# Computing Degree Project Proposal

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## Current Modules (and previous modules if Computing or direct entrant)

CO2401 – Software Development

CO2402 – Advanced Programming with C++

CO2403 – Professional Skills

CO2411 – Software Engineering Practices

CO2508 – Computer Security

CO2509 – Mobile Computing

CO2602 – Agile Systems Design

## The Project Title

Switch Up

## Project Context

I plan on making an application for my work place so that colleagues are able to view the rota and be able to shift swap with someone. The place that I would be doing this for would be Tesco Express as they only currently have a paper version.

One of the main reasons why I would like to do this idea is because we have been on paper versions for a really long time, I would like to use the skills that I have learned to make an application to have the rota on. It is important that we schedule our staff as we will need to get rid of the paper versions, “Optimised staff schedules can provide enormous benefits” (Ernst et al., 2004). Another reason for this project is the big problem that we have with the current paper version and that is people shift swapping, now we do not have a problem with people changing shifts as long as they are covered. Now the problem comes with people discuss it on platform such as Facebook to swap shift however, they cannot change the paper version. The way that my project solves this is by having the ability to swap shifts with someone within the application and it would update it on the main rota.

Another problem that occurs is overtime, now the manager will have to text everyone to see who can cover a shift and get some extra work in. The way that this application would help is that the manager could add in overtime on a separate database and the employees can take them if they are free to do that shift. Once they will confirm they can do that shift it will add it to the rota in bold so that the manager will know it is overtime.

Finally, I would like to have an application rota because smartphones are becoming the future, many people are now on their phones and by having this application I would be thinking ahead. Now this project would be on a smart phone and everyone would be able to access this as most people have a smart phone (Wilmer, Sherman and Chein, 2017). It will be future proof as they will not need to have a big update for a while as I would have done the main framework from Tesco.

## Specific Objectives

* The main objective that I would like to get out of the project is to scrap the paper base rota and have it online. This would help everyone as if they needed an update rota on the application and you would be able to view it at anytime
* The outcome of this project would be to have the ability to be able to swap shift with someone and for it to update on the main rota. This would help because the manager will be able to see who is in at what time instead of it being over Facebook and the manger not knowing about it until the last minute.
* The objective I would like achieve would be to give the manager the ability to put over time on the database and it give the employees a notification that there is overtime available for them to get. This would help the manager instead of texting every employee to see whether or not they can do the overtime
* The final objective that I would like to achieve is have the employees give availability and the application would be able to see when people are free to work. So if someone wanted to swap a shift with someone they will be able to see if they were available before swapping a shift .

## Potential Ethical or Legal Issues

* A big legal issue is the fact that I would need everyone’s rota information, not everyone would feel comfortable to share when they are working, the manager will be the only one with that personal information. So what I would need to do is to talk to all the employees and ask them if it was okay for me to see their working hours, I would tell them what I needed it for so that they feel comfortable giving me the information
* As well as this I would also need to consider the age. Not everyone will have a smart phone in Tesco, the way that I would get past this would be to have a tablet or an iPad in the staff room so that when the people who do not have a smart phone can see the rota on the iPad or tablet. We would also need to make sure that everyone is trained well on the application (Cleland, Caldow and Ryan, 2007), this will take some time as the target audience is not specific. Everyone will need to be trained on the application which might take some time from the project.
* The design aspect would also come into this, I would need to make sure that everything on the application is easy to see, I would want everyone to be able to see the buttons and the main reason would be the ability to reach the buttons (Jun Gong, 2004) As it would be on a hand held device I would like to ensure that everyone will be able to reach the buttons that are on the screen.

## Resources

After doing some research about this project idea there is some out there that are similar to the project. One of the big application that did pop up when I was doing my research was Rota Ville (Rotaville.com, 2018), this help the employees to sort their shift out and are able to adjust their shifts to the hours that suit them. It is on many platforms like IOS and Android two of the most popular operating systems. One of the good things about this is that it also has employees availability which shows when the employees are available to work, I could use this in my project as an idea. The way that I would use it is to have each employee to give their availability times to the manager so that they know when the employees can be free to work or do some overtime.

I have also seen that some application make it easy to shift swap with someone (Su, 2018), the application that they use is called shift smart which allow the employees to swap between them. Now this is something that I could get inspiration from, as it is something that I could use in my application.

I have researched into what software I would like to use for this project:

* Xamarin
* Code Over

## Potential Commercial Considerations - Estimated costs and benefits

If this was done commercially I would need to consider any costs that could come from then project. The way that I would put cost on this project would be to have it for a small business first as Tesco Express holds a max of 30 people. I would see if it works well in my workplace first and ensure that it is bug free. Once that is done I would then offer it to business who have 30 employees however, I would not stop their I would make it bigger and have it be up to 500 people. This will allow different business to see have the application and use it. The more employees the more money that the project would make.

The timing of this project will all depends on what business it would be for, the original plan would be to have it for 30 employees. This would at least take me a year or 8 months to complete then I would need to make sure that it is bug free and test it before releasing it out. The feature will include overtime added, swapping shifts and having availability within the application.

## Proposed Approach

The first step would be to decide on which language and which software that I will need to use, with research that should take a week to do and to come up with a decision.

Once that is done then I will need to start getting all the information together to make the application. For example, rota time and everyone’s availability. Then, I will need to start to write up a database to store all the information. A few months.

Have a prototype to be able to see if everything work. Once that is done then have the ability to swap shifts with someone and it work perfectly. Which should take another few months.

If that’s work perfectly then move on to allow overtime and get a notification when the manager puts it up. Another few weeks to do this.

Finally, have the availability written done on the application so that they can see who is busy on what days. A few more months.

# Bibliography

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