that this showed that we were thinking and in tune with what the project was about.

At the end of the presentation Pádraig asked him what should our next step be, in order to develop the project further, and what direction should we now go in. I can't remember exactly what he said because it was long, but I remember him saying that the first thing we need to do is take a step back and get the Requirements document in ship-shape before we get too deep into the design, because the design depends largely on the requirements.

Positives

Doctor Morrison seems to think that we are going in the correct direction
He said that we are thinking about the problems in hand and knows that we are sticking to our PMP.

Negatives

We need to review our Requirements documentation. We need to put it into a format that a Programming Professional should be able to read and understand.

Twelfth Meeting

16th Dec 03

Tuesday 2am

All members present.

Reasons for meeting

We came together today to make an informed review and update to our Requirements documentation. I didn't have the minutes from the last day written out in a formal manner yet, so we began today by discussing Friday's presentation among ourselves. It was the general view that we could go no further in this project without doing a better job on this specific document.

Requirements

Last night I printed off the sample requirements document on Dr. Morrison's website, but forgot them today. Pádraig and I made a dash to the Library to print it off again. We were hoping to use this as a template for our own. When we got back we began looking at introduction section, the section titled "System Constraints".

We flicked through the section and decided what parts were relevant to us: we chose to do write the first three. We left out the bit on Naming Conventions and Definitions because we thought most of the terms that were involved would be common knowledge. Pádraig said we should include the section on Naming Conventions and Definitions, and define some things like "quota" and "electorate", and "Proportional Representation". However we left it out in the end because we thought most of the terms that were involved would be common knowledge.

The first section was system goals. With Dave writing, we discussed the overall goals, the purpose of having these goals, and how we would try to ensure their achievement (Fit Criteria). The Clients and Users sections were fairly strait forward, but we did have a bit of debate about some ambiguous issues. Is it required that we the system should be usable by disabled people, blind people, or non-English speaking people? Similarly who is the client, the Irish Government, or any Country's government? We decided that we would enter all things that seemed necessary, even if they are less achievable than the obvious ones, for example Adrian said that we would need to involve sound if the system was to be used by blind people – so catering for blind people may not be possible, but still counts as a requirement. I think this idea permeated through all the things that we would later write down.

We had a lot of trouble when we got to the Functional and Data Requirements section. I think the reason we got confused here was because no one had a clear idea of the difference between Functional and Non Functional requirements. So Steve suggested that we would write all the requirements we could think of (and all the requirements we had previously defined) down on paper, then determine in which section each one should be placed. This worked a treat.

Outcome

Next someone had to go to the trouble of typing it up. To save time Steve and Adrian were given the task of typing our requirements into a formal document.

Next meeting

We conformed that the Requirements Document would need to be ready before the Christmas break, so the group encouraged Adrian and Steve to have the finished document ready for as soon as possible. They said that they would be in the lab later typing it up. Steve asked Pádraig to forward on the old copy, so that he could use the section headers in the new document.

We then had a discussion on our design. Steve said he would be asking Andrew Mullins to sit in on our next meeting, so we could get some solid ideas about how to design our database.

Thirteenth Meeting

18th Dec 03

Wednesday 5pm

All members present.

I, Brian read minutes from previous meeting.

Motives:

We are just about to leave college for the Christmas break. We had a vague idea of what work has to be done because we had discussed design options in previous meetings. However we felt that it was time to start designing things in more detail. Today we invited Andrew Mullins to sit in at our meeting and give us advice on designing an optimal database. We finally had a “completed” requirements document. Adrian and Steve had typed it up and e-mailed it to the group.

We felt that if we all knew what was required of the system, we could all code individual parts more efficiently. Hence we came together to establish what software we were required to write, and to designate jobs to individuals depending on their specialist knowledge, for example, Dave doesn't study the database module in our course, so it would be improper to assign him a database management role.

Breakdown of jobs

Everyone agreed that we should make the system as flexible as possible. We decided to think of the problem from the point of two main users. They are,

a) Registered Voters: people who would use the system to cast their votes in a referendum, general, or presidential election.

b) Government officials – who should be allowed to say what referendums are debated on a specific date, what constituencies exist in General Elections, What candidates exist in each constituency etc.

We decided that the system should be so flexible that it should be possible to have all three election types (Referendums, General, and Presidential) all on the same day, depending on the Governments needs at that time.

Next, we had to decide what software content would be needed to achieve the above. Here are the things we think we need:

A GUI for the Government official to input his data. This should only be used by privileged users. The package required would need GUIs and handlers.

The underlying data layer which would interact with the database through listeners, executed commands generated by the GUI components.

A web-interface through which the registered voters should cast their votes.

It was already specified that java would be used to program the GUI, handlers and data layer. PHP and JavaScript would be used to implement the web page.

Assignment of jobs

We had discussed job assignments before, depending on people's preferences, but had never done so formally. Steve and Adrian had been working on the UCC Frisbee club webpage for the last two years, so they said that they would work on that together.

Of the three people left, Pádraig and I being the only ones studying databases, one of us would have to implement the data layer. Pádraig said that he would take that job, as he had recently spent a lot of time studying JDBC in the CS3040 module.

He would also be responsible for generating the results. Myself and Dave would tackle the GUIs and appropriate handlers between us.

With jobs assigned to everyone we could research and start coding during the break... but first everyone needed to know the solid design of the database.

Final design of the database

We showed Andrew what we had come up with so far. He basically told us to choose the option of recording all votes as opposed to choosing the option of updating integers. His reason was as follows:

The efficient way was too hard to implement.

We could create views to make conceptual tables of what we want as opposed to hard coding difficult tables.

We could use SQL queries to get the results when adding up and transferring votes.

Conclusions

Pádraig said that he would use Together 6 to make a formal ER diagram of the database design. He said that this program had a function that could automatically generate the DDL (data definition language). He said he would work at it tonight and then send e-mails to the group, so that everyone could use them for reference when they were writing their code over the holidays.

Next Meeting

We decided that we should have our next meeting the day we come back after the break. This would give us all a chance to evaluate our work and status. We would have our meeting in the student centre after the CS3000 lecture that Monday.

Fourteenth Meeting

5th Jan 04

Monday 4pm

All members present.

I read out the minutes from the last meeting.

First day back

Today was our first day back at college since before Christmas. We planned this meeting so that we could confer with each other about what we had done over the Christmas holidays.

Discussions

The first thing we talked about was setting up a database. Adrian and Steve said they needed this so that they could test out their code. Adrian had already asked other students in our class about how to set it up. He said it can be done at the CS helpdesk in the Kane building. He said he would get around to setting it up later today.

Dave asked Pádraig about setting up an interface for his data layer. Pádraig said he had already started work on it, and would type up the interface with comments later that day.

Making a “javadoc” API would be a good idea, as me and Dave would be using an implementation of the interface to interact with the database.

Pádraig said that we should start to keep an activity list of all the things we would do during the Realization phase. We could keep to the format on the CS3000 page if we liked however, it would be important to keep track of every detail.

Next Meeting

Dave suggested that we would only need to have formal meetings once a week from now on, as most of our time would be spent writing, coding and debugging. Everyone agreed. As we would be meeting in the labs we could record our ad-hoc meetings on our daily activity list. From now on we would meet on Mondays, at the same time and have more meetings during the week if we needed to put ideas or opinions to the group.

Fifteenth Meeting

12th Jan 04

Monday 4pm

All members present.

I read the minutes from the last meeting.

Discussion

Once everyone arrived we talked about what we had done in the last week. Pádraig had drawn up his interface. Steve and Adrian were getting lots of work done with regards to learning PHP. Dave and I had drawn mock GUIs and had printed screen shots on paper.

For those of us doing CS3040, there is a databases project due on the 21st of this month. Not only that but Pádraig, Adrian and Steve have to do networking labs on Tuesdays and Thursdays, and as the labs begin to get more excruciating, the voting system project is beginning to suffer. Those of us doing databases are finding that it is an uphill struggle to keep up with the work load.

Advancements

With our mock GUIs drawn up both Dave and I had asked Pádraig to put new methods into the interface. Basically these are getters and setters that would allow us to update the GUIs appropriately; I thought it would be handy to have a “getQuota()” method, which would return the quota of votes required in a given constituency. Dave desired methods that would return a Vector or List of all the candidates for a given constituency, etc. He also required a method to get a candidate’s Government Party, which I would also be using.

Adrian and Steve said that they had divided their work into two sections. One was concerned with the Steve would be concerned with the log in page, and the parts that used PHP to send and receive data from the database. Adrian on the other hand would be using JavaScript to setup the ballot page with forms containing the necessary buttons and tick boxes.

Next Meeting

Next Monday would be our next meeting. Pádraig said that should have most of the JDBC implemented by then as he was staying in Cork next weekend.

Sixteenth Meeting

19th Jan 04

Monday 4pm

All members present. Dave didn't arrive until half four. I read the minutes from the last meeting in the mean time.

I read the minutes from the last meeting. Discussion arises about the implementation of Pádraig interface. He said that it should now be possible to create all the tables and enter constituencies, candidates and referendums. He said that he also had methods written to remove them. He said that once he had debugged the code he would send on his data layer file to us via e-mail. He said that he hadn't had a chance to implement the extra methods yet.

Discussions

I asked Adrian and how the webpage was going. He said things were hectic this week. The database assignment for CS3040 was almost due, and that himself Steve, and Pádraig were having a lot of trouble with it. He also said that he and Steve had a mock log in page completed and working, using mock tables that they created themselves.

When Dave arrived he said that he was having some trouble writing the handlers for the GUIs. I was having some trouble myself. Personally I didn't know how all the GUIs would interact. Dave said he had some good ideas though.

Just before we finished our discussion on handlers, Pádraig told us that his class definition would be throwing some exceptions (which he defined himself) when specific things were going wrong within the database e.g. if a person was to try to input a constituency that was already in the database, a user exception would be thrown up, containing a String Object, saying that there was a primary key violation, but in more understandable terms. He showed Dave and I how to catch such exceptions.

Next Meeting

I think the general feeling is one of anxiety as time is beginning to run out and we don't have a lot to show for it. Someone said today that we had stated in our PMP that our testing would be beginning on the 21st of January. That's defiantly not going to be the case. No one thought that it would be a good idea to start setting deadlines for completion of specific tasks. I personally think this would be a good idea. Then again, it's hard to suit everyone. We decided that from now on we would have a meeting when it suited us, as opposed to setting specific times and dates. This would facilitate more communication on design details.

Seventeenth Meeting

26th Jan 04

Monday 6.30pm

All members present except Dave.

Reasons for meeting

We met today to discuss the design faults we were having with our database and our project as a whole. Steve, Adrian and Pádraig wanted to come to some compromise about columns in the database, while I wanted to discuss the generation of the election results with Pádraig.

Discussions

Steve was questioned Pádraig about the login page. He wanted to know if the users needed to specify their constituency when they were logging onto the webpage. He said no, there was no need. He said that once a person specifies their Register Id then their constituency would be determined by checking the rows in the database. That's one problem solved.

Adrian had originally thought that it would be a nice touch if Voters could click on a map before logging on, and that would determine their constituency. However he said there was no need to tackle that problem anymore. He has also come up with various designs for the ballot page. Everyone in the group agreed that we should leave the design up to him. He is aware that he cannot influence a voter to vote for any political party, so he knows the limits of what he has to do.

Next meeting

The fact that Dave wasn't present today means that we will have to meet again soon. For the time being we all have a load of things to be doing. Even so, it would be better if Dave had made the meeting today. Then we wouldn't have to go to the trouble of organising another meeting.

Eighteenth Meeting

29th Jan 04

Thursday 2pm

All members present. I didn't have the minutes from the last day at hand so I couldn't read them out.

Main points of discussion

The first thing we talked about was security issues. We talked about security that was necessary at three parts of or system:

Keeping the voters credentials private: we had originally decided to store the registered voters in a file, which would have a specific format. The entries in the file could then be inputted into the "Voter" table in the database through a method that Pádraig had written. The problem was that the file was a text file, and the details in the database were not encrypted, so someone could read the text file or the database and find out valuable information.

Allowing only certain users to use the setup GUI and interact with the database: The setup program that Dave designed would need some sort of log in program so that only certain users could edit elections.

Encrypting votes: Steve said that he could read and write encrypted information using predefined PHP encryption algorithms. However this would not be any use if the people programming on the setup utility could not do the same.

When we had all these issues scribbled on paper, we got around to trying to solve them:

Dave said he would research Encryption in java.

Dave said that if time permitted he would write a log in program.

Pádraig said that he would see if he could read and write a binary file instead of a text file. He said that this might be a bad idea though, because people can register to vote at any time of the year. Government officials would then need to edit this file using a text editor and as binary files are unreadable when opened with a text editor we would need to write another program to read and write to a binary file, which itself could only be used by certain government officials.

Conclusions

We unanimously decided that time permitting we would try to tackle these issues. We felt that as time was running out we would sacrifice these in order to get a running model executing as soon as possible.

Nineteenth Meeting

4th Feb 04

Thursday 10.00am

All members present (eventually). Both Dave and I arrived at the student centre just after 10 o'clock. Pádraig arrived at 10.30; Steve was a few minutes later. There was still no sign of Adrian. He eventually arrived at about half eleven.

Reasons for meeting

We came together today to do the following things:

Try and set dates for completion of our individual tasks.

Try and set a date for software configuration.

Set a date for testing the complete system.

Assign documentation jobs.

Ultimately decide on a date for the presentation of our work.

Decisions

We had to review what documentation was left to do, and assign people to do it. Adrian and Steve will draw up user manuals for the Website, Dave and Brian would do the same for the setup utility. We decided that we would all write parts of the detailed design phase appendix depending on the code we wrote. Pádraig would write the realisation phase appendix. We decided that we would complete the Testing Documentation on the final day of testing (some of it would need to be typed before that e.g. we would need to decide what sections there would be, what kinds of tests etc.). Brian said that he would take that job.

As we are all still making changes to our code we decided that we would not set a date for the presentation until all documentation is complete. We had to have a vote on this one. Adrian and I wanted to set a date in order to give us more free time to study for the exams however we were overruled. The general idea is that we might shoot ourselves in the foot if we set a date and are not finished the documentation by then.

Taking it in turns we each informed the group of our status...were we finished our coding, having trouble in patches, by what date would the sections be complete? At the moment I am having horrendous problems with my resultsGUI. The handlers are pretty much a nightmare. Pádraig is finished one of his class definitions. However it fell on him to generate the results (much to his disapproval), and he is currently having problems in implementing the "Proportional Representation System". He said that he can compute the results for Presidential elections and Referendums, next to perfectly, but for general elections, he says his program gives him unfair results in the event of a draw or in the event when a candidate is elected or eliminated and votes must be transferred. However he says that he has come up with the fairest system he can. Adrian and Steve are having JavaScript errors, and so they don't know when they will be finished. Dave has more or less finished all his code.

Everyone agreed that they should be finished next Tuesday. Then we could begin testing that Wednesday given all code is realized in the mean time.

Twentieth Meeting

12th Feb 04

Thursday 10.00am

All members present. I (Brian) read out the minutes of the last meeting.

Reasons for meeting

We came together today to do the following things:

To sort out any bugs left in the code through testing thoroughly.

Set a date for the final presentation.

To accumulate all documentation and proof read it.

Decisions

Today we met in the labs and sat around the one computer. We all agreed that testing the project as a whole was the right thing to do. Throughout the testing I found a small bug in his code that he fixed in a short time. Adrian said he wasn't pleased with the presentation of the website and that he would change the layout and basically do up the website as a whole. The voting system worked after that. Dave said it would be a good idea to make a list of areas we would improve on if we were to start again.

We decided to have our presentation next Tuesday. This would give us enough time to ensure that all the documentation was complete and up to the required standard. We still had a bit to do. We decided that we would do as much as we could but given that time was running out before the exams we may have to abandon certain sections e.g. the learning aspect appendix. We accumulated all our documentation so far. I had completed my user manual. So had Dave and we could now put it together. Steve was almost finished his. Pádraig said that he finished his section of the design phase.

This would be our last formal meeting. It was suggested that we all take a copy of all completed code and documentation once the entire project would be complete. Dave suggested that he could use his CD writer to put all the files on CD. We would then have them for reference in the future.