ECSE 501 Object-Oriented-Development

Coursework Two Report

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Contents Page

How and why the actual implementation differs from UML design documentation

Our actual implementation has differed compared to the design documentation that was produced in coursework 1. We planned and designed our windows application using UML's such as use case, sequence diagrams and class diagrams. Differences identified from coursework 1 and actual implementation is when the student first enters the application. Unlike coursework 1 UML design which showed we open a new form, we have implemented a start page where the user is required to enter their course name and select which level they want to proceed to.

Another difference between our actual implementation and design documentation is the number of classes we used. There were 13 classes in the design documentation where as in the actual implementation we have reduced the number of classes to 8 classes. This is because we have used Tab views in our implementation which has reduced the number of classes needed. Furthermore a few of the classes have been put into one class as it makes more sense to do so (for e.g. details of module view and specify module view both come under the create module view)

Another difference between the actual implementation and design documentation was that Tab views to view different modules and the summary which were implemented in the actual design and has not been specified in the design documentation (In the design documentation it shows forms upon forms being opened). The reason for adding tab views in our implementation was that they are good for viewing different aspects of the application such as the different levels for modules. It is also more convenient to the user as they can easily change tabs rather than having forms popping up again and again which would confuse the user.

Another difference between the design documentation and the actual implementation was the number of assignment's that can be added. In the design documentation, the number of assignments added by the user hasn't been specified properly. In order to make the actual implementation realistic, we restricted the number of assignments added by the user to only 4 assessments as the modules for all years only consists of 3 to 4. Restricting assignments to 4 would also make it easier to calculate the overall percentage for the whole module as well as the academic year.

Our actual implementation was also different to the design documentation because there was validation that was included in the implementation which wasn't specified in the design documentation. Validation has been included in many parts of the application such as the start page where the user is required to enter the course name in order to proceed to the next stage. Validation has been implemented in adding module page where the user is required to fill all sections. The actual implementation is also able to identify if there is an existing module in the database so users do not enter any duplicates. Reasons why we included validation throughout the implementation were for error prevention and to prevent the users from entering information which would not be valid in any sense (such as total weighting being over 100% or marks being over 100%).

Another difference we have identified between design documentation and actual implementation is deleting a mark of a module only which was included in the design document but has not been implemented in the application. In the implementation we have added an option to delete a module along with its marks but not deleting just the marks of a module as changing the actual mark is not permitted. However we have implemented a function where the user can enter and view their predicted grades as many times as they want and does not get saved to the database unlike the actual grade.

Other differences identified were the summary view in the design documentation and the actual implementation. The summary view from the UML activity diagram describes the how the overall degree is calculated and user is required to enter their marks in the summary view for level 5 and 6 which calculates the total and gives the average. However in the actual implementation, the marks are added in the Level 4/5/6 view and saved into the database; they are then retrieved from the database and calculated in the summary view for the overall performance. As well as including overall performance for Level 5 and 6 in the design documentation, we have included the overall performance for level 4 as the system can show performance for level 4 students and also warn level 4 students for failing performance.

Another difference between the two was user verification. The actual implementation has more verification compared to the UML document. The UML document only had a few verifications such as deleting a module whereas in the actual implementation we have included detailed verifications such as using colour coding for displaying user performances such as green for pass, red for fail and yellow for referral. Reasons for using colour codes are to make it easier for users to track their progress and will be more aware if they are failing or need to do a referral. Also it makes the software look more professional and provides user feedback.

One more difference between the actual implementation and the UML design documentation is the data held in the tables. In the UML design documentation there was more detail about the classes but only had a few details about the data that will be stored in the database such as the module name and mark. Whereas in the actual implementation, the table contained more data such as module credit value, the number of assessments, the weighting for each component and the total marks. More data fields were required in the actual implementation as they were needed for the summary as well as calculating the overall performance for the user. The implementation had many more factors which were not mentioned in the design documentation.

Another difference between the design documentation and UML documentation is the adding module process. In the design documentation, adding module process described on the sequence diagram only adds the module name and the level. In the actual implementation as well as adding module name and level, we are also able to add other details such as the module code, credit value, assignments and assignment weightings. We implemented it like this as user can fill out all module information on just one form which would make the program more efficient and would make the process of adding a module easier for the user (as they wouldn't need to fill out many forms).

Overall based on our design and analysis, the documentation was able to help us implement all features such as adding, removing modules and calculating the final degree outcome, it also helped as it proved a step by step procedure of how to implement the program. There are many differences between the design documentation and the final implementation and have found out that the implementation was more complex and included more features than the design documentation.

Student Name:	Mohammed Haddad	***Student Id:***	W1384421

State what tasks you carried out in the project.

In this project the tasks that I had carried out included coding majority of the application such as Level 4/Level 5/ Level 6 and summary tab. Another task I had carried out was designing the interface of the system along side my group members and also contributing towards the report of the coursework.

State what you enjoyed and did not enjoy about teamwork.

What I mostly enjoyed about working in a team as there was more ideas gained this way. Everyone had a different approach and we were able to merge them all together. Another thing I enjoyed was that we were able to identify what each member's strength and weaknesses was and allocate tasks according to that. The aspect I did not enjoy about teamwork was that not everyone was available at the same time.

State what you learnt about teamwork.

What I learnt about teamwork was that each team member's view is important to understand and acknowledge. I have also learnt that it is good to have patience with the team members when making a decision becomes difficult.

State what skills you gained/learnt from undertaking the project.

During the process of undertaking this project I have learnt many skills. One of the biggest and most beneficial skills I learnt was to be able to code in C# without having any previous knowledge of it. I am now able to code in C# and fully understand the framework. Another skill I learnt was how to organise the team appropriately, from giving each member tasks to fixing decision issues.

State any strengths about yourself that emerged whilst undertaking the project.

The strengths that have emerged from me whilst undertaking the project included having previous knowledge of SQL databases as I had learnt this in another module (Mobile Application Development). Another strength that emerged was having leadership skills as I was responsible for allocating tasks to the team members.

State any weaknesses about yourself that emerged whilst undertaking the project.

One weakness that had emerged whilst undertaking this project was being under pressure. This caused me to rush a few things at the beginning of the process. Another weakness was that at first I was unaware of how to code in C# but I slowly learnt that and now am able to code in C# very well.

State how you would do things better if you were to undertake the project again.

If I had the chance to undertake this project again then I would make sure I refer back to the design documentation in coursework one as it would've provided me with more knowledge on how to carry out the process of implementation.

Additional general or project specific comments:

I really enjoyed working on this project. It was fun to implement the Grade Performance Application and it turned out to be great.

Student Signature:	***M.Haddad***	***Date:***	***16/05/14***

Student Name:	Rohan Rehman	***Student Id:***	W1413076

State what tasks you carried out in the project.

The main tasks that I have carried out in the main project were to design and implement the start page of the windows application. Along with other group members I also contributed to the design and layout of the summary page.
My other main task was to write a report describing and explaining how the UML documentation differed from the actual implementation as well as creating a reversed engineer
Class diagram.

State what you enjoyed and did not enjoy about teamwork.

What I mostly enjoyed about team was that we were able to identify each other's strengths and weakness as well as looking out for mistakes made by other members and then assisting them. However what I did not enjoy was that it was often difficult planning meetings as other members were busy with other coursework's and exams.

State what you learnt about teamwork.

I learnt that being able allocating tasks to members efficiently and good communication in the team has contributed to a good outcome of the project
Assigning each other with deadlines to ensure targets are met

State what skills you gained/learnt from undertaking the project.

Identifying issues and being able to come up with appropriate solutions.
Searching for other alternatives.
Gained more skills in SQL databases using C#

State any strengths about yourself that emerged whilst undertaking the project.

Using the SQL database in C# was really straight forward as I have SQL database in Android application projects using Java which is fairly similar.

State any weaknesses about yourself that emerged whilst undertaking the project.

I often struggled a little with using visual studio and C# to create a high quality windows application as I was new to this programming language and needed assistance from other team members who had more understanding of it.
Time pressure

State how you would do things better if you were to undertake the project again.

I would carry out more research on windows form applications, databases and tabs as well as practicing and doing additional tutorials on similar examples.
I will constantly refer to the UML documentation produced in CW1 which will be helpful in the implementation.

Additional general or project specific comments:

Student Signature:	***r.rehman***	***Date:***	***16/05/14***

Student Name:	Waqar Malik	Student Id:	W1373571

State which tasks you carried out in the project.

My tasks within the project was to design and code the start page as well as help in the summary page and for some of the requirements for the coursework, I also had to participate in the report and diagrams and shared ideas within the group.

State what you enjoyed and did not enjoy about teamwork.

I enjoyed working together as a team and I enjoyed interacting with each others in my group and enjoyed sharing ideas within the group. I didn't enjoy about team work was sometimes within our team it was difficult to come to a team decision I felt sometimes my idea wasn't considered seriously.

State what you learnt about teamwork.

I learnt about team work that it is very important to attend all meetings and work together as a team and share each other's ideas, also I learnt it if you don't share work out within the team then it can be very difficult to achieve a project. Also I learnt to be more patient because I wasn't a very patient person first and I learnt to carry out more reasonability for my team I done this by helping others within my team for tasks.

State what skills you gained/learnt from undertaking the project.

The skills I gained from undertaking this project is research, time managing, organising skills, using visual studios, comparing cw. This is because I had to do research for my specific tasks I used the world wide web, time management I had to attend all my project meetings to assess how individuals within the group how works is going etc.. I learnt organisational skills because I had to make sure my work is organised e.g. programmes in order etc…

State any strengths about yourself that emerged whilst undertaking the project.

The strengths that emerged from me whilst taking this project was communication and confidence within a team. I wasn't that confident person I use to get quiet nervous while speaking to groups, by working with my OOD group I have gained strengths of communicating and I am more confident when talking to my project group.

State any weaknesses about yourself that emerged whilst undertaking the project.

Time management was a weakness that emerged from me because I was sometimes quiet late for my meetings with the group for our project. Also I need to develop my skills much more in using visual studio got help a lot.

State how you would do things better if you were to undertake the project again.

I would make sure I am on time for my project meetings and also inform the group that I will be late for meetings. I would also make sure that enough research is carried for specific tasks and tell team members if they are on the right track for their work.

Additional general or project specific comments:

It was a very fun project to work with also my group members were very hard working.

Student Signature:	w.malik	Date:	16/05/2014