

CM0343 - Individual Project - Project 125

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Introduction

The system that I am creating is designed to allow parents of children at a school to book extra-curricular activities for the child to attend after school. Although this system could be used to facilitate the parents of a school, it could also be used in a student setting, where either the parents or the child could book the activity. Also the student could have a profile for others to see what activities they partake in. The student using the system would be a secondary development of the system, as I am currently aiming to create it for the parents use.

The project that I am working on is a technical project that involves more implementation than it does design. I have found that that the best way of designing the system is through a rough prototype and then through trial and error of the implementation of the actual project.

This online booking system is being developed to replace the old fashioned way of signing up to extracurricular activities which is via a hard copy of a signup sheet. This system will replace this method of signing up and allows parents to see where there children are and when. The system is a lot more secure than having hard copies of this sort information and completely prevents data loss.

The three main user types of the system are:

1. The parent of the child attending the school.
2. The instructor running the activity.
3. The administrator of the system at the school.

All of the different user types will experience different benefits from the implementation of the new system. Firstly one of the main aims of the project which also happens to be the main benefit for the parent is the fact that they will know exactly where their child is (children are) after school. This works through the attendance feature of the system as the parent has to register the child as attending beforehand and then the teacher will also take register during the class in order to ensure the child did indeed attend.

Secondly the instructor of the course will be able to see what activities are scheduled and if they are running them. The registering facility would also help her in order to track how many students should be expected to attend the class, allowing the instructor to organise a suitable amount of equipment for example. Also they can set pre-requisites such as "A child would have to have done the beginners tennis course before they can register to take the advanced class", and age limits for certain classes. This would allow them to avoid confusion as to whether or not they have a class to teach and where it was on a particular day, and also stop children turning up that were too young or under capable for the activity.

The administrator would benefit from the implementation of the system as they could now monitor all of the activities from one system. Also it would be easier for them to control all of the activities in

Lastly, the Administrators will be the main user types that manage and maintain the system. From their point of view they are the ones who oversee all activity on the system and help assure all data is kept safe about people using the system and they also govern what happens.

Background

The research that I have conducted is directly concerned with other systems that provide the same or similar functionality that I am aiming to provide the users of my own system.

For the project I had to research into what other online booking systems are currently available online. By doing this research I am able to see what other developers are using for their systems and to see things such as information they record about their users, design of their system and features that they are using to draw people in to purchase it. Below I have researched three online booking systems that I will use after I have completed implementing the system to compare my system against. I will be able to see what I have done in comparison and see if it is better or worse than what other people have developed. I have looked at what information the site seemingly retained about the user, what are the main features that the site offers, the improvements that could be made to the system, and finally a comparison to the other systems that I have found to establish the best features.

Parents Booking

(<http://parents-booking.com>)

Information Retained

By reading through what they have written about their system, the information that is going to be taken is exactly the same what I will be doing with mine, such as:

- Member details – name, contact details, user type
- Activity information – name, teacher taking it, number of people on the activity etc.

I will be taking other information; this is just an example, I have also implemented the user tracking system which I expect they have something similar in place too.

Main Features of System

This system uses a feature that I want to use in mine, in the parents-booking system a parent can make bookings by using a calendar feature where you select different dates.

Improvements

To improve this system I would enable user name and passwords to be set for everyone using the system to make everything secure, this was something that I was going to implement, but seeing this system has definitely confirmed that.

Comparisons

This system is difficult to compare to what I will be developing, there aren't very many things to compare with, and however I have found a couple things that I can use to compare with:

- Post activity information such as number of pupils to attend will be available
- Admins and teachers don't need to worry about signing up via paper
- Parents can book activities

Again, this system is quite different to what I'll be developing, so the comparison may seem very simple.

Online School Booking

(<http://www.onlineschoolbooking.com/>)

Information Retained

This is another school based online booking system, but it is a little different to mine as mine specialises for extracurricular activities whereas this is quite a general booking system, such as exam information, equipment booking. All there is to say about this for now is that it records similar information on the students as to what I will be.

Improvements

I thought the design of this particular system was messy, there is a lot of page content which could be over whelming for people who aren't so familiar with computers and just want something quick and easy, in my system I will be keeping it very clean and cut down, I will only have information that is absolutely critical to whatever the job the user is doing. By having a system like this I think it will improve overall design of the system.

Comparisons

When it comes to evaluating my system, I will compare my system with the components that are used in this system such as:

- Use of combination boxes
- An interactive timetable that is colour co-ordinated.
- Custom made images, this system uses a nice set of images that has given me ideas as to what I can use in mine, such as a spanner and a cog for "Settings"
- Another colour co-ordinated list to view different students, in this system it uses a text box to specify what about the students you want to filter by.

Netmedia Activities Booking System

(<http://www.netmedia.co.uk/pages/activities-booking-system.php>)

Improvements

This is a very good system, there are no improvements that I would make to it, the differences will be that there will be my own features implemented as well that this system doesn't have.

Comparisons

This is a system that I have found online that is similar to what I am going to be developing, what this system does is activity booking inside a school. This will be a system I will be comparing my finished product with. I can compare things such as the different user groups in the system and the rights access that they have.

- All members connected to the system will be able to see activities and times
- Admins will have full control of the system
- A provided time table of the activities
- Parents will always know where their children are
- To increase participation

Languages and Technologies.

For my project I have decided to use the combination of PHP and MySQL, I have researched and looked into an alternative which is *Java Server Pages (JSP)* this is very similar to PHP but uses the Java platform. For a short period of time, I was considering using a combination of the two, but the compatibilities didn't match up. When using a web server such as Apache it runs on port 8080, which is fine for PHP to work on, JSP on the other hand wants to use the same port unless you specify another port where you would effectively have two web servers running concurrently which is far complex and in the end would be pointless as you can do the same with both languages minus the differences. Because that I have experience with PHP and I know this more than I know Java, it was a better idea to use a language I am more comfortable and familiar with. Other than researching what each language does and what is best suited for the project I did decide on PHP being the main language, obviously there will be others involved like HTML, CSS and JavaScript but for the server side scripting it will be PHP. It's a language I'm very fond of and familiar with so I know my way around when I'm using it. Also, when choosing the project it was in the project description that the student is good with PHP. By using PHP I hope to extend my knowledge in the language to engineer advanced scripts inside my system. For the database I have been using MySQL, I have used this database system in the past with previous projects so again I can use my skills here to have a good and well-structured database. I looked in to the possibility of Oracle, I found a lot of information on it and it seemed that other people were also using a PHP and Oracle combination, but I thought it was best to stick with what I'm most familiar with and to extend my knowledge in the area.

I have also researched into what other kinds of online booking systems are currently on the Internet. I have kept my search relevant to the project topic which is schools and I have found a short few available. I also haven't come across a system yet which is like the one I am developing. From what I have looked at I have chosen three online booking systems that I will use at the end of the project to compare against mine. Also, in this document I will be writing how I could improve anything in those booking systems.

Approach

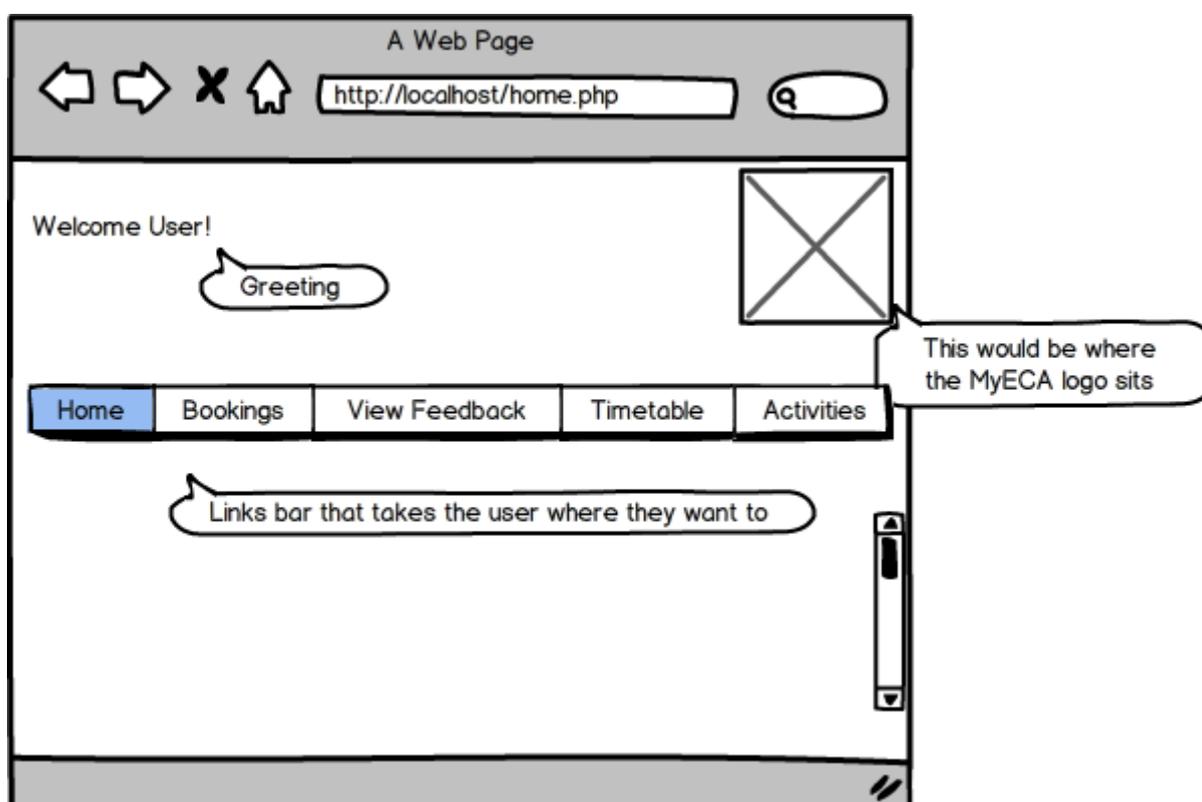
Selected User Types

In the proposed project description, the initial idea was to have three user groups which are:

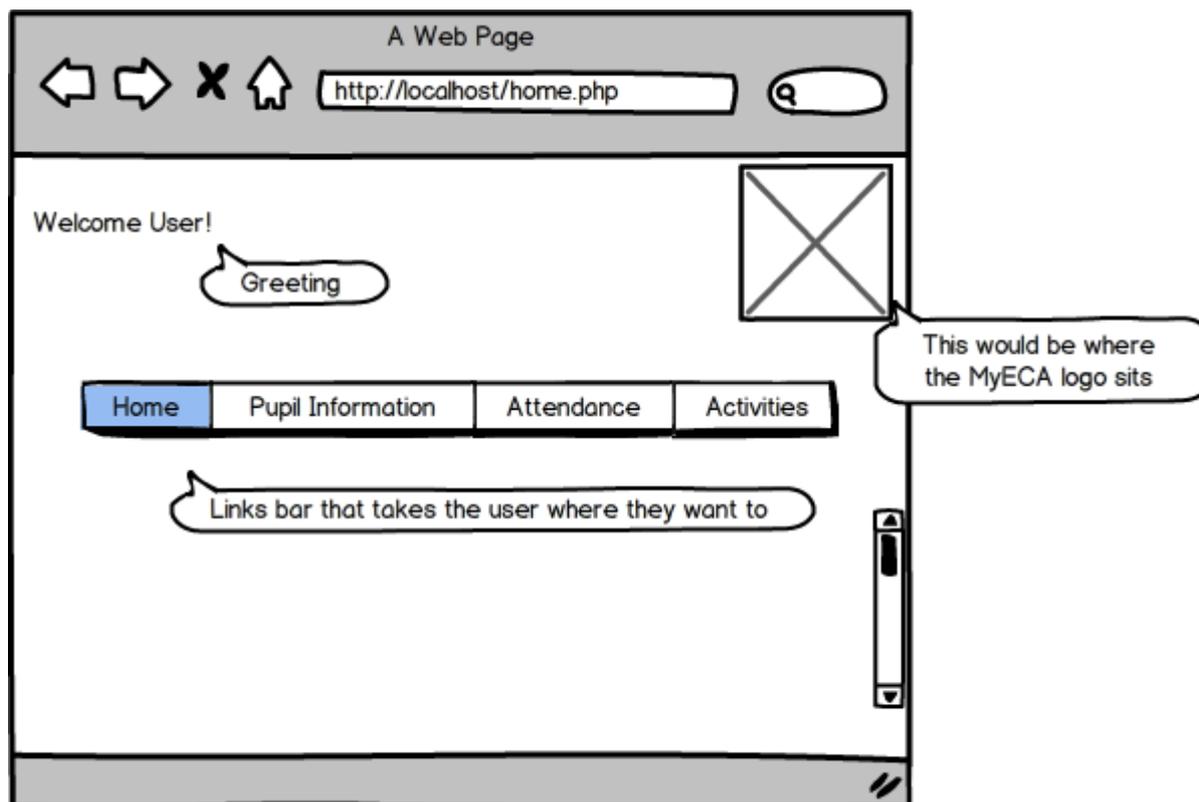
- Administrators
- Instructors
- Parents

These three user groups have all been implemented in some form to the system already and each have their own set of user privileges such as being able to add instructors to the system which would be done by the administrator. Whereas making a booking for an extracurricular activity would be done by a Parent.

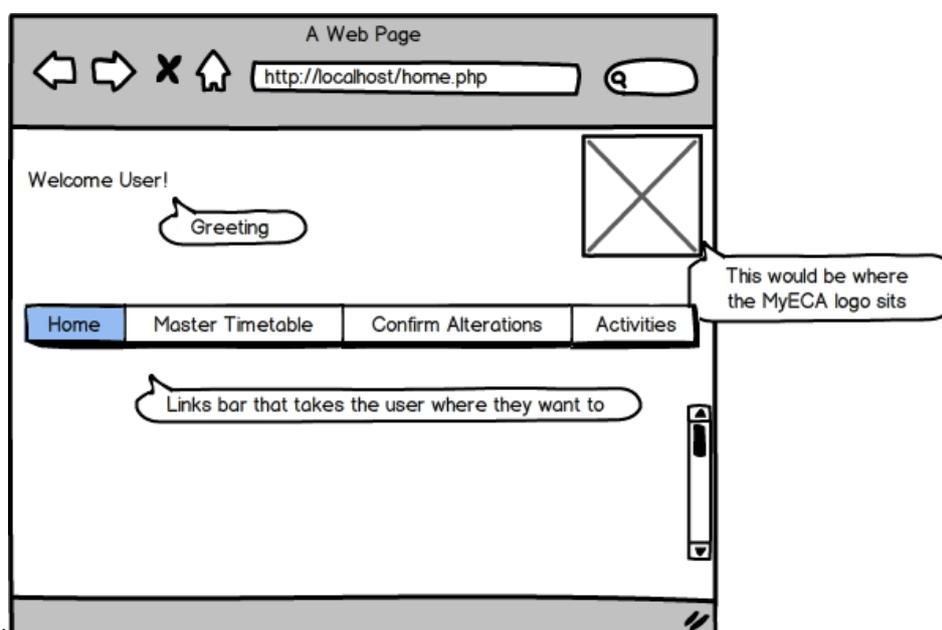
Because of the different user privileges there are effectively different screens for each user group. I will now go into detail about what and why they are like it.



This is what the parents home screen looks like. As you can see they can go to the bookings page, view feedback that an instructor has left, see the time table for the week of activities and view information about activities. This user group doesn't contain information about the booking system because it simply doesn't concern them, all that is important is that they can just see what they really need to do and to make the booking system work.



This is what the screen looks like for an instructor/coach. Like the Parents home page, they can see the home link. However, the instructor can see the option to see pupil information, of course this isn't something that would concern a parent which is why it isn't applicable to them. Also, they can see the activities information option much like the Parent can.



This is the user group which can do everything on the system, they have additional options such as user tracking system, this only concerns them because they are the ones who are running and aim to maintain the system. Like the parent they can see the time table that is applicable for the current week, however the one they have access to is the master time table which shows all activities

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happening the current week for all students instead of for just a particular student. Also, as I mentioned previously instructor has to request pre requisites which must be confirmed by the Administrator, this option is applicable just for the Administrator as they are the only ones who confirm this and obviously it wouldn't be a Parent confirming it.

Languages and Technologies I Will Use

For the project so far I have used an array of different languages, all doing their own different thing to make the system look professional and easy to use. So far I have used HTML and CSS for page content and design, PHP and MYSQL for server side scripting and database management and connectivity. Another language that has been used is jQuery, this uses JavaScript to do interactive functions with content on each web page. These are only but a few of what is left to be incorporated to the system; I will also be incorporating XML for my data access and data storage. Since that I have used XML before. Also using XML I will be able to implement something imaginative

Since I have good practice with PHP and MySQL it puts me at an advantage in the project and allows me to develop top quality code.

System Requirements

All of the requirements that have been listed in this section are functional requirements that concern the actual system functionality and not the user's perception of the system. I will consider the user non-functional requirements in the next stage of the project when I begin to look further into the HCI (Human Computer Interaction) side of the implementation.

Log in

All users regardless of permission level should be able to log in using a username and password from the registration process.

Log out

All users regardless of permission level should be able to end the session using the log out button.

Registration

All newcomers to the system should be able to register an account that records details such as their name and contact details.

User tracking system

All users will be a part of part of the user tracking system as it is something that is agreed to in the registration agreement. Also, the Administrator for the system can view the information logged about the users on the system.

Create a booking

Parents who are registered to the system can sign up their child for an activity.

Pay for activities

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Some activities that exist on the system will require funding to be ran, parents can pay for activities that have this requirement for their child.

Choose time scale of activity payment

An activity may run for an extended period of time, the parent can decide how many sessions to pay for in advance of the activity happening.

Change password facility

All users that have access to the system will have the option to change the password for accessing their account.

Enter notes on to system about child

Parents can add additional information about child such as medical and special requirements.

View all bookings including previous ones

Parents can see all bookings their booking history.

Edit profile

Users can change their profile, this involves data such as contact details. All user types for the system can do this.

Functions concerning activities

The Administrators on the system can edit, and delete existing activities as well as being to create them, in regards to edit, they can change the coach running the session and alter the date and time. The Administrators can alter information such as max children, instructors, location, cost, date and time.

See register of attendance

Coaches record the actual attendance of the activity when taken place, Administrators can too see this information.

Mark attendance of a child

Coaches record if a child is present or absent even if the absent child is signed up to be there.

Instructor sets pre requisites

When an activity has been set up, the coach sets pre requisites such as age limit and this is then confirmed by the Administrator through the system. Also, if there is an "advanced" tennis class, it may be recommended that students have attended a beginners class to bring them up to speed.

Admin confirm instructor pre requisites

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Admin will confirm pre requisites requested by the instructor.

Registering multiple children

A parent can have more than one child registered with a single account.

Viewing timetable

Parents can view the time table for the forth coming week of activities associated with what that particular person has booked.

Request feedback

Parents can request feedback from the instructor/coach, the instructor then fills a feedback form in that is then sent back to the parent.

If you refer to the work plan inside of the initial plan that I produced, I have managed my time appropriately and have finished earlier than expected. Before I tried pre-empting that I wouldn't be able to deliver a system more complete than what I have done but I have managed to finish earlier so that I have longer to work on the harder features such as the messaging service, Geolocation and updating the user tracking to be stored in the database. I had finished everything as early as possible on purpose because I knew I would need this extra time, because I have looked a little ahead and there are a some new things I am going to need to learn and to prepare before integrating with the real system.

By doing this I believe I will be able to produce excellent advanced features for my final system. Something else that needs to be improved is the user registration, there is a little more information that I'd like to record about users such as birthday, geolocation and at the end of the registration form I will put a Captcha to prevent any accounts being made from something like an application that creates multiple accounts so this will make the registration process a little more secure. Also, Administrators can add Coaches to the system, at the moment the table exists in the database and the script to create exists but it is not yet working, I am still trying to diagnose this problem and it will be improved later on.

Problems that I have incurred during this process so far are:

- refresh on login script
- registering coaches by the Admin
- registering normal users
- user tracking
- viewing information from the database
- calling functions in php
- viewing php errors in browser

All of these problems have been addressed and solved during the initial phase of development, and I am hoping that they will not become a problem again at a later date.

Conclusion

I will now evaluate my progress so far and discuss future development.

- Login/logout system

So far in my system I have a login system that has the capabilities of logging somebody in and logging someone out. When someone logs in it creates a PHP session which keeps them logged in. The login process takes two values which are the username and password compares them with what exists in the database, when there is a positive match it logs in. I have created this login system to keep information about activities and about its users secure. This allows for people who are just signed up to use the system to use it and make bookings.

Logout process is simple, as it calls a script that destroys the sessions and redirects them to the first page the user sees when visiting the website. The logout feature is so that someone cannot come in on to that computer and use it under false pretences.

- Users can make bookings

Now that the database has been setup and there is a table applicable to record bookings, users can create and process bookings using the system. Each parent can specify which club they would like their child to sign up too and it can then be viewed on the bookings page. This is one of the fundamental features of the system and is the main part and it of major importance this worked otherwise the project doesn't support its main feature.

- Admin can see user tracking system

On the system, Administrators can see the users browser history just for what they have done on the system. This is all recorded into a text file and then PHP displays it and formats it to its columns.

- User permissions

On the system some user groups have different privileges to others. Administrators can do and see everything that happens in the system. They can see data from the users IP address to the date and time that a booking had been made. Instructors can see information on the students attendance but can't see the date and time an activity was created and they can't see the user tracking system. Parents are the most restricted to what they see and do, they can't access the tracking history and they can only see things on the bookings they have made and that's it.

- CSS design

The current design for the system is very basic, this is just in place so that I could get on with implementation, updates will be made to the design to make it look a lot smarter and professional.

- Background research

The background research that I have done for this project has been mainly in what other online bookings systems in relation to mine are currently available. I have also looked briefly into interface design, but because I was all ready set on having a design of my choice and being confident on I went with that.

So far in the project I have been reaching targets before expected and progress of the implementation over all is good. When writing the Initial plan and Interim report I am able to see exactly how well I really am doing as I am outlining things I wouldn't normally. After completing the initial plan, the work plan was referred to on a daily basis and targets that were set in the plan were being reached easier than expected which was a confidence boost.

Aims for the continuation of the project

Before the final implementation of my system is presented all of the before mentioned functional system requirements will have been implemented and I would have already also researched and implemented the non functional user requirements into the system. To give a conclusive list of aims for the final deliverable is a difficult task at this stage as although I have specified functions that I wish to implement in the systems requirements section, as my project is currently running before schedule I am hoping to implemented additional features that are not within my system requirements.

The additional features that I intend to implement if I can keep ahead of schedule are:

1. **Instant Messenger** -This will be used for people on the system to communicate between each other similar to having an FAQ on most modern web sites.
2. **User Profiles/ Timeline** - Another feature that I'd like the system to have is that each user has their "own" page. This would be used as a time line of their extracurricular activities. This will benefit parents the most as they will see clearly what their child has attended and how well they have performed at the activity.
3. **Video tutorials** – there are always going to be people joining the system who aren't always comfortable with using computers and this is why it may be helpful to have some kind of tutorial to guide them. With a video tutorial it will be possible to help new users navigate the system and carry out tasks that they need to. Also this would be useful if new features are introduced to the system.
4. **Activity suggestion** – after time, it will be applicable that the system will notice what activities are being booked more than others. For example if a user is booking a large series of sport activities, the system will produce suggestions of other sport activities etc.