

COMP233-17B	Internet Applications
Assignment 4	A database driven website (online tests)
Due date	10.00 AM (Friday), 6 <sup>th</sup> October, 2017
Weighting	17%

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### Goals:

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To provide practice, and assess competency in

- Developing server-side PHP scripts
- Dynamic generation of web page content
- Server-side processing of HTML form data
- Integrating use of a relational database into site functionality

### Overview:

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You will design and implement a small web site that allows students to take quick on-line multiple- choice tests for COMP233. Each question will have a number of possible answers, only one of which is correct. A student can access the site and view the available tests and the questions. Once a student has logged in to the site they can attempt tests. A test is presented in a form where the student can select one of the possible answers for each question. Once the student has submitted their answers they will be told which answers were correct and incorrect and their total score. They can take the test again or attempt other tests.

### Details

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The home page of the site will display a list of available tests. When a student selects one of the tests they will see the questions and be able to make selections from the possible answers. However, unless the user is logged in to the site they will not be able to submit their answers for marking.

- Each question is stored as the following group of information, the question text, the answer choices which are also text, and a record of which of the answers is the correct one.
- Each test consists of a set of questions. The application maintains a large set of questions and picks which ones will appear in any test that is created.
- Data for questions, tests and users will be stored in a mySQL database with appropriate tables.
- Pages on the site will be dynamically generated by server-side PHP scripts that interact with the database.
- The user's login status will be stored using a PHP session variable.

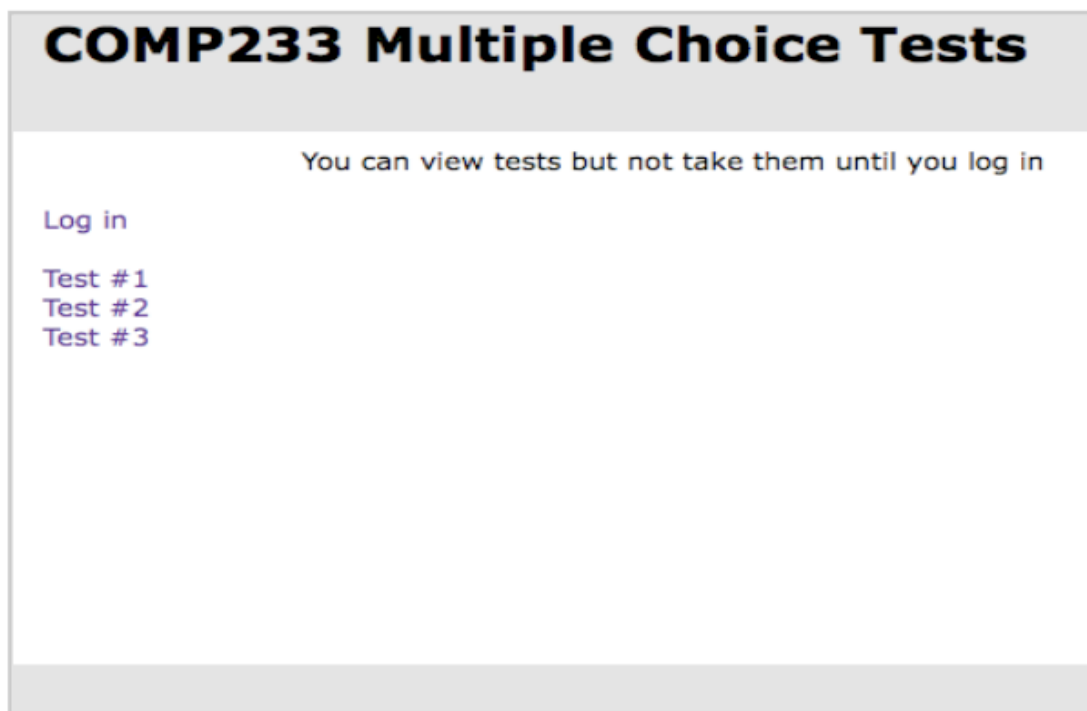
## Guidance

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### Page Design

Do not use HTML tables to implement page layout.

The screenshots below provide *guidance* as to the content of the pages and possible layout. Your solution may differ as you see fit.



Above is an example of the home page when a user visits the site.

The navigation pane to the left contains a log in link and links to available tests.

The content pane indicates that the user can view tests but not submit them for marking until they log in.

An example of the login page.

COMP233 Multiple Choice Tests

Home

Test #1

Test #2

Test #3

Login

Username

Password

Login

After a student has successfully logged in the 'Log out' link is available and the content pane indicates that they can now take a test.

COMP233 Multiple Choice Tests

You can view and take tests

Log out

Test #1

Test #2

Test #3

After the student has clicked the link for a test, questions are displayed along with the possible answers.

Answers are selected using radio buttons

COMP233 Multiple Choice Tests

Log out

Home

Test #1

Test #2

Test #3

Which javascript function can be used to pop up a warning to the user?

☐ popup()

☐ alert()

☐ warning()

☐ error()

Which of the following is a widely used web server?

☐ sioux

☐ navaho

☐ apache

☐ blackfoot

A field that uniquely identifies a row of a mySQL table is called?

☐ unique key

☐ principal key

☐ prime key

☐ primary key

Which of the following is NOT a protocol for accessing data over the in

☐ css://

☐ file://

The student can only submit their answers for marking if they are logged in (ie the submit button may or may not be present).

Which of the following is NOT a protocol for accessing

☐ css://

☐ file://

☐ http://

☐ https://

Submit answers

Which of the following is NOT a protocol for accessing

☐ css://

☐ file://

☐ http://

☐ https://

After the student has submitted their answers for marking. They are shown the questions and whether or not their answer was correct.

COMP233 Multiple Choice Tests

Log out

Home

Test #1

Test #2

Test #3

Which javascript function can be used to pop up a warning to the user?

You answered : *popup()*

Your answer was not correct

Which of the following is a widely used web server?

You answered : *blackfoot*

Your answer was not correct

A field that uniquely identifies a row of a mySQL table is called?

You answered : *unique key*

Your answer was not correct

Which of the following is NOT a protocol for accessing data over the internet?

You answered : *css://*

Your answer was correct

You got 1 correct answers

No cookies

You will NOT use cookies to implement a solution. For this assignment represent whether the user is logged in by using a session variable in PHP. Note that PHP will automatically create a SESSIONID cookie — this is OK.

You do *not* need to keep track of the username, or automatically log the user out after a particular period of inactivity.

CSS

Layout and styling should be achieved using CSS.

PHP

The content of some of the pages depends upon whether the user is logged in. Although most of the page is the same each time, some of it must be generated dynamically on the server via PHP.

Each page should therefore be a .php rather than .html file. Most of the page will be HTML mark up, but PHP code segments will occur at appropriate points and be placed between <?php and ?> tags.

Some of the PHP scripts generate web page content. Additional scripts which process data without generating web page content may be implemented. These may carry out tasks such as validating login data and handling log out and will probably provide a redirect back to another page when they have finished.

PHP scripts can redirect the browser to other pages by setting the HTTP Location header using the *header* function.

Database

Data about users, questions and tests must be stored in a MySQL database. You will determine the structure and content of tables. For marking purposes create at least three users and provide the login details of the users in a README file.

Here is an example *tests* table. There is an entry for each question on each test. Tests and questions are identified using an integer id. Each test would consist of 5 questions. A question can appear on more than 1 tests but the tests should not be identical

Note: Your PHP files should have valid username, password and database name for them to work during marking. If you use your phpMyAdmin password at other places, it would be a good idea to change the phpMyAdmin password to something you don't mind divulging.

test_id	question_id
1	1
1	3
1	5
1	7
2	2
2	4
2	6
3	5
3	6
3	8
3	9

## Development versus deployment environment

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All of the tools that you need are available in R6.

Your submission will be tested in the R6 environment.

If you choose to do your development elsewhere then it is your responsibility to ensure, prior to submission, that your site works as you expect in the R6 environment on the `webapp.cms.waikato.ac.nz` web server using the `mysql.cms.waikato.ac.nz` database server.

### What to submit:

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All of your material for this assignment must be submitted electronically using Moodle.

Create a folder with a name of the form **233-assignment-4**. Place all files and folders for your web site inside this folder. Create a ZIP archive of this folder so that you end up with a file with a name of the form **233-assignment-4.zip**

Submit this ZIP archive via Moodle. On the 233 Moodle page you will find a link entitled 'Assignment 4 Submission Page' (or similar). Follow this link and upload your ZIP file. You can do this as many times as you want up to the submission deadline for the assignment.

No other mechanism for submission will be accepted.

**NOTE:** your site should work 'as is' when unzipped from your ZIP archive, without any modification. You should check that this is the case by unzipping your archive and *testing the site yourself*, in the lab or any other computer before submission.

### Sample question data

Question	Answer_a	Answer_b	Answer_c	Answer_d	correct
Which javascript function can be used to pop up a warning to the user?	popup()	alert()	warning()	error()	b
A field that uniquely identifies a row of a mySQL table is called?	Unique key	Principal key	Foreign key	Primary key	d
Form data is available to a PHP script in which variable?	\$_POST	\$_FORM	\$_DATA	\$_SUBMIT	a
Who makes the web standards	Apple	Mozilla	Netscape	W3C	d
Variables in PHP always begin with which character?	#	\$	<?php	?	b
What is the scope of the variables declared using <b>let</b> in javascript	Function	Block	Global	File	b

What does the <b>mysqli_query</b> function return on the successful execution of an insert query	TRUE	FALSE	NULL	Data from the table	a
Which of the following is a widely used web server	Sioux	Navajo	Apache	Blackfoot	c
Which of the following statements is used to print in PHP	Out	Write	Echo	Display	c
The . operator is used for which of the following operations in PHP	Multiplication	Addition	Signifying the end of a statement	Concatenation	d