COMP6390 Electronic Commerce Assessment 1: PHP Scripting

Please read and follow these instructions carefully to ensure that your assessment is correctly marked. *It is to be noted that usually in programming assignments such as these there is nothing like "partially correct" code; either the code works correctly, or it does not work at all! Therefore, please ensure that your codes work perfectly to get full marks. Some (only a little) mark may be given for the effort applied in writing the code, given that the effort is in the right direction and that it is properly documented.*

- This assessment is due on **Friday, 25th February 2022** by **23:55 PM.** You cannot submit your files after the deadline because the directories would be made read-only.

- Write PHP scripts to answer each of the five questions below, one script per question.

- Name your script with the convention `ans`***x***`.php`, where ***x*** is the number of the question. So `ans1.php` should have the code for answering Question 1 below, and so on. ***Please do not expect the marker to search for your scripts and rename them, if you do not follow the naming convention. Evaluation will be done using automated methods, so if you fail to follow the file naming convention, expect no marks [i.e. 0 mark for the question] because the automated marker cannot find your file. The automated marker will also do plagiarism check. To be even more precise, here are the filenames that the automated marker would be looking for in your directory and these filenames will be hard-coded in the automated marker:***
  ans1.php, ans2.php, ans3.php, ans4.php, ans5.php, ans6.php

- **Submission**: Place your scripts in your designated web folder on *Raptor*, available at the following path:

  - `\\raptor.kent.ac.uk\proj\comp6390\a1\`*`YOURID`*`\public_html`
  - Write-access to your folder will be disabled after the deadline!

- Test your code by running the scripts from a web browser. For example, once you place `ans1.php` in your folder above, the URL to access it will be:

  - `http://raptor.kent.ac.uk/proj/comp6390/a1/`*`YOURID`*`/ans1.php`

- **NOTE**: Marks will be awarded for individual questions as below. *Full marks will only be awarded for functioning scripts that correctly perform the task set out in the questions*.

- If you have any questions or doubts, please email the lecturer (Prof. Frank Wang) at f.z.wang@kent.ac.uk. Also, note that Frank will hold a session in the Week 26&27&28 lectures where he will talk in detail about this assignment and clarify any associated doubts, if you point them out. So, please come prepared after having read the assignment description carefully to the lecture. The same content covered in the lecture related to the assignment will not be answered via email, therefore, please attend the Week 14&15&16 lectures.

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So, what is a well written PHP code (*worthy of full marks*)?

1. Gives expected results.
2. Incorporates error-checks e.g. when a user enters a character instead of a number, the code should throw an error.
3. Documented with plenty of comments so that the marker can understand your logic (*and even give bonus marks if you write an excellent documented code!*)
4. Perfect "code indentation" for easy reading and correct execution order.
5. Does not copy from others (*this can have serious repercussions*).
6. Cites sources within the code.
7. Has meaningful variable names e.g. input1, number1, etc.; not your names.
8. Click here for more with examples.

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Question 1: Date and time (2 marks)

Write a PHP script that returns valid HTML markup containing a table with the current date, time and day, in a tabular format as below.

Today's date:	24/01/2022
Current time:	11:33 AM
The day is:	Monday

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Question 2: JSON (2 marks)

Create another version of the above script that returns correctly formatted JSON instead of HTML.

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Question 3: Cookies (2 marks)

Write a PHP script that creates a cookie with the name "course" and value "CO639" in the user's browser. When the script is first invoked and there is no cookie created yet, it should display a message like:

Cookie named 'course' is not set.

It should then create a cookie.

When the script is reloaded, it should find the existing cookie and display the message:

Cookie 'course' has value 'COMP6390'.

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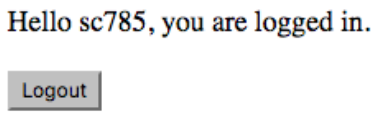
Question 4: Sessions (4 marks)

Write a PHP script that, when first loaded, presents a simple HTML login form with just a username prompt, like below:

When the user enters a username, create a new PHP session and store the username in it. Ensure to sanitise the username input to remove any tags and special characters in it!

Once logged in, your script should show the user a page like this.



The user's session should remain active and the above "logged in" page should be shown even if the user refreshes the page or resubmits the form, or closes and reopens the webpage.

When the user clicks the "Logout" button, their active session should be destroyed and they should be redirected to the original login form, allowing them to login again.

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Question 5 (6 marks)

Write a PHP script that accepts HTTP GET and POST requests. When sent a GET request, your script should generate HTML markup containing a simple form with a text input box like that shown below.

The user is allowed to enter simple XML into the text box to perform an arithmetic operation, by specifying the type of operation: add/subtract/multiply/divide, and a pair of numbers on which to perform the operation.

When the user clicks the Submit button shown above, the PHP script should be sent a POST request with the XML entered by the user. Your script will need to parse the XML to perform the requested arithmetic operation.

Ensure that your script can parse and understand the XML code below and perform the requested 'add' operation.

```
<?xml version='1.0' encoding='UTF-8'?>
<arithmetic>
<operation>add</operation>
<number1>5</number1>
<number2>3</number2>
</arithmetic>
```

The parser should also be able to handle the other arithmetic operations including subtract, multiply and divide. It should also report parse errors and invalid arithmetic operations, and handle divide-by-zero errors.

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Question 6 (9 marks)

A table in MySQL has been created for you using the command shown in the image below. The book id is the primary key in this table, which is of type integer.

```
CREATE TABLE books(
        title VARCHAR(500) NOT NULL,
        author VARCHAR(200) NOT NULL,
        price FLOAT(5,2) NOT NULL,
        rating INT(1) NOT NULL,
        description VARCHAR(2000) NOT NULL,
        cover BLOB NOT NULL,
        id INT AUTO_INCREMENT,
        PRIMARY KEY(id)
        );
```

Write a PHP script that connects to this simple MySQL bookstore catalogue and displays a list of the books available, and allows the user to add selected books to their basket. The catalogue database has been created for you, and all the information you need to connect to it is below.

Add to basket | View basket | Empty basket

You have 0 items in your basket.

Select	Cover	Author	Title	Price	Rating	Description
☐		J. D. Salinger	Catcher in the Rye	8.00	4	Holden Caulfield is a seventeen- year-old dropout who has just been kicked out of his fourth school. Navigating his way through the challenges of growing up, Holden dissects the 'phony' aspects of society, and the 'phonies' themselves: the headmaster whose affability depends on the wealth of the parents, his roommate who scores with girls using sickly-sweet affection. Written with the clarity of a boy leaving childhood behind, The Catcher in the Rye explores the world with disarming frankness and a warm, affecting charisma which has made this novel a universally loved classic of twentieth-century literature.
☐		Michael Crichton	Jurassic Park	15.00	5	On a remote jungle island, genetic engineers have created a dinosaur game park. An astonishing technique for recovering and cloning dinosaur DNA has been discovered. Now one of mankind's most thrilling fantasies has come true and the first dinosaurs that the Earth has seen in the time of man emerge. But, as always, there is a dark side to the fantasy and after a catastrophe destroys the park's defence systems, the scientists and tourists are left fighting for survival... With this masterful cross of science fiction and action-adventure, Michael Crichton created one of the biggest bestsellers of all time, turned by Steven Spielberg into the highest grossing blockbuster ever in 1993.
☐		F. Scott Fitzgerald	The Great Gatsby	9.00	3	Generally considered to be F. Scott Fitzgerald's finest novel, The Great Gatsby is a consummate summary of the "roaring twenties", and a devastating expose of the "Jazz Age". Through the narration of Nick Carraway, the reader is taken into the superficially glittering world of the mansions which lined the Long Island shore in the 1920s, to encounter Nick's cousin Daisy, her brash but wealthy husband Tom Buchanan, Jay Gatsby and the mystery that surrounds him.
☐		George Orwell	Animal Farm	6.00	5	When the downtrodden animals of Manor Farm overthrow their master Mr Jones and take over the farm themselves, they imagine it is the beginning of a life of freedom and equality. But gradually a cunning, ruthless élite among them, masterminded by the pigs Napoleon and Snowball, starts to take control. Soon the other animals discover that they are not all as equal as they thought, and find themselves hopelessly ensnared as one form of tyranny is replaced with another. 'It is the history of a revolution that went wrong - and of the excellent excuses that were forthcoming at every step for the perversion of the original doctrine,' wrote Orwell for the first edition of Animal Farm in 1945. Orwell wrote the novel at the end of 1943, but it almost remained unpublished; its savage attack on Stalin, at that time Britain's ally, led to the book being refused by publisher after publisher. Orwell's simple, tragic fable has since become a world-famous classic.
☐		Joseph Heller	Catch 22	10.00	5	Explosive, subversive, wild and funny, 50 years on the novel's strength is undiminished. Reading Joseph Heller's classic satire is nothing less than a rite of passage. Set in the closing months of World War II, this is the story of a bombardier named Yossarian who is frantic and furious because thousands of people he has never met are trying to kill him. His real problem is not the enemy - it is his own army which keeps increasing the number of missions the men must fly to complete their service. If Yossarian makes any attempts to excuse himself from the perilous missions then he is caught in Catch-22: if he flies he is crazy, and doesn't have to; but if he doesn't want to he must be sane and has to. That's some catch...

The form should have check boxes enabling the user to select one or more books and add them to their shopping basket, using an "Add to basket" button. Your code should use cookies or sessions to keep track of the books in the user's basket. The number of items in the basket should be displayed on the page. The user should be able to view their basket and empty their basket by clicking on appropriate buttons on the page.

More useful details below:
Database server: dragon.kent.ac.uk
Userid: comp6390
Database name: comp6390
Password: mesohn6

NOTE: Late submission, plagiarism and duplication of material

- **Late or non-submission of coursework –** The penalty for late or non-submission of coursework is normally that a mark of zero is awarded for the missing piece of work and the final mark for the module is calculated accordingly.

- **Plagiarism and duplication of material** – The senate has agreed the following definition of plagiarism: "Plagiarism is the act of repeating the ideas or discoveries of another as one's own. To copy sentences, phrases or even striking expressions without acknowledgement in a manner that may deceive the reader as to the source is plagiarism; to paraphrase in a manner that may deceive the reader is likewise plagiarism."

- The code you submit must be your own. We will run automated checks on all submitted work in an effort to identify possible plagiarism, and take disciplinary action against anyone found to have committed plagiarism. In addition, substantial amounts of verbatim or near verbatim cut-and-paste from web-based sources, course material and

other resources will not be considered as evidence of your own understanding of the topics being examined.

- The School of Computing has published an on-line Plagiarism and Collaboration Frequently Asked Questions (FAQ) available at:

  http://www.cs.kent.ac.uk/teaching/student/assessment/plagiarism.html