# **Achievement Standard**

Subject Reference Digital Technologies 3.41

Title Implement complex procedures to develop a relational database embedded

in a specified digital outcome

Level 3 Credits 6 Assessment Interna

**Subfield** Technology

**Domain** Digital Technologies

## 3.41 STUDENT DOCUMENTATION

## PROJECT PLANNING

List all the tasks that you think need completing in order for you to create a Dynamic Website for Pukerua Bay Toy Library.

Task	ECD	Complete
Read Brief & Specifications	15/4/2013	✓
Database Design	20/4/2013	✓
Complete Proposed Testing for DB	24/4/2013	✓
Make DB (including forms)	3/5/2013	✓
Actual Testing for DB	6/5/2013	✓
Website Design	11/5/2013	✓
Proposed Testing for Website	15/5/2013	<b>√</b>
Make Website	29/5/2013	✓
Actual Testing for Website	5/6/2013	<b>✓</b>

### **DATABASE DESIGN**

### **TABLES**

Table name	Purpose/description of table		
Toys	Has the information for all the toys in the Toy Library		
Members	Has the information for current members of the Toy Library		
Loaned	Has the information on toys that are out and who borrowed them		

To gain a Merit or above you need to independently design a database that will meet the requirements of the brief. If your teacher needs to provide guidance you will gain an Achieved.

### FIELDNAMES & DATATYPES

Toys				
<u>Fieldname</u>	Datatype	Reason for datatype		
ToyID	Varchar (8)	This Unique ID will contain letters and numbers and their length can differ. It will store n bytes depending on the size of the record		
Toy	Varchar (40)	These fields will also contain letters,		
Brand	Varchar (10)	numbers and may contain symbols.		
Dimensions	Varchar (8)	Each entry in one field will be different		
Category	Varchar (20)	in length. It will store n bytes depending on the size of the record		
Age	Float (4,1)	This allows for the insertion of very small values (floating decimal point) such as 0.5 → 6 months		
Price	Decimal (5,2)	This allows the price values to be store as strings, not as integers		
ArriveDate	DateTime	A date and time combination. Format: YYYY-MM-DD HH:MM:SS		
Gender	ENUM (M/F/BOTH)	It only accepts the values in the choices  – can be controlled using an option form (drop-down list). It only records one value		
Image	Varchar (20)	This field (FileName Toy Images) can contain letters, numbers and may contain symbols. It will store n bytes depending on the size of the record		
Status	ENUM (IN, OUT, OVERDUE, RESERVED)	It only accepts the values in the choices  – can be controlled using an option form (drop-down list). It only records one value		

To gain Excellence for your design you need to show efficiency by the most selecting suitable data types and consider rules of normalisation and first and second form.

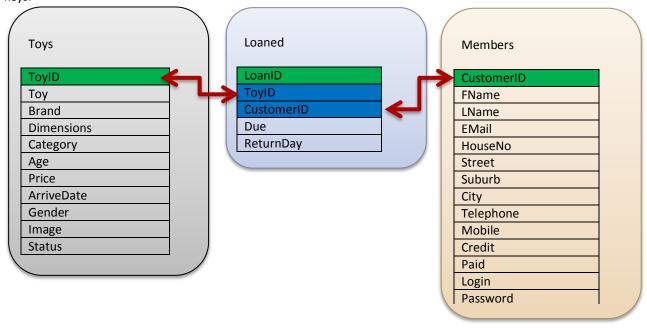
	Members			
<u>Fieldname</u>	Datatype	Reason for datatype		
CustomerID	Small Int (6)	This Unique member ID can store up to 5 s.f. digits. I don't need letters or symbols		
FName	Varchar (20)	These fields will also contain letters, numbers and may contain symbols. Each		
LName	Varchar (20)	entry in one field will be different in length. It will store n bytes depending on the size of the record		
Gender	ENUM (M,F)	It only accepts the values in the choices – can be controlled using an option form (drop-down list). It only records one value		

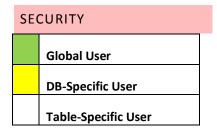
EMail	Varchar (20)	These fields will also contain letters, numbers and may contain symbols. Each
HouseNo	Varchar (7)	entry in one field will be different in length. It will store n bytes depending on
Street	Varchar (30)	the size of the record
Suburb	Varchar (15)	
City	Varchar (15)	
Telephone	Varchar (7)	
Mobile	Varchar (10)	
Credit	Decimal (5,2)	This allows the credit values to be stored as strings, not as integers
Paid	Date	Displays the date only. Format: YYYY- MM-DD
Login	Varchar (16)	This field contain letters, numbers and may contain symbols. It will store n bytes
Password	Varchar (16)	depending on the size of the record

Loaned			
<u>Fieldname</u>	<u>Datatype</u>	Reason for datatype	
LoanID	Small Int (6)	This Unique loan ID can store up to 5 s.f. digits. I don't need letters or symbols	
ToyID	Varchar (8)	Same reasons as above	
CustomerID	Small Int (6)		
Due	Date	Displays the date only. Format: YYYY- MM-DD	
ReturnDay	DateTime	A date and time combination. Format: YYYY-MM-DD HH:MM:SS	

### RELATIONSHIPS

Draw a diagram of the tables and the relationships between these tables. Remember to identify the primary and the foreign keys.





User name	Privileges			
_	Table	Privileges Needed		
Guest	Toys	SELECT		
	Loaned	No Privileges		
	Members	INSERT		
	Table	Privileges Needed		
<mark>Members</mark>	Toys	SELECT		
	Loaned	SELECT		
	Members	SELECT, UPDATE		
	Table	Privileges Needed		
<mark>Volunteers</mark>	Toys	SELECT, UPDATE		
	Loaned	SELECT, UPDATE, INSERT		
	Members	SELECT, UPDATE, INSERT,		
		DELETE		
	Table	Privileges Needed		
ToyManager	Toys	All rights under DATA		
	Loaned	management (SELECT,		
	Members	UPDATE, INSERT, DELETE,		
		FILE)		
		Additional Privileges – All rights under STRUCTURE management, GRANT, PROCESS, RELOAD, SHUTDOWN, CREATE USER		
	Table	Privileges Needed		
DBManager	Toys	All available privileges		
	Loaned			
	Members			

For a Merit the security needs to be accurate so only certain users can run certain actions

QU	ERIES
	Frequent User
	Para Usar

<u>Display Overdue Toys – for volunteers</u>, toyManager (table)

SELECT Loaned.LoanID, Toys.Toy, Toys.Image, Members.FName, Members.LName, Members.Email, Members.Telephone, Members.Mobile, Loaned.Due, Loaned.Status FROM Toys,Loaned,Members WHERE Loaned.Due < CURRENT\_DATE() AND Toys.ToyID = Loaned.ToyID AND Members.CustomerID = Loaned.CustomerID AND (Loaned.Status = 'OUT' OR Loaned.Status = 'OVERDUE') ORDER BY LName;

For higher marks fully describe what the query will do and even refer to the SQL commands that you will use. Well planned queries will lead to accuracy of results (M) and economy of time. (E)

<u>Update Status of Overdue Toys – for volunteers, toyManager</u>

UPDATE Loaned SET Status = 'OVERDUE' (or 'IN') WHERE LoanID = '\$id'; (Button) [can be accompanied by a code that sends out automated emails]

If Status = 'IN' UPDATE Loaned SET ReturnDay = NOW() WHERE ToyID = '\$id2';

```
<u>Display Toys – for members, guest</u>, volunteers, toyManager
```

SELECT Toys.ToylD, Toys.Toy, Toys.Brand, Toys.Dimensions, Toys.Category, Toys.Age, Toys.Price, Toys.Gender, Toys.Status, Toys.Image FROM Toys ORDER BY Toy; (table)

<u>Display Loans – for volunteers, toyManager</u>

SELECT Loaned.LoanID, Toys.Toy, Members.FName, Members.LName, Members.Email, Members.Telephone, Members.Mobile, Loaned.Due, Loaned.ReturnDay, Toys.Status FROM Toys,Loaned,Members WHERE Toys.ToyID = Loaned.ToyID AND Members. CustomerID = Loaned.CustomerID ORDER BY LName; (table)

<u>Display Members – for members, volunteers, toyManager</u>

SELECT \* FROM `Members ORDER BY LName; (table)

<u>Update Customer Details – for members, volunteers, toyManager (form)</u>

UPDATE Members SET FName = '\$FName', LName = '\$LName', Gender = '\$Gender', EMail = '\$EMail', HouseNo = '\$HouseNo', Street = '\$Street', Suburb = '\$Suburb', City = '\$City', Telephone = '\$Telephone', Mobile = '\$Mobile', Password = '\$Password' WHERE CustomerID= '\$id';

SET PASSWORD FOR '\$Login'@'localhost' = PASSWORD('\$Password');";

Sign-up for Membership – for guest, volunteer (if they sign up in store), toyManager (form)

INSERT INTO Members VALUES (NULL, '\$FName', '\$LName', '\$Gender', '\$EMail', '\$HouseNo', '\$Street', '\$Suburb', '\$City', '\$Telephone', '\$Mobile', '0.00', '0000-00-00', '\$Password');

CREATE USER '\$Login'@'localhost';

GRANT USAGE ON \*.\* TO '\$Login'@'localhost';

GRANT SELECT, UPDATE ON 'toylib'.'members' TO '\$Login'@'localhost';

GRANT SELECT ON 'toylib'.'toys' TO '\$Login'@'localhost';

GRANT SELECT ('LoanID', 'ToyID', 'Due', 'Status') ON 'toylib'.'loaned' TO '\$Login'@'localhost';

REVOKE ALL PRIVILEGES ON 'toylib'. 'loaned' FROM '\$Login'@'localhost';

GRANT SELECT ON 'toylib'. 'loaned' TO '\$Login'@'localhost';

SET PASSWORD FOR '\$Login'@'localhost' = PASSWORD('\$Password');";

Book In Toys – for volunteers, toyManager

UPDATE Loaned SET ReturnDay = NOW() WHERE LoanID = '\$id'; (Button)

UPDATE Toys SET Status = 'In' WHERE ToyID = '\$id2';

Book Out Toys – for volunteers, toyManager

INSERT INTO Loaned VALUES (NULL, '\$ToyID', '\$CustomerID', '\$Due', '0000-00-00 00:00:00', 'NOW()'); (form)

UPDATE Toys SET Status = '\$Status' WHERE ToyID = '\$ToyID'; (can be used for reservation too. Just change status to 'RESERVED')

<u>Delete Old Toys – for toyManager (table)</u>

DELETE FROM Toys WHERE ToyID ='\$id'; (button)

Toy Search – for guest, members, volunteers, toyManager (table)

SELECT MAX(Loaned.LoanID), Toys.ToyID, Toys.Toy, Toys.Brand, Toys.Dimensions, Toys.Category, Toys.Age, Toys.Age, Toys.Price, Toys.Gender, MIN(Loaned.Due), MIN(Loaned.Status), Toys.Image FROM Toys, Loaned WHERE (Toys.ToyID LIKE'%".\$search."%' OR Toys.Toy LIKE'%".\$search."%' OR Toys.Brand LIKE'%".\$search."%') AND Toys.ToyID = Loaned.ToyID GROUP BY Toys.ToyID ORDER BY Toy;

Add New Toys – for toyManager (form)

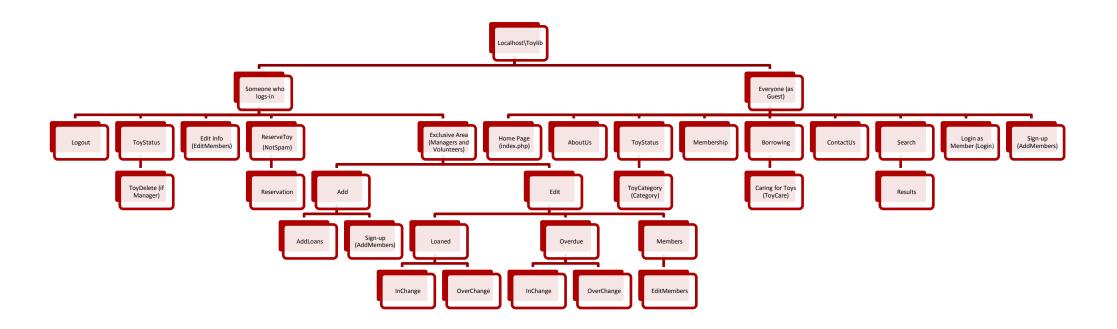
# INSERT INTO T ys / SUB No (Stran T, 'Dinesion D) at g D, N/A, YicA'\$ I'D (At / 'GNer');

Update Customer Details – for toyManager (form)

UPDATE Members SET FName = '\$FName', Lingue' = \$L tame G inde = '\$ aen ter', EMail = '\$EMail', HouseNo = '\$HouseNo', Street = '\$Street', Suburb = '\$Suburb', City L' L'Coy', Lel phone = \$To ep (a), 46 bile = '\$Mobile', Credit = '\$Credit', Paid = '\$Paid', Password = '\$Password' WHERE CustomerID= '\$id';

### WEBSITE DESIGN (GRADED FOR 3.41 & 3.43)

### OVERVIEW OF WEBSITE



Filename (all in .PHP)	Purpose/description of file		
Base			
Header	Contains the header – logo, h1 and login buttons		
Menu-persist	General navigation menu that IS persistent – menu bar moves as user scrolls down (Toys selected)		
Menu-nopersist	General navigation menu that is NOT persistent (Home page selected)		
Menu-special	Special navigation menu for the exclusive area		
Copyright	Contains the footer – just the copyright stuff. Hence the name		
	General Webpages		
Index	Home Page containing the slideshow and basic info about the toy library		
About	More info about the toy library and the librarians		
ToyStatus	List of all the toys		
Category	Lists the toy categories for the different toys		
Membership	Outlines the joining process and the ToC of membership		
Borrow	Contains loan conditions and penalty fees		
NotSpam	Members need to pass a recaptcha being reserving a toy thorough the toy library's gMail account		
Reservation	Lets users fill up a reservation form when reserving a toy		
ToyCare	Guidelines to toy cleaning and repairs		
Contact	Contain address and opening hour info		
Result	Show search results when search keyword is entered		
AddMember	Let guests sign-up if they wish to		
Login	Let guests log-in using their username and redirect them to index.php upon success		
Logout	Let users logout and redirect them to index.php		
EditMember	Let users (or Volunteers) their own information		
Exclusive Webpages			
Validate	Authenticate or deny access to exclusive area for manager and volunteer (from user)		
Secure	Outlines manual on how to use exclusive area		
AddLoans	Allows volunteers/manager to book out toys		
Loaned	List all loans – loan history. Allows volunteers/manager to		

This section can be filled in more fully in the second phase of the project however a brief overview will help to avoid a trial and error approach. A well-structured plan will help you secure that Excellence grade!

	book in toys
Overdue	Lists overdue loans. Allows volunteers/manager to set loan status to overdue and to book in toys as well
Members	List all members. Allows volunteers/manager to edit a member's info

#### THUMBNAILS OF THE WEBPAGES

Draw sketches of the layout of the webpages including table and form designs. For higher grades include pixel measurements of different areas of the page and label tags to be used.

### **TESTING**

### **PROPOSED TESTING**

Include a list of what and how you intend to test with the SQL database AND the web pages. Testing is a major component of both of these assessments but the focus is different for the two assessments.

Element Tested				
Database (PHP/SQL)	Website (HTML/CSS)			
Add Members to DB through a Form	Navigation (Links)			
Add Loans to DB through a Form (Status = Out	Presentability – CSS and positioning of			
OR Reserved)	elements			
Add Toys through PHPMyAdmin	jQuery Menu bar design (including easing)			
Member Updates His/Her Own Information	jQuery Slide Show			
through a Form				
ToyManager Updates Member Information	jQuery Persistent Menu bar			
such as Subscription and Current Balance				
through PHPMyAdmin				
ToyManager Updates Toy Information	Readability and Legibility (Spell Checks)			
through PHPMyAdmin				
ToyManager Deletes Toys through	Accuracy of content			
PHPMyAdmin				
ToyManager Deletes Toys through a button	HTML Audio on home page			
Set Loan Status to 'IN' through a Button	Image resolutions			
Set Loan Status to 'Overdue' through a Button	IFrame on contact page			
ToyManager OR Volunteer Views All Toy	Validation for Exclusive Area			
Status				
ToyManager OR Volunteer Views All Loans	Validation for Reservation (through			
	recapthcha)			
ToyManager OR Volunteer Views All Members	Reservation by means of Email System (thorough Gmail POP3)			
Search Function through a search form	Compatibility in Different Browsers			
Returns Desired Results in a Tabular List	(most especially in Internet Explorer 5, 6 and 7)			
Tabular Search Results has Button Present to	Compatibility of Website when Java is			
View Toy Status	absent/disabled			
Display Overdue Books through a Table on	Accessibility for different mobile devices			
Thursday Mornings				
Login Authentication of Members through a	Access controls in place for different			
Login Form	users (DBManager, Manager, Volunteer,			
	Members and Guest)			

Have a clear plan of what and when you will test.
Leaving testing until the end is not very efficient.
(E) It may be harder to isolate what is causing the errors rather than testing in stages. Ensure you have enough data in your database to be able to fully test the database and website functionality to ensure accuracy.(M)

### **ACTUAL TESTING**

Evidence of testing could include things such as screen shots of errors, an error log or testing table results.

Database (PHP/SQL)						
Element Tested	Input	Who will test?	When to test?	Expected Output	Actual Output	Code Changed?
Add Members to DB through a Form (Expected Values)	FirstName = Ronni	Me	26-5-13	FName = Ronni	As expected	
	LastName = Perez	Me	26-5-13	LName = Perez	As expected	
	Gender = Male	Me	26-5-13	Gender = M	As expected	
	Email = xoxo@fake.com	Me	26-5-13	Email = xoxo@fake.com	As expected	
	Username = rperez	Me	26-5-13	Login = rperez Table Toys Loaned Members	As expected	
	Password = testonly	Me	26-5-13	Password = testonly	As expected	
	HouseNumber = 5A	Me	26-5-13	HouseNo = 5A	As expected	
	Street = Fibe St	Me	26-5-13	Street = Fibe St	As expected	
	Suburb = Tawa	Me	26-5-13	Suburb = Tawa	As expected	
	City = Wellington	Me	26-5-13	City = Wellington	As expected	
	Telephone = 2326345	Me	26-5-13	Telephone = 2326345	As expected	
	Mobile = 0272736645	Me	26-5-13	Mobile = 0272736645	As expected	
	Another user enters Username = rjperez	Me	26-5-13	'Username already exist. Pick a different one'	As expected	
Add Members to DB through a Form (Unexpected Values)	FirstName = 012345	Me	14-6-13	Please enter a valid first name. No symbols, punctuations or numbers	As expected	
,	LastName = 012345	Me	14-6-13	Please enter a valid last name. No symbols, punctuations or numbers	As expected	
	Email = xoxo	Me	14-6-13	The email address you entered is invalid	As expected	
	Password = "	Ме	14-6-13	Please enter a password	As expected	
	Street = 098756	Me	14-6-13	Please enter a valid street name. No symbols, punctuations or numbers	As expected	
	Suburb = 098756	Me	14-6-13	Please enter a valid suburb name. No symbols, punctuations or numbers	As expected	
	Telephone = 232no	Me	14-6-13	Please enter a valid home phone. No letters	As expected	
	Mobile = 027abc	Me	14-6-13	Please enter a valid mobile phone. No letters	As expected	
Add Members to DB through a	All form fields have string	Me	14-6-13	{Form field name} too long. {Maximum length	As expected	

Form (Boundary	length			of field} characters	
String Length)	validation			maximum	
Add Loans to DB through a Form (Status = Out OR Reserved)	ToyID = 1G8T5610	Me	26-5-13	ToyID = 1G8T5610	As expected
	ToyID = ABCDEF	Me	26-5-13	'ToyID not found in database'	As expected
	CustomerID = 000001	Me	26-5-13	CustomerID = 000001	As expected
	CustomerID = 000100	Me	26-5-13	'CustomerID not found in database'	As expected
	Date entered through jQuery datepicker (compulsory) Due = 2013-10- 11	Me	26-5-13	Due = 2013-10-11	As expected
	Status = OUT	Me	26-5-13	Status = OUT	As expected
Add Toys through PHPMyAdmin	Possible to add toys and toy information – CAVEATS: No coded validation	Me	26-5-13	All inputs work as long as datatype and character length matches entered values	As expected
Member Updates His/Her Own Information through a Form	All fields are active except 'Username'. Username = read-only	Me	26-5-13	Same code as 'Add Members to DB through a Form' except prepopulated	As expected
ToyManager Updates Member Information such as Subscription and Current Balance through PHPMyAdmin	Possible to update member information – CAVEATS: No coded validation	Me	26-5-13	All inputs work as long as datatype and character length matches entered values	As expected
ToyManager Updates Toy Information through PHPMyAdmin	Possible to update toy information – CAVEATS: No coded validation	Me	26-5-13	All inputs work as long as datatype and character length matches entered values	As expected
ToyManager Deletes Toys through PHPMyAdmin	Possible to delete toys – CAVEATS: No coded validation	Me	26-5-13	Toy deleted	As expected
ToyManager Deletes Toys through a button	Clicks the delete button corresponding to toy	Me	26-5-13	Toy deleted	As expected
Set Loan Status to 'IN' through a Button	Clicks the IN button corresponding to loan record	Me	26-5-13	Status = IN ReturnDay = NOW()	As expected
Set Loan Status to 'Overdue' through a	Clicks the OVERDUE button	Me	26-5-13	Status = OVERDUE	As expected

Button		responding oan record					
ToyManager OR Volunteer Views All Toy Status	101	odii recoru	Me	26-5-13	Display all toys and their status	As expected	
ToyManager OR Volunteer Views All Loans			Me	26-5-13	Display all loans and their corresponding loan information	As expected	
ToyManager OR Volunteer Views All Members	/olunteer Views		Me	26-5-13	Display all members and their corresponding loan information	As expected	
Search Function through a search form Returns Desired Results in a Tabular List			Me	26-5-13	Display all toys and their corresponding information in relation to search entry. Display a button so that people can check toy status	As expected	
Display Overdue Books through a Table on Thursday Mornings	olay Overdue ks through a le on rsday		Me	26-5-13	Display all OVERDUE loans. STATUS = OUT only	As expected	
Login Authentication of Members through a Login Form	Rjp	sting login erez, tonly	Me	26-5-13	Remember user session 'Login successful'	As expected	
	Nor	n-existent in	Me	26-5-13	This is not a valid login. Could not connect to database	As expected	
				Website (HT		l	
Element Tested		Input	Who will	When to	Expected Output	Actual Output	Code
			test?	test?			Changed?
Navigation (Links)		Internal Website Links	Me	28-08-13	Open link in same tab	As expected (No broken links)	
		External Website Links	Me	28-08-13	Open link in new tab/window	As expected (No broken links)	
Presentability – CSS and positioning of elements		Header	Me	28-08-13	Positioned elements accordingly. Elements with border radius attributes are not expected to have one in IE	Login Panel on Header section does not float right in IE5 or IE6	No changes. I will not cater for IE 5 and 6 users. Added a [if Ite IE 6] [endif]
		Menu Bar	Me	28-08-13		As expected	
		Text Container	Me	28-08-13	_	As expected	
		Footer	Me	28-08-13		As expected	
jQuery Menu bar design (including easing)		Hover on menu item that is not currently active	Me	28-08-13	Follow lava lamp on hover except on search bar	Search bar on menu bar follows lava lamp on hover as well	Made changes. Separated search bar into menu bar UL with a div instead of nesting into it
jQuery Slide Show		Use slideshow navigation bar: Play,	Me	28-08-13	Auto play upon page- load. Do appropriate action when a button is clicked. Change button	As expected	

	1_	1	T	T	T	1
	Pause, Next, Prev, GoTo			colours on hover		
jQuery Persistent Menu bar	When menu bar is outside of the webpage area	Me	28-08-13	Always be on top-centre of the user's webpage	As expected	
Readability and Legibility (Spell Checks)	Use DW Spell Checker	Me	28-08-13	No spelling or grammar errors	As expected	
Accuracy of content		ther content is	accurate as I ha	ve not visited the toy library	yet	
HTML Audio on home page	Auto play HTML5 audio	Me	28-08-13	Audio automatically plays and loops	As expected	
Image resolutions	Slideshow images, and joining process image	Me	28-08-13	All images must be set in 72dpi and must be small in size	As expected	
IFrame on contact page	Click on Contact Us link	Me	28-08-13	Google Map should show Rawhiti Rd	As expected. But page loading is slow	Code changes may be necessary
Validation for Exclusive Area	Login as ToyManag er and Click on Go to Exclusive Area	Me	28-08-13	Display Exclusive Area Page	As expected	
	Login as rmartin (Member)	Me	28-08-13	Link to Exclusive Area is not displayed	As expected	
	Don't Login (Guest) and type secure.php on address bar	Me	28-08-13	You are not authorised to view this page	As expected	
Validation for Reservation (through recapthcha)	Don't Login (Guest) and type notspam.p hp on address bar	Me	28-08-13	You are not authorised to view this page	As expected	
	Login as rmartin (Member), click Reserve a Toy, enter 123456	Me	28-08-13	The reCAPTCHA wasn't entered correctly.(reCAPTCHA said: incorrect-captchasol) and offer another reCAPTCHA	As expected	
	Login as rmartin (Member), click Reserve a Toy, enter words on	Me	28-08-13	Your identity has been verified. Give link 'Go to email form'	As expected	

	puzzle						
Reservation by means of Email System (thorough Gmail POP3)	Don't Login (Guest) and type reservation .php on address bar	Me	28-08-13	You are not authorised to view this page	As expected		
Compatibility in Different Browsers (most especially in Internet Explorer 5, 6 and 7)	Google Chrome	Me	01-09-13	Everything works	The browser does not support the preload=none attribute in HTML5 Video	Remove the preload=none attribute in the video	
	Mozilla	Me	01-09-13	All the testing done above			
	Firefox Safari	Me	01-09-13	Firefox Everything works	1		
	Opera	Me	01-09-13	Everything works			
	Internet Explorer (through IE Tester)	Me	01-09-13	Everything works except for known CSS3 and HTML5 Limitations such as audio, video, border radius and table radius	As expected		
Compatibility of Website when Java is absent/disabled	Menu Bar	Me	10-09-13	Menu-bar still clickable and current link is still current	As expected		
	Menu Persist	Me	10-09-13	Will not persist, be usual menu	As expected		
	SlideShow JS	Me	10-09-13	SlideShow would not be there, text would move up	As expected		
	Google Map API v3	Me	10-09-13	Map will not be there	As expected		
Accessibility for different mobile devices	I will not cater for mobile devices as I have found out in my research that different mobile devices use different types of browsers to that a PC uses. I cannot test my site on all available models of mobile devices as this would be costly. I still compensated this by using @media tags and meta tags (viewport) in my HTML and CSS but I cannot guarantee my site will function properly on a mobile device						
Access controls in place for different users (DBManager, Manager, Volunteer, Members and Guest)	Testing for a	ccess permissi	ons is done on t	he database testing and the	HTML testing		