

# Implementation

### 5.1 Introduction

The implementation of the system is presented in this chapter. The implementation of registration, check availability, bookings and payments modules which are mentioned in the design phase is described considering user interface and data layer.

### 5.2 Implementation of the booking system

On line booking system has been developed to run on Windows environment with the Apache server at the front end and a MYSQL database server running at the back end, and implemented using html, php and Java script languages

Database FFIU was created with six relational tables using MYSQL as designed in the previous chapter to implement the data layer. User interface was designed with mainly five web pages using HTML and Java script. PHP was used to connect the database with the user interface. Security to the system was provided by a user name/password mechanism. Error handling is also considered in developing the system.

#### 5.2.1 Registration module:

User interface

Two types of users were identified here as new user and registered user. System generates an email to the new user after the registration is complete. User can login on to the system with the user id and password which is sent by the email. Sessions and cookies are used to make data persist.

Small segment of HTML codes used for login are as follows.

```
<FORM action ="logi.php" METHOD=post>
<TABLE><td=right><font size=3 <br><Font color=green>
  <B><FONT face=Arial>If you are a registered user with your own user id
<br>and password, you can login here. If you are a new user<br> you can <A
      href="register.html">register</A> first.<br>
```

Small segment of PHP codes used for login are as follows.

```

<?php
include("ccc.php");
// connect to the mysql server
$link = mysql_connect($server, $db_user, $db_pass)
or die ("Could not connect to mysql because ".mysql_error());
// select the database
mysql_select_db($database)
or die ("Could not select database because ".mysql_error());
$match = "select id from $table where username = '".$_POST['username']."'
and password = '".$_POST['password']."'";
$query = mysql_query($match)
or die ("Could not match data because ".mysql_error());
$num_rows = mysql_num_rows($query);
if ($num_rows <= 0) {
echo "Sorry, there is no username $username with the specified password.<br>";
echo "<a href=index.html>Try again</a>";
exit;
} else {
//setcookie("loggedin", "TRUE", time()+(3600 * 24));
//setcookie("mysite_username", "$username");
echo "You are now logged in!<br>";
echo "Continue to the <a href=availability.html>Availability page</a> .";
echo "To the <a href=pastvisitors.php>pastvisitors</a> section.";
}
?> $username=$_POST['username'];
$password = md5($_POST['password']);
$email=$_POST['email'];
// check if the username is taken
$check = "select id from $table where username = ".$username."";
$query = mysql_query($check) or die ("Could not match data because ".mysql_error());
$num_rows = mysql_num_rows($query);
if ($num_rows != 0) {
echo "Sorry, this username $username is already taken.<br>";
echo "<a href=register.php>Try again with another username</a>";
exit;
} else {

//setcookie("loggedin", "TRUE", time()+(3600 * 24));
//setcookie("mysite_username", "$username");
echo "You are now logged in!<br>";

echo "Continue to the <a href=availability.html>Availability page</a> .";

echo "To the <a href=pastvisitors.php>pastvisitors</a> section.";
}
?>

```

Data layer

Register table was created in the database FFIU according to the design in the previous chapter. Password is encrypted for security and is stored it with the user id, and the email in the database.

Some codes of MYSQL are written as follows for the Register Table.

```
>use ffiu
>create table register (
->id MEDIUMINT(5) NOT NULL AUTO_INCREMENT,
->username VARCHAR (30) NOT NULL,
->password VARCHAR (30) NOT NULL,
->email VARCHAR (50) NOT NULL,
->PRIMARY KEY (id),
->UNIQUE username (username)
-> );
```

### 5.2.2 Check availability module

User interface

User can use the search facility to know the availability of each site (circuit). Segment of HTML codes for Figure 4.9 which was included in the design chapter are as follows.

```
<form method="GET" action="Display.php">
<p><B><FONT size=3 Font color=#003300>circuit</B><BR><BR><DIV align=left>
<INPUT TYPE="radio" NAME=c VALUE="SINHARAJA" >SINHARAJA<BR><BR>
<INPUT TYPE="radio" NAME=c VALUE="KANNELIYA" >KANNELIYA<BR>
</P>
<Br>
<input type="submit" name="submit" value="Display"><INPUT type=Reset
value=Reset>
<BR><BR><BR><BR><P><B>Your Request </B><BR>
<A href="accomodation.html">Accommodation </A><br> <A
href="tickets.html">
Tickets </A>
```

Data layer

Two Availability tables were created to store available accommodation facilities in each site. MYSQL Codes for the availability at Sinharaja circuit are as follows.

```
>use ffiu
>create table availabilityas (
->circuit_id INT(8) NOT NULL AUTO_INCREMENT,
-> circuit_no VARCHAR (10) NOT NULL,
-> circuit_name VARCHAR (10) NOT NULL,
-> no_dormitory VARCHAR (20) NOT NULL,
->cabinS1 VARCHAR (10) NOT NULL,
->cabinS2 VARCHAR (10) NOT NULL,
->cabinS3 VARCHAR (10) NOT NULL,
->PRIMARY KEY (circuit_id),
-> );
```

### 5.2.3 Bookings module

User interface

Booking module consists of tickets and accommodation. After booking number and ticket number are generated by the system.

Small segment of HTML codes for Figure 4.12 in the design chapter is as follows.

```
<!-- ticketprice.php -->
<html>
<head>
<title>Total amount you have to pay </title>
</head>
<body>
<?php
include "Tickets1.php";
// connect to the mysql server
$link = mysql_connect($server, $db_user, $db_pass)
or die ("Could not connect to mysql because ".mysql_error());
// select the database
mysql_select_db($database)
or die ("Could not select database because ".mysql_error());
```

```

$c = $_REQUEST['c'];
$b = $_REQUEST['b'];
$h = $_REQUEST['h'];
// insert data into database
$insert = mysql_query("insert into $table values ('NULL', '$c', '$b', '$h')")
or die("Could not insert data because ".mysql_error());
// Getting Information
// from a form on tickets- availability page
// The fields $c (circuit_name), $b (category) and $h (No_persons)
// are passed from ticket.html
echo "<h3 align=\"center\">Ticket booking for $c forest </h3>\n";
// Print the circuit_name
echo "<p>circuit_name : $c.\n";
// Print the category
echo "<p>category : $b.\n";
// Print the No_persons
echo "<p>No_persons : $h \n";
// Calculate and print request
if ($c == "Sinharaja" || $b == "adult" ) {
$A = $h * 23.50;
echo "<p>For $h $b tickets you have to pay Rs. $A.\n";}
elseif
($c == "Sinharaja" || $b == "children" ){
$A = $h * 16.25;
echo "<p>For $h $b tickets you have to pay Rs. $A.\n";}
elseif
($c == "Sinharaja" || $b == "school_children" ){
$A = $h * 7.50;
echo "<p>For $h $b tickets you have to pay Rs. $A.\n";}
elseif
($c == "Sinharaja" || $b == "foreigner" ){

```

```

$A = $h * 575.00;
echo "<p>For $h $b tickets you have to pay Rs. $A.\n";}
elseif
($c == "Kanneliya" || $b== "adult" ) {
$A = $h * 20.50;
echo "<p>For $h $b tickets you have to pay Rs. $A.\n";}
elseif
($c == "Kanneliya" || $b== "children" ){
$A= $h * 10.25;
echo "<p>For $h $b tickets you have to pay Rs. $A.\n";}
elseif
($c == "Kanneliya" || $b== "school_children" ){
$A = $h * 6.50;
echo "<p>For $h $b tickets you have to pay Rs. $A.\n";}
else
$A = $h * 70;
echo "<p> $b tickets for $h, you have to pay Rs. $A.\n";
?>
<form method="GET" action="Tickets2.php">
<table><tr>
<td colspan="2" align="center"><input type="submit" name="submit" value="confirm">
</td>
</tr></table></form></body></html>

```

#### Data layer

Accommodation and tickets are the two tables created under ffiu database to store booking data. MYSQL codes for this table are depicted as follows.

```

>use ffiu
>create table tickets
-> ticket_id INT (10) NOT NULL AUTO_INCREMENT,
-> circuit_name VARCHAR (10) NOT NULL.
-> category VARCHAR (10) NOT NULL.

```

-> no\_persons INT(5) NOT NULL.  
->PRIMARY KEY (ticket\_id ),  
-> );

#### 5.2.4. Payments module

User interface

After the payments user is informed booking information by an email.

```
$ <?php
//generate an e-mail to the user
$mail_to=$Email
$mail_subject="Booking confirmation"
$mail_body="Dear" $username;
$mail_body="Thanks for your booking. ";
$mail_body="Your reference number is n\" $pay_id";
$mail_body="Your booking information";
$mail_body="site\"$site_name";
$mail_body="cabin name n\"$cabin_name.";
$mail_body="if you have any questions now or later, ";
$mail_body="Pl. email us at ffiu@yahoo.com.";
$mail_body="We will be happy to help";
$mail_body="Sincerely, Flora and Fauna Informatin Unit"
    If (mail($mail_to, $mail_subject, $mail_body))
        echo "Successfully sent the e-mai\" \"$mail_subject\" to
$mail_to.";
        echo "Failed to sent the e-mai\" \"$mail_subject\" ."
?>
```

Data layer

MYSQL Codes for the payments table is mentioned in Appendix E.

### 5.2.5. Administration module

User interface

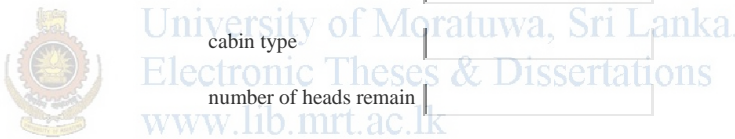
Authorized users are requested to enter the password to access to the admin area,. Following code segment is used to make the login interface.

```
<form method="POST" action="adpw.php">
<div align="left"><p><font face="Arial">Admin password?</font>
<input type="password" name="pw" size="14"><input type="submit"
value="Submit"></p>
</div></form>
```

In the admin area, authorized users are allowed to update availability records using the following form.

Data Entry Form

circuit number	<input type="text"/>
circuit name	<input type="text"/>
cabin type	<input type="text"/>
number of heads remain	<input type="text"/>



Note: circuit number - 1 for Sinharaja , 2 for Kanneliya. Sinharaja has a dormitory and 3 cabins S1,S2,S3. Kanneliya has 4 cabins K1,K2,K3,K4.

### [Back to admin area](#)

Following codes are used to view the above entry form

```
<html>
<head>
</head>
<center>Data Entry Form
<form method="post" action="entry.php">
<table>
<tr><td align="left">circuit number</td>
<td><input type="text" name="circuit_number"></td>
```

```

</tr>
<tr><td align="left">circuit name</td>
<td><input type="text" name="circuit_name" size="20"></td>
</tr>
<tr><td align="left">cabin type</td>
<td><input type="text" name="cabin_type" size="20"></td>
</tr>
<tr><td align="left">number of heads remain</td>
<td><input type="text" name="number" size="20"></td>
</tr>

```

```

<tr><td colspan="2">
<p align="center"><br>
<input type="submit" value="Enter record">
</td>
</tr>
</table>
</form>
</center>

```

Note: <font color="red">circuit number - 1 for Sinharaja , 2 for Kanneliya. Sinharaja has a dormitory and 3 cabins S1,S2,S3. Kanneliya has 4 cabins K1,K2,K3,K4.</font>

```

<br><br><br><br><p><A href="adpw2.html"><B>Back to admin area<br><br></A>
</p>

```

```

</html>

```

### 5.3 Summary

This chapter discussed the implementation of the proposed system. Next chapter will discuss the evaluation strategy, results of the evaluation and some test data results.

# Testing and Evaluation

### 6.1 Introduction

The evaluation strategy, the results of evaluation of the user interface of the booking system and some test results are discussed in this chapter.

### 6.2 Test plan and results

User's Task	Expected Results
Click register link (Index.html)	<ul style="list-style-type: none"> <li>• Display page register.html</li> </ul>
Click register button (register.html)	<ul style="list-style-type: none"> <li>• Display the message "your registration has been done" (register.php) and path to login.</li> <li>• Store user inputs in the table register in FFIU database</li> </ul>
Click login link (register.php)	<ul style="list-style-type: none"> <li>• Display page Index.html</li> </ul>
Click login button (Index page)	<ul style="list-style-type: none"> <li>• Authenticate the user</li> <li>• Display page logi.php</li> <li>• Path to availability page</li> <li>• View password restricted sites</li> </ul>
Click availability link (logi.php)	<ul style="list-style-type: none"> <li>• Access other web pages (Sites.html, availability.html, payment.html, contactus.html)</li> </ul>
Click display button (availability.html)	<ul style="list-style-type: none"> <li>• View availability of accommodation details</li> </ul>
Click availability link (display.php)	<ul style="list-style-type: none"> <li>• Display page display.php</li> <li>• Paths to book accommodation, tickets</li> </ul>
Click accommodation link	<ul style="list-style-type: none"> <li>• Display accommodation booking form (accommodation.html)</li> </ul>
Submit accommodation booking form (by clicking charges button)	<ul style="list-style-type: none"> <li>• Display the amount paid</li> </ul>

Click confirm then receipt	<ul style="list-style-type: none"> <li>• Display randomly generated receipt number for accommodation.</li> </ul>
Click tickets link	<ul style="list-style-type: none"> <li>• Display tickets booking form (tickets.html)</li> </ul>
Submit tickets booking form(by clicking charges button)	<ul style="list-style-type: none"> <li>• Display the amount paid</li> </ul>
Click confirm button and then click receipt link	<ul style="list-style-type: none"> <li>• Display booking number</li> </ul>
Click FAQ	<ul style="list-style-type: none"> <li>• Display Frequently asked questions</li> </ul>
Click admin area	<ul style="list-style-type: none"> <li>• Display login form</li> </ul>
Submit the form after Entering the password given by the administrator	<ul style="list-style-type: none"> <li>• Display welcome page</li> </ul>
Click on the link in the welcome page	<ul style="list-style-type: none"> <li>• Display the access to the database</li> </ul>
Click on reports	<ul style="list-style-type: none"> <li>• Reports generated by the system</li> </ul>

### 6.3 Evaluation strategy

A Questionnaire was used (Table 6.1) to evaluate the interface as it is a less expensive technique (Sommerville, 2001) for user interface evaluation.

Table 6.1: Questionnaire for evaluation the system

### Software Evaluation Form

Name of the Evaluator:

Software Title: Online booking system for Visiting Sinharaja and  
Kanneliya Forests

Please read through this form and mark a tick (√) in the appropriate cage. You are not expected to respond in detail to all of the questions except question 11.

	Yes	No
User Interface		
1. User can navigate through web pages without difficulty	<input type="checkbox"/>	<input type="checkbox"/>
2. Screen directions are consistent and easy to follow	<input type="checkbox"/>	<input type="checkbox"/>
3. User can exit from any screen	<input type="checkbox"/>	<input type="checkbox"/>
4. Interface provides user with an appropriate environment	<input type="checkbox"/>	<input type="checkbox"/>
5 Graphics and/or animations enhance instruction	<input type="checkbox"/>	<input type="checkbox"/>
6 Graphics, colour and animations stimulate user interest	<input type="checkbox"/>	<input type="checkbox"/>
7 Graphics and/or animations are of high quality	<input type="checkbox"/>	<input type="checkbox"/>
8 User feels that the web site is user friendly.	<input type="checkbox"/>	<input type="checkbox"/>
9. Help options are comprehensive and readily available	<input type="checkbox"/>	<input type="checkbox"/>
10 Validating process is	<input type="checkbox"/>	<input type="checkbox"/>

11 Your ideas -----  
-----  
-----

## 6.4 Results and Discussion


The user interface of the booking system has been evaluated by ten persons including both experts and ordinary users. 8 of them has selected 'yes' box. Some of them have suggested their ideas to improve the interface. Based on the results of evaluation, 80% success was for the interface.

Some errors were found, at the whole system evaluation. System testing was done throughout the implementation period.

When the new user inputs his/her registration information, he is informed that he is a registered user, and given the path to log in (Figure 6.1).

Your registration has been done!  
Now you can [log in](#)

Figure 6.1: New user registration result:

User information are stored in the database as follows. After login the user can access other pages.  University of Moratuwa, Sri Lanka.  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)

id	username	password	email
1			
2	kumudini	password	
3	malini	malini	m@yahoo.com
4	aaa	aaa	aaZx.COM
5	kumari	kalutara	kumari@yahoo.com
6	lal	lll	lal@yahoo.com
7	Mala	london	Meknayake@hotmail.com
8	Deepani	gangoda	deepani@yahoo.com
9	indu	wijerathna	indu@yahoo.com
10	indu	wijerathna	indu@yahoo.com
11	indu	wijerathna	indu@yahoo.com
12	Dianee	violet	violet@yahoo.com
13	ratnayake	innb	asd@yahoo.com
14	Malani	Gamage	Mgamage@hotmail.com
15	perera	perera	cbvn@fdh.com
16	vijini	asd	asd@zxzc.com
17	Rohini	asdf	asd@yahoo.com

Figure 6.2: Register table data

In the output (Figure 6.2), real passwords were stored in the database because passwords were not encrypted. As FFIU involves the processing of credit cards and some user information like password as above, security is important.

To avoid above problem the prototype was developed by encrypting the password using md5 (Figure 6.3) which is an acceptable method of storing password.

```
$password = md5($_POST['password']);
```

username	password	email
34 cvf	43a304e1f7998da9469646b274d171	cvf@yahoo.com
35 seethas	912ec803b2ce49e4a541068d495ab5	kum@gmail.com

Figure 6.3: Encrypted password

The register.php file in the prototype, was primarily developed based on IP address and not sessions..

It showed the number of users visited the website. When some browsers mess up sessions this method is good but the users with same IP address are stored as a one user. When the prototype is tested, It was difficult to find out the no of users in the database for the administrator because several users logged using the same IP (Figure 6.4).

id	username	password	email
1	asdf	asdf	asd@yahoo.

time	ip
1190767852	127.0.0.1

Figure 6.4: Number of visitors online in the system.

Database used to get the results of Figure 6.4.

Column Name	Datatype	NOT NULL	AUTO INC
id	MEDIUMINT(5)	✓	✓
username	VARCHAR(30)	✓	
password	VARCHAR(30)	✓	
email	VARCHAR(50)	✓	
time	BIGINT(20)	✓	
ip	VARCHAR(20)	✓	

Some codes used in the IP system

```
<?php
```

```
include("ccc2.php");
// connect to the mysql server
$link = mysql_connect($server, $db_user, $db_pass)
or die ("Could not connect to mysql because ".mysql_error());
// select the database
mysql_select_db($database)
or die ("Could not select database because ".mysql_error());
//defining variables
$time = time();
$clear_time = $time - 600;
$update_time = $time - 30;
$ip = $_SERVER['REMOTE_ADDR'];
$query = mysql_query("SELECT ip FROM register1 WHERE ip = ".$ip." LIMIT 1")
or die(mysql_error());
$count = mysql_num_rows($query);
// check if the username is taken
$check = "select id from $table where username = ".$_POST['username'].>";
$query = mysql_query($check) or die ("Could not match data because ".mysql_error());
$num_rows = mysql_num_rows($query);
if ($num_rows != 0) {
echo "Sorry, this username $username is already taken.<br>";
echo "<a href=register1.php>Try again with another username</a>";
exit;
} else {
// insert the data
if($count < 1) {
$insert = mysql_query("insert into $table values ('NULL', ".$_POST['username'].",
".$_POST['password'].", ".$_POST['email'].", ".$time.", ".$ip.");")
or die("Could not insert data because ".mysql_error());
}
// print the registration has completed
echo "Your registration has been done!<br>";
echo "Now you can <a href=Index.html><Font size=5>log in</Font></a>";
```

```
}
?>
```

Finally sessions were used as a way to store data on the server in this prototype.

A SSL secure socket layer can also be used to encrypt such sensitive data on the website. Users who are not willing to log in to the system are considered as guests. They cannot access the web pages except home page. They are requested to sign the guest book. When they sign it, their details are stored in the table (Figure 6.5) in the database and then the administrator can easily find the number of users visited the web site. If the guest does not sign, there is no way to find the correct visited number.

id	name	email	comment
16	zcvbbv	abc@yahoo.com	nmmijk
17	zcvbbv	abc@yahoo.com	nmmijk
18	kumari	kumari@gmail.com	sssssss↑
19	kumari	kumari@gmail.com	sssssss↑
20	vasana	vasana888@yahoo.com	no logout

Figure 6.5: Guestbook table data

circuit number:	circuit name:	cabin type:	number of heads remain:
1	Sinharaja	Dormitory	30
1	Sinharaja	CabinS1	4
1	Sinharaja	CabinS2	12
1	Sinharaja	CabinS3	6

[back](#)

Figure 6.6: Availability results

When the user requests to display available cabins, above results are shown by the system. Booking results for accommodation and Tickets are depicted in Figure 6.7 and Figure 6.8 respectively.

### Your entry and price for booking SINHARAJA forest

circuit\_name : SINHARAJA.

category : Adults.

number of persons : 2.

cabin name: CabinS1.

nights : 3

from : 2007-09-12

For SINHARAJA, 2 persons you have to pay Rs. 120 from 2007-09-12.

Accommodation booked! [go back](#).


Click [tickets](#) if you wish for booking tickets

Click [receipt](#) to get your booking number

Your booking number is: 3.5111.50.52.5

[go back](#)

Figure 6.7: Booking accommodation results

 University of Moratuwa **Ticket booking for SINHARAJA forest**  
Electronic Theses & Dissertations  
www.lib.mrt.ac.lk

circuit\_name : SINHARAJA.

category : Children.

No\_persons : 5

Children tickets for 5, you have to pay Rs. 350.

Tickets booked! [go back](#)

Click [Accommodation](#) if you wish for booking Accommodation

Click [receipt](#) to get your receipt number for ticket booking

Your Ticket number is: 227003

Figure 6.8: Ticket booking results

## 6.5 Summary

This chapter discussed the evaluation strategy of the proposed system and some test results. Next chapter will conclude the thesis with expected achievements and some further work.

### Conclusion and further work

#### 7.1 Introduction

This chapter concludes the thesis with Achievement, limitations and further work.

#### 7.2 Achievement of the project and limitations

On line booking system is analyzed, designed and the prototype is developed. This prototype solution was based on the real problem of the Forest Department of Sri Lanka. Therefore this result is effective and efficient functioning of the current system. The prototype can be used to build the computerized system to cater all the needs.

For users, it is a website for visiting two MAB reserves. User can log on to the site. It provides on line facilities to check the status of the availability of accommodation, provides on line facilities for booking accommodation and tickets, creates on line facilities to know the amount paid, make comments on the site and finally gives an idea of the value of MAB reserves. User requirements are fulfilled except the facilities to pay online using their credit card. According to the government rules and regulations, the Flora and Fauna Information Unit of the Forest department has to connect with a payment gateway to provide the facility of payment to the user.

Users who are given administrative privileges have to access database daily because foresters of each circuit (site) should know each booking, and availability of accommodation and tickets. Only five hundred tickets are proposed to issue a day considering conservation side. These are some of the limitations of the system. As mentioned in the project charter, prototype was not designed. Sri Lankan fauna and flora are managed by two departments: The Forest Department and The Wild Life Department. Therefore it was difficult to combine these two departments' roles with Flora and Fauna Unit of the proposed system.

However, this proposed system will become useful to the system analysis, and design in future systems clear understanding of structured system analysis and design.

The knowledge acquired from ‘MSc IT lectures’ was put into practice to do the study of the current system. The knowledge gained from ‘Internet programming’, ‘Software engineering’, ‘Database management systems’, ‘E-Commerce’ and network administration and security’ helped the development of prototype. The rest of the modules are also helped during the preparation of the project report in various indirect ways.

The development of the prototype was a very interesting experience. It has to be admitted that the valuable experience gained by understanding the project has helped immensely to expand the knowledge and will also help a great deal in the future.

### **7.3 Further work**

The prototype is not rich in some extent when considering the security. It can be improved by encrypting sensitive data, using SSL certificate. This prototype can be improved to visit Sri Lankan flora and fauna. Then the user will get an opportunity to visit MAB forests as well as National parks and bird sanctuaries. Some of these are unique internationally recognized places which users can find no where in the world.

#### **7.4.1 Summary**

This last chapter concluded the thesis regarding the achievement, limitations and further work.

## REFERENCES


- [1] Choi,W., Kent,A.,Lea,C., Prasad,G., Ullman, C. (2000), Beginning PHP4, Wrox press Ltd. UK
- [2] Elmasri, R & Navathe, S.B.(2004), Fundamentals of DATABASE SYSTEMS, Fourth edition, Pearson Education Pte. Ltd., India.
- [3] Gunatilleke, C.V.S.& Ashton, PS. (1986), *New light on the plant geography of Ceylon ii* , Journal of Ecological biogeography of the lowland endemic tree flora, 14, pp 295-327
- [4] Gunatilleke, C.V.S & Gunatilleke, I.A.U.N (1991), *Threatened woody endemic of the wet lowlands of Sri Lanka and their conservation*, Biological Conservation, 55, pp 17-37
- [5] Ian Sommerville (2004), Software Engineering Sixth edition, Pearson Education Pte. Ltd., India.
- [6] Hope, P (2005), Advanced Web Techniques, Incorporate dynamic content into Web Presentations




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## Appendix A

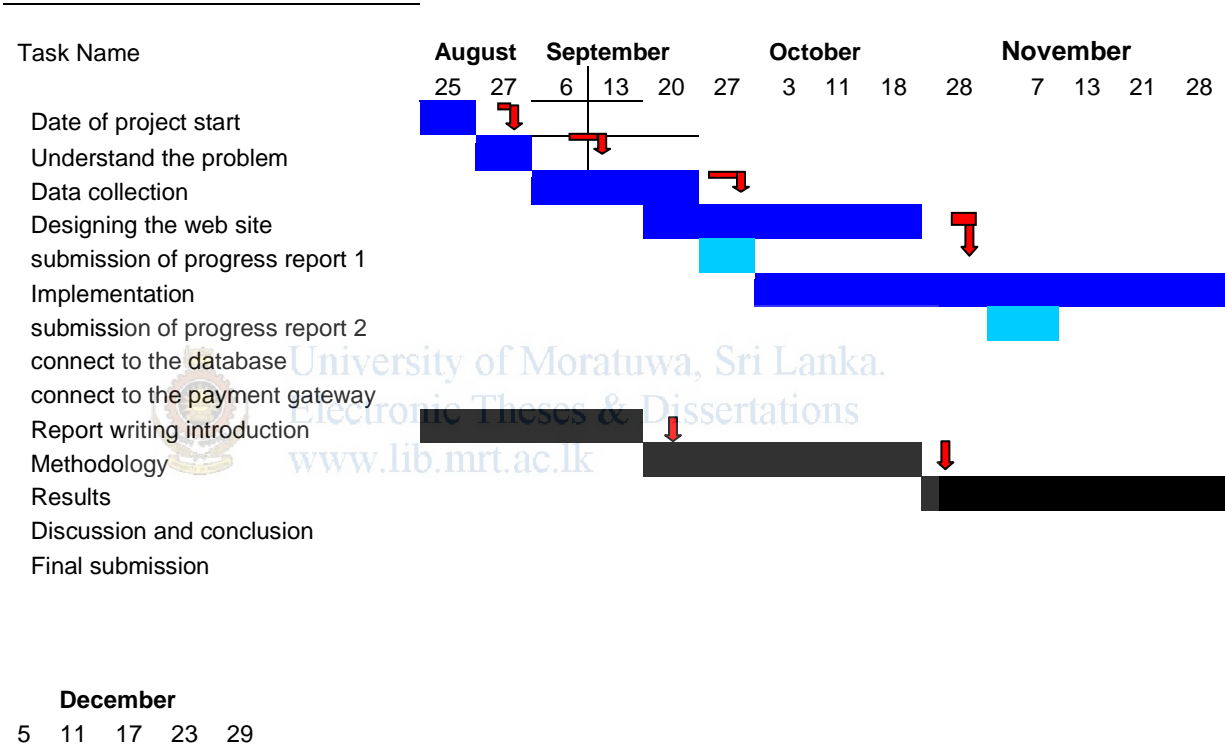
### Project Charter

Name of the Candidate	P. A. K. A. K. Panditharathna		
Registration No.	4/10036	Index No.	04/10036
email Address	<a href="mailto:kpanditharathna@yahoo.com">kpanditharathna@yahoo.com</a> kumudini_p@hotmail.com		
Title of Project	On line booking system for visiting Sri Lankan flora and fauna		
Executive summary	 <p>A web site will be created with on line facility for booking accommodation and tickets for MAB forests and accommodation for National parks and bird sanctuaries (on line B2C model) in Sri Lanka. The customer has to visit the web site for bookings. The customer gets the status of the availability of the accommodation and tickets by entering his/her ID no. and Name. If the accommodation is available he/she will book it and input the credit card details or account details. If it is accepted he/she will be given details of delivery of tickets, accommodation and receipt to the customer. Customer can request number of rooms, the type (dometry/single or double room), details of departure and arrival with time, and number of participants and their category (adults, children). Website displays rooms available, date and price etc. Home, about the site, availability, contact us and payments pages will be included to the web site.</p>		
Supervisor	Name: Dr. A.P.Madurapperuma Organization: University of Moratuwa Designation: Dean Address: Faculty of Information Technology, 100/A D.S Senanayake Mawtha, Colombo 8. Telephone: + 94 11 4619 777 Fax : + 94 11 4619 774 email: <a href="mailto:ajith@itfac.mrt.ac.lk">ajith@itfac.mrt.ac.lk</a>		
1.	Introduction to the Project. Sinharaja, and KDN forests are Man and Biosphere reserves and Horton plains, Yala, Wilpattu, Kumana, and Bundala are some National parks in Sri Lanka. Kumana, and Bundala are bird sanctuaries too. Bundala is recently identified as a MAB reserve. Biosphere reserves are places recognized by UNESCO's Man and the Biosphere (MAB) Programme where local communities are actively involved in governance and management, research, education, training and		

	<p>monitoring at the service of both socio-economic development and biodiversity conservation. Sinharaja has a high percentage of endemic fauna and flora when considering the extent of Sri Lanka. KDN forest complex covers lowland and mountain tropical forests, encompasses an important watershed which feeds numerous rivers and streams, which are important to agriculture. Bundala, southeastern area marked by lagoons, inter-tidal mud flats, beaches, sand dunes, grasslands and forests, is an important bird sanctuary and a Ramsar site (areas recognized as Wetlands of International Importance under the 1971 Ramsar Convention, which promotes their conservation and wise use) since 1991, home to elephants, sea turtles, flamingos and rare black-necked storks. Local people as well as foreigners all over the world visit Sinharaja, KDN forests, Bundala and Horton plains, and other National parks for recreation and educational purposes. This study helps visitors to receive accommodation and/or tickets from his/her home or workplace.</p>
<p>2.</p> 	<p><b>Problem Domain and Motivation</b></p> <p>At present, Forest Department issues tickets and provide accommodation for visitors in Sinharaja. It is a manual system and visitors need to come to Colombo for booking accommodation. Specially, groups of school children have to be in the waiting list for bookings. Though KDN forests are rich in Bio diversity. Except researchers, many Sri Lankans are not known about these valuable forests. Bundala is also not a popular site except among bird watchers. Department of Wild life Conservation issues tickets and provide accommodation for visitors in Horton plains. The inconvenience of booking accommodation for the people in suburb areas, peoples' attitude towards MAB reserves, and mini project done for E commerce motivate me to do this project.</p>
<p>3.</p>	<p><b>Project goals and objectives:</b></p> <ul style="list-style-type: none"> <li>• To create on line facilities to book tickets for one day visitors.</li> <li>• To provide on line facilities for booking accommodation with tickets.</li> <li>• To provide on line facilities to check the status of the availability of the accommodation and tickets.</li> <li>• To provide facilities to pay online using their credit card or bank account.</li> <li>• Design a database</li> <li>• Maintain website to publish information for MAB reserves</li> </ul>

	<p>and national parks in Sri Lanka.</p> <ul style="list-style-type: none"> <li>To give an idea of the value of MAB reserves and national parks.</li> </ul>
4.	Similar work relating to the project: No on line ticket booking system in Sri Lanka for visiting places which have recreational and educational values.
5.	<p>Scope of the project:</p> <ul style="list-style-type: none"> <li>To develop a website to publish information for MAB reserves and national parks in Sri Lanka.</li> <li>To design a Database</li> <li>To provide facilities for booking accommodation with tickets and tickets without accommodation.</li> </ul>
6.	<p>Deliverables</p> <p>Receipt with a number, form for payments, web site,database</p>
7.	<p>Parameters for measurement of success</p> <ul style="list-style-type: none"> <li>Ability to update the database.</li> <li>Accuracy of the contents in web pages.</li> <li>Efficiency of booking system.</li> <li>Authenticity, Availability, &amp; Privacy.</li> </ul>
8.	<p>Risk and Risk management Plan</p> <ul style="list-style-type: none"> <li>Tickets issued per day are limited considering conservation point of view. Only 100 tickets are issued per day with accommodation according to no. of rooms and dometries. Other tickets up to 500 are issued without accommodation for day visitors. Manual system is also continued. Proper connection is established between Manual system and On line system (updating the database).</li> <li>Validity of credit card or account information and payments–through a payment gateway.</li> <li>Unwanted persons access to check availability- user name and a password is used.</li> </ul>
9.	<p>The client or the sponsor (user or the user group of the final solution) if you have the actual client who is interested in the project indicate here.</p> <p>Forest Department and/or Department of WildLife can use this system.</p>
10.	Project Schedule (with a Gantt Chart) *Annexe 10.1

<p>Student's Signature</p> <p>Date: .08.2005</p>	<p>Supervisor's Signature</p> <p>Date: .08.2005</p>
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## Appendix B

### Selection of experimental data

Data were collected from the Forest Department. Details of the facilities in each site, prices of the tickets and cabins, and the manual booking form were given by the Sinharaja booking unit of the head office of the Forest Department. There were no facilities in the district offices, to receive information about bookings or even about the cost of a ticket. Telephone numbers of Sinharaja, and Kanneliya Foresters were given by Kurunegala Forest Department office to get details.

#### Following Questionnaire was used in the background study

1. Who is maintained the forests of Sri Lanka?
2. How to enter a forest?
3. Do people have permission to enter a natural forest?
3. Is it needed to get permission for visiting Sinharaja/Kanneliya? From whome?
4. What is a price of a ticket?
5. How many people can stay at the Forest Department bungalow in Sinharaja at once?
6. What are the facilities provided by the Forest department?
7. How do people know more information about these forests?
8. Is there a web site for the Forest Department?
9. Can people book accommodations from District offices?  
Or do they need to come to Colombo for bookings?

## Appendix C

### Application of the manual booking system

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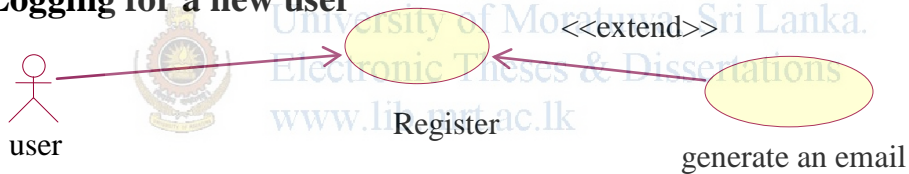
ayÚMkr#@G aWsn

## Appendix D

### UML diagrams

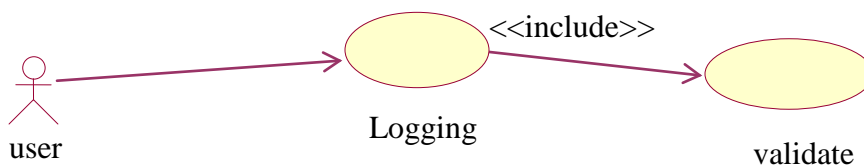
#### Use case 1

##### Logging for a new user



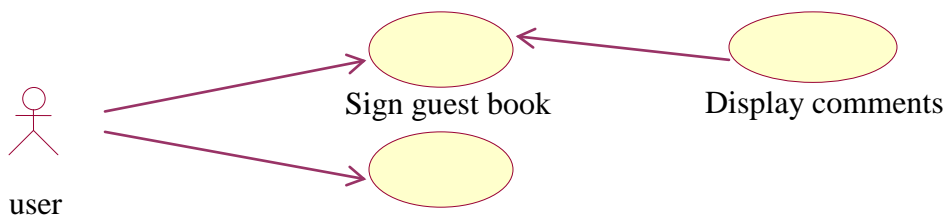
#### Use case 2

##### Logging for the user



#### Use case 3

##### sign for the guests



Log out

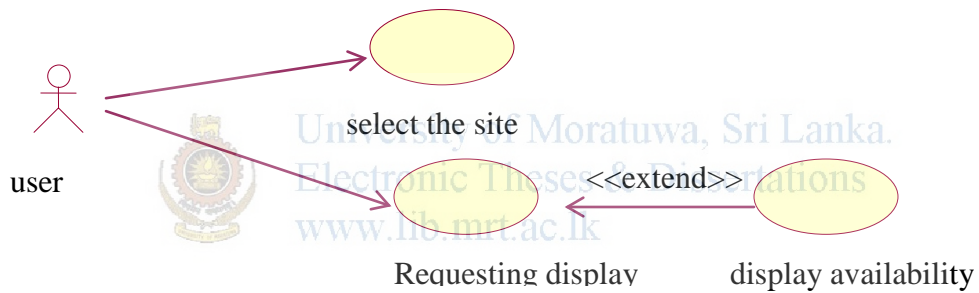
### Use case 4

#### View circuit description



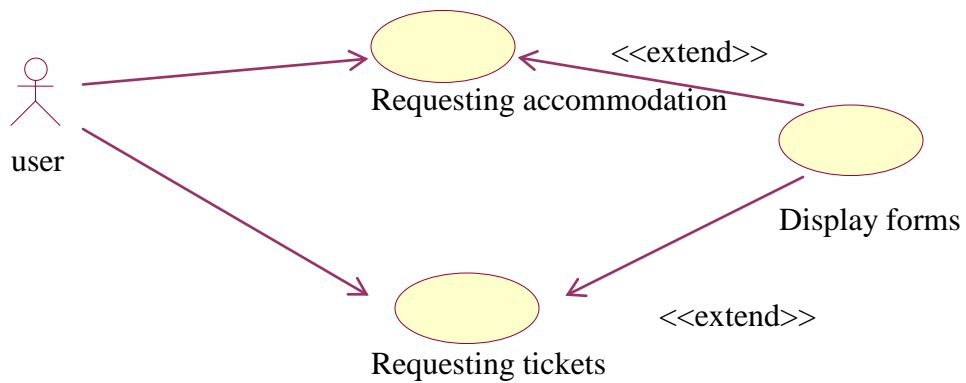
### Use case 5

#### Check availability



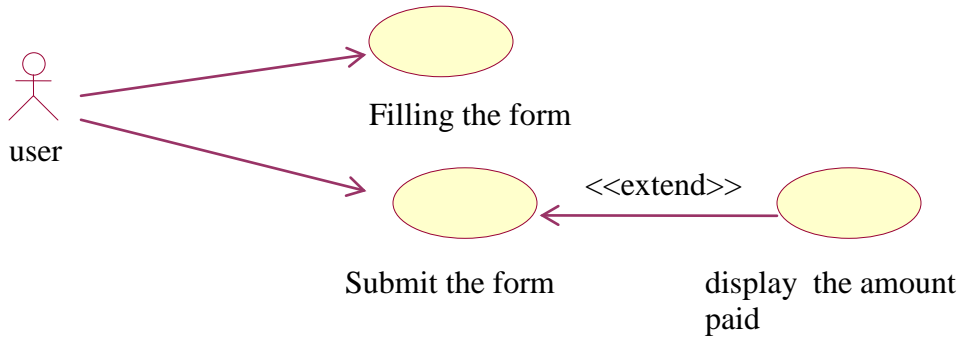
### Use case 6

#### Booking



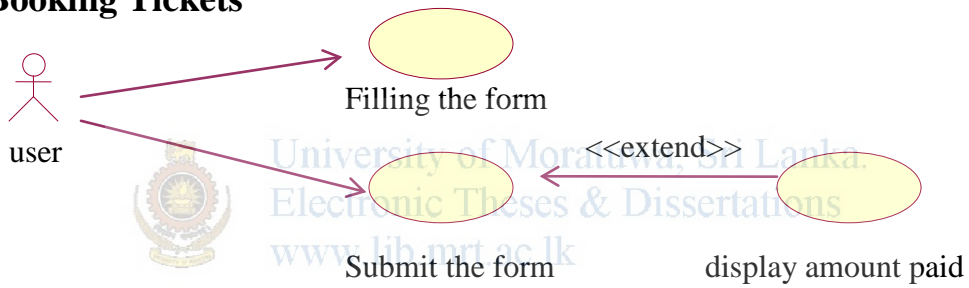
#### Use case 6.1

## Booking Accommodation



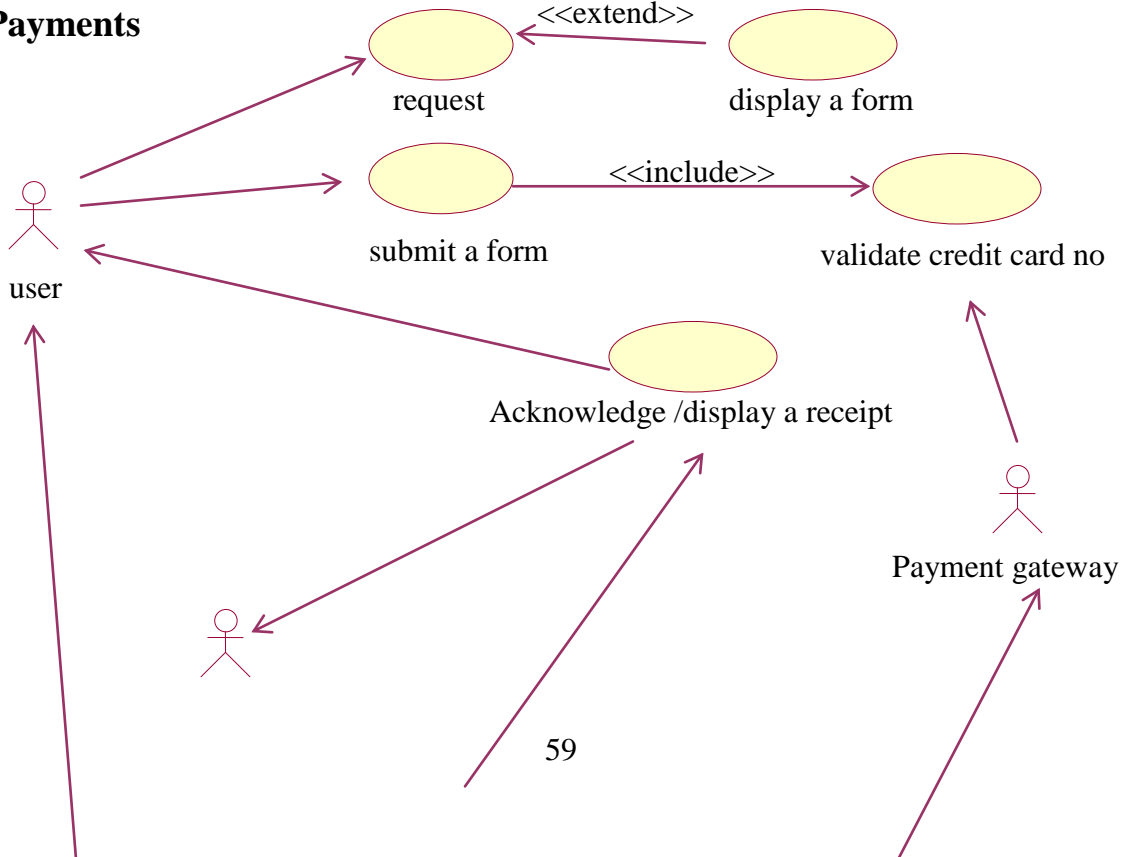
## Use case 6.2

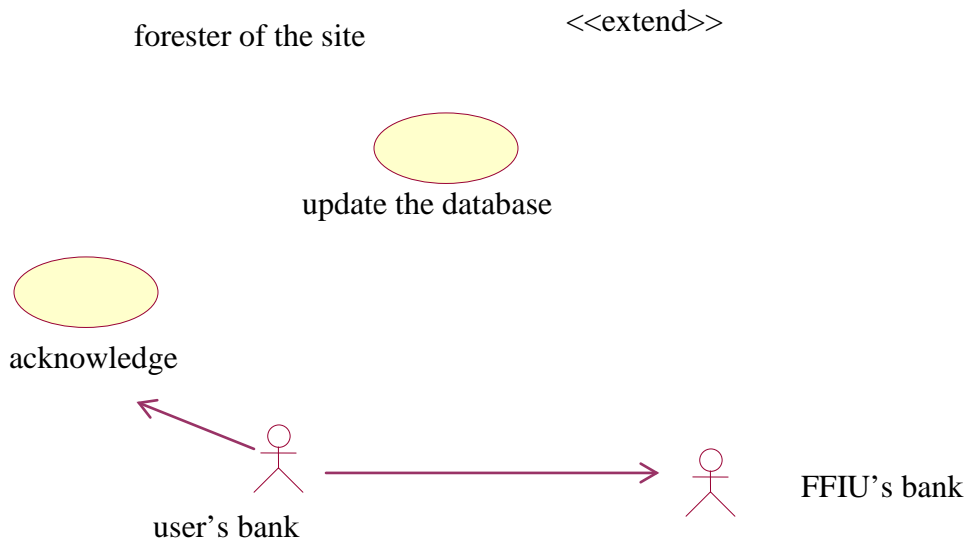
### Booking Tickets



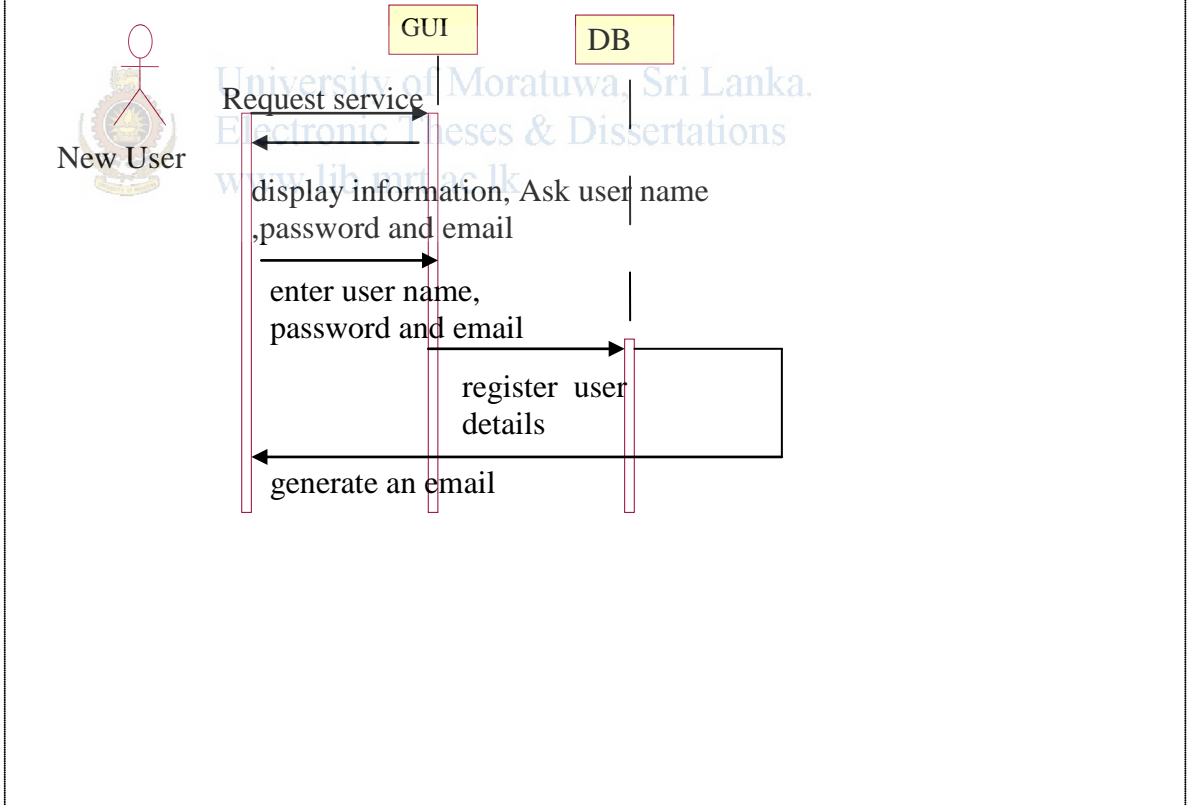
## Use case 7

### Payments

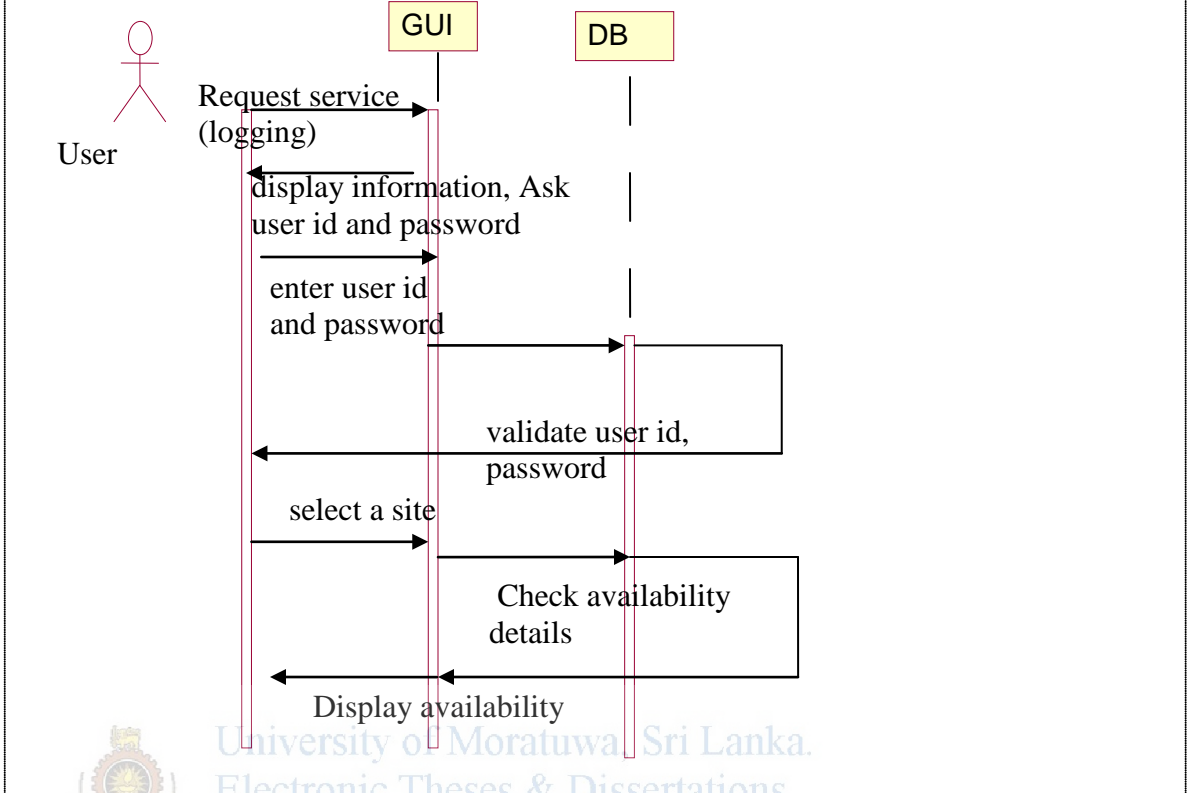




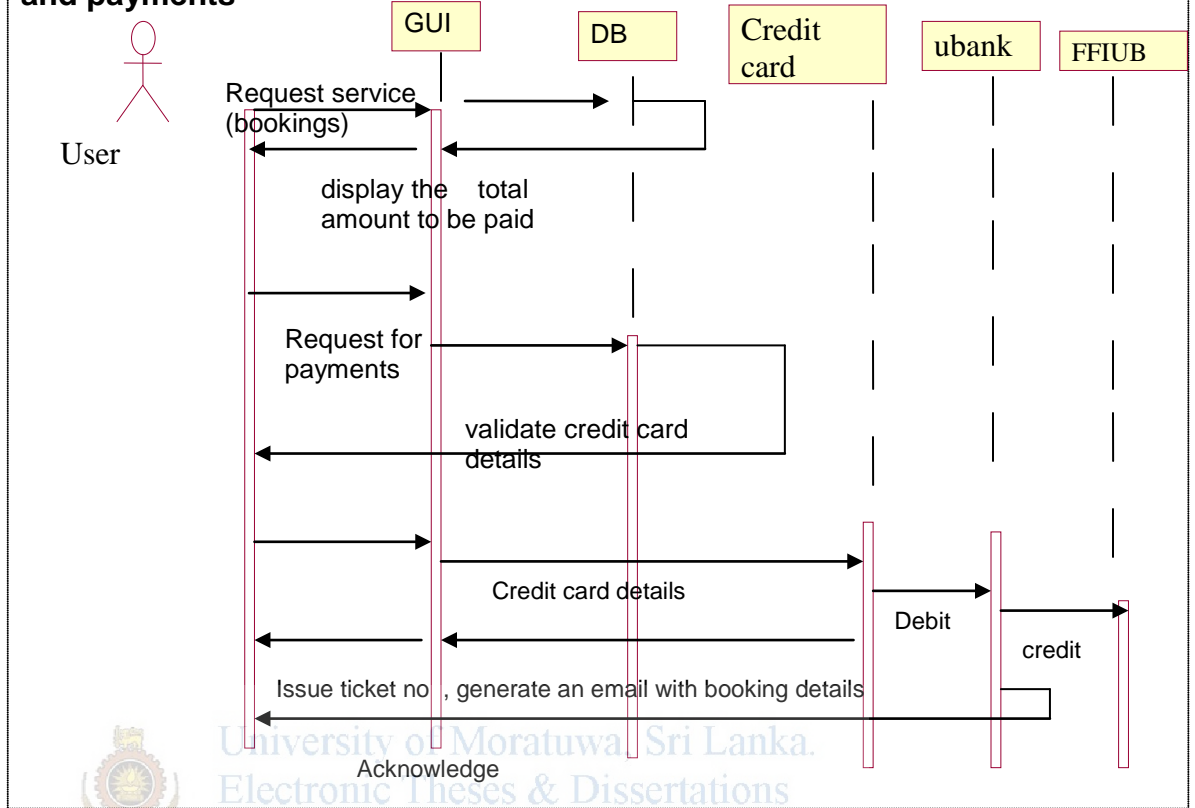
**Sequence diagram-registering**



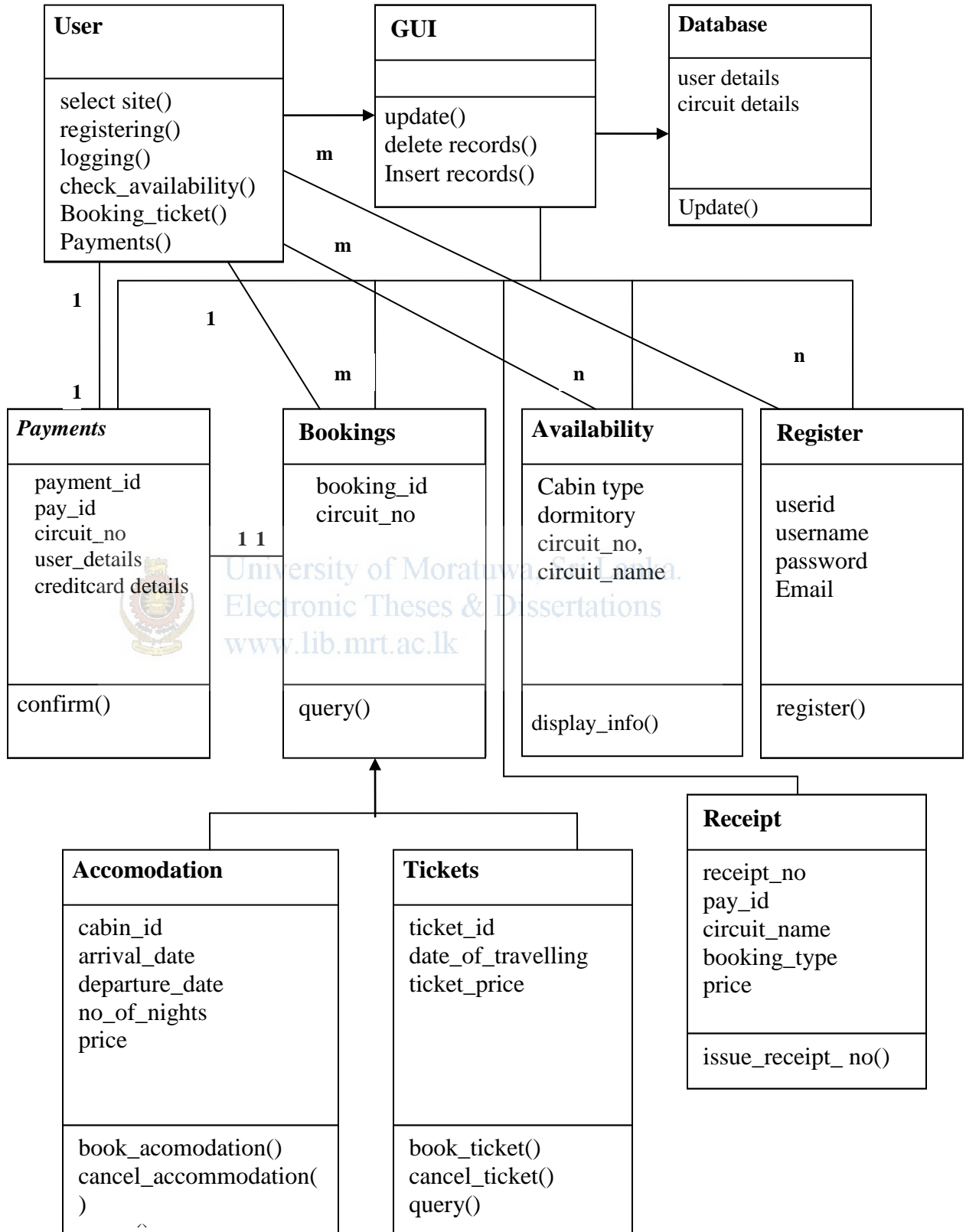
## Sequence diagram -logging



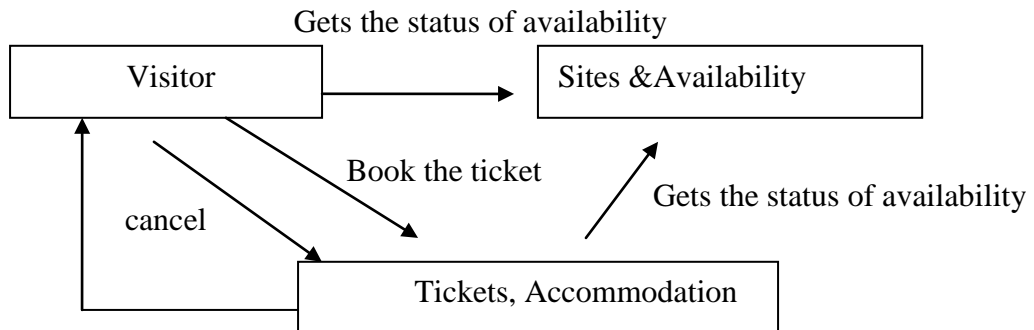
### Sequence diagram- bookings, and payments



Class diagram in details



### Collaboration diagram



## Mysql codes for the Payment Table

### Table Payments

```
CREATE TABLE Payments (
pay_id INT(10) NOT NULL AUTO_INCREMENT,
card_holder VARCHAR(10) NOT NULL I,
company VARCHAR (10) NOT NULL,
country VARCHAR (10) NOT NULL,
province VARCHAR (10) NOT NULL,
card_veri_no INT(10) NOT NULL,
Exp_date DATE NULL,
card _type VARCHAR (10) NOT NULL
primary key (pay_id)
);
```

### Register.php

```
<?php
```

```
include("ccc.php");
```

```
// connect to the mysql server
```

```
$link = mysql_connect($server, $db_user, $db_pass)
```

```
or die ("Could not connect to mysql because ".mysql_error());
```

```
// select the database
```

```
mysql_select_db($database)
```

```
or die ("Could not select database because ".mysql_error());
```

```
//define variables
```

```
$username=$_POST['username'];
```

```
$password = md5($_POST['password']);
```

```
$email=$_POST['email'];
```

```
// check if the username is taken
```

```
$check = "select id from $table where username = ".$username."";
```

```
$qry = mysql_query($check) or die ("Could notcheck data because ".mysql_error());
```

```
$num_rows = mysql_num_rows($qry);
```

```
if ($num_rows != 0) {
```

```
echo "Sorry, this username $username is already taken.<br>";
```

```
echo "<a href=register.php>Try again with another username</a>";
```

```
exit;
```

```
} else {
```

```
// insert the data
$insert = mysql_query("insert into $table values (NULL, '$username.', '$password',
'$email.');"
or die("Could not insert data because ".mysql_error());
// print the registration has completed
echo "Your registration has been done!<br>";
echo "Now you can <a href=Index.html><Font size=5>log in</Font></a>";
}
//add data to the sessions.
$_SESSION['username'] = "$username";
$_SESSION['ip'] = $_SERVER['REMOTE_ADDR'];
```



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