

## ASSESSMENT BRIEF

<b>Module Title:</b>	Web Technologies
<b>Module Code:</b>	KF4009
<b>Academic Year / Semester:</b>	2021-22 / Semester 1
<b>Module Tutor / Email (all queries):</b>	Garry Elvin <a href="mailto:garry.elvin@northumbria.ac.uk">garry.elvin@northumbria.ac.uk</a>
<b>% Weighting (to overall module):</b>	100%
<b>Assessment Title:</b>	Assignment Outline and Requirements
<b>Date of Handout to Students:</b>	Week commencing the 21 <sup>st</sup> of February 2022
<b>Mechanism for Handout:</b>	Module Blackboard Site
<b>Deadline for Attempt Submission by Students:</b>	Tuesday the 10 <sup>th</sup> of May 2022 before 4.00 pm
<b>Mechanism for Submission:</b>	Upload to Module Blackboard Site and to the newnumyspace web server (see below)
<b>Submission Format</b>	Zip file and web files (see below)
<b>Date by which Work, Feedback and Marks will be returned:</b>	During the week commencing the 6 <sup>th</sup> of June 2022.
<b>Mechanism for return of Feedback and Marks:</b>	Mark and individual written feedback will be uploaded to the Module Site on Blackboard. For further queries please email module tutor.

### LEARNING OUTCOMES

The learning outcomes (LOs) for this module are:-

- LO1** Demonstrate knowledge of standards compliant web-based applications, including key web accessibility and web design principles
- LO2** Apply an awareness of security issues and associated techniques in relation to web design
- LO3** Apply appropriate tools, methods and technologies to solve a given web development problem, considering user needs
- LO4** Communicate and reference the results of research into a relevant topic in relation to web development

**This assessment addresses learning outcomes LO1, LO2, LO3 and LO4.**

## Submission of Work by Student

This assignment **must** be submitted electronically in two ways as follows, see below.

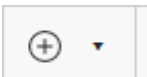
- a. newnumyspace - you are required to FTP ALL of the files (e.g., HTML, graphics, CSS, pdf, php etc.) that you use to implement this part of the assignment to your newnumyspace account by **Tuesday the 10<sup>th</sup> of May 2022 before 4.00 pm** (your files should not be altered after that time). *It is recommended that you create a sub-folder of a name of your choosing inside public\_html and put your assignment files in there.*

Your web solution MUST be designed to work on your newnumyspace web space. You should test your web solution to ensure that it is working prior to the specified hand-in date/time.

***If you fail to FTP your files to newnumyspace correctly or do not make the home page accessible via a web address on newnumyspace by the specified deadline it will not be possible to mark your work.***

- b. Blackboard - you are required to submit **one** zip file (this MUST be a zip file and not an alternative like a rar file) containing a **zipped** copy of all of the files (e.g. html, graphics, CSS, pdf etc.) that you have used to complete the assignment using the Assessment Submission link provided in the **Assessment** area on blackboard for this module by **Tuesday the 10<sup>th</sup> of May 2022 before 4.00 pm**.

### Instructions for submitting your assignment solution via blackboard

1. In blackboard go to Assessment
2. In the **Assignment Submission** section go to View assignment > Add Content and do two things (you MUST do both)
  - a. enter the **EXACT** web address of the home page for your solution to the Assignment. ***You MUST do this. If you don't it will not be possible to mark your work***
  - b. Click on the +  button, click on the down arrow, choose **Insert Local Files**, and navigate to the required zip file, click **Save** and then click **Submit** (note that it must be Submit and not Save and Close)

You must only submit only **ONE** zip file that contains all of the files you used to complete the assignment. Do NOT submit lots of files individually. *The zipped copy of the files that you submit using via blackboard must be **identical** to the files you uploaded to your newnumyspace account.*

### Hints:

- *Make sure all links, images etc. use relative web addresses to avoid problems*
- *It is best to have all file names in lower case, and not to have gaps in file names*

## Assignment Case Study Background

Northumbria Toy Company (a fictional company) offers a range of children's toys for sale. The management at Northumbria Toy Company have asked you to build the first stages of a new online presence for their company. You are also tasked with identifying any security considerations related to the web site for both the company and their users and what steps could be taken to minimise any potential security risks.

The current web site for Northumbria Toy Company has a number of problems including HTML errors, and accessibility and design issues. It is also old, outdated and needs rebranding. From previous research, you have developed the following company objectives for the new site that you should consider to help inform your design decisions.

- Promote the toys available, any related news and any other relevant content
- Allow the user to view all toys available
- Allow an administrator to add details of a new toy to a database
- Have a high quality, but also distinctive, image
- Be easy to use
- Be accessible

## Assignment Development Tasks

This is an individual assessment **worth 100%** of the marks for this module. In this document the tasks that you need to complete are provided (*make sure that you read carefully*).

You are required to start the development of the “Northumbria Toy Company” web site. In your design you should consider the information provided in the Assignment Case Study Background section and good design practice, in particular:

- The overall appropriateness of the design for the purpose outlined
- Accessibility (e.g. the correct use of alt for images and lists for navigation menus)
- HTML standards compliance – it is expected that HTML code validates, without errors
- Semantic structuring of the content of the web pages using sectioning elements (e.g., header, nav, main, section, footer, aside etc.), headings, paragraphs and lists
- Appropriate navigation
- Use a range of appropriate HTML tags
- Appropriate use of repetition, contrast (e.g. colour), proximity, and alignment
- Appropriate use of images
- The readability of text and usability in general
- Appropriate use of a range of CSS (located in a SINGLE style sheet) for
  - general styling
  - the use of *CSS Grid, Flex and Float* to implement a responsive, fluid page layout that resizes according to screen size (without horizontal scroll bars ever appearing)

*Note that the information provided on the pages does not need to be accurate – you may just make it up, but it should still be relevant to the case study.*

### Formative pre-task - wireframes

This is a **formative** task, *meaning that marks will not be awarded for it*. However, it will help you prepare for the assessed tasks and so you should do it. You can ask your tutor in-class for their feedback on your wireframes to help guide your work.

1. Create two low fidelity wireframes (page designs) for the home page for Northumbria Toy Company. One for how the page should look in a mobile phone, the other for a larger screen. The wireframes should be created electronically (e.g. using Microsoft Word or in some other appropriate program)
2. The wireframe should include (as well as the visual representation of the page design) basic annotations to indicate the font types, text sizes, colours, and navigation that you would use and any other relevant aspects of your design

### Task 1 – home page

Create a home page. It should:

- Provide appropriate information about Northumbria Toy Company, including the toys available, related news and other relevant content
- Include an appropriate image(s)
- Include a navigation area with 4 links: “home”, “view toys”, “admin” and “credits”. These links will take the user to an appropriate web page
- Include sectioning elements (e.g. header, nav, main, section, aside, footer etc.), headings (i.e., h1-h6), paragraphs and lists to structure the content of the page appropriately
- Use a range of appropriate HTML tags

### Task 2 – CSS

Create a CSS file that specifies ALL of the styles for the site, for example styles for:

- Use of *Grid*, *Flex* and *Float* to implement a responsive, fluid layout that resizes according to screen size (without horizontal scroll bars ever appearing)
- Background colour(s)
- Text colour(s), font faces, sizes and visual emphasis
- Navigation links (e.g. link states – active, visited, hover - including the colour, font type and size of links, and whether the links are underlined or not)
- Paragraphs, headings etc.

You should aim to style a range of selectors including html tags and classes, and to nest and group definitions where appropriate. The choice of styles is up to you. However, you should consider good design practice when making your choices.

### Pre-task - download the a sql file and set-up the required database tables

An SQL script, `NTC.sql`, has been provided on Blackboard in the Assessment section that contains the SQL statements required to create and three database tables called ‘NTC\_category’, ‘NTC\_manufacturer’, and ‘NTC\_toys’ in MySQL. You will need these tables for various tasks.

1. Download the file `NTC.sql` from Blackboard
2. Import it using phpMyAdmin to create the MySQL database tables.

### **Tasks 3, 4 and 5**

For these tasks note that any PHP code that you include *MUST*

- Be written by you and not generated by a software tool
- Use the methods covered in the module (e.g., the OO methods for working with MySQL and NOT others)
- Where web output is produced, create html that validates as HTML5 compliant
- Be commented appropriately

#### **Task 3 – view toys page**

This needs to be a PHP program that you write to query the database records and dynamically create web content which

- displays a listing of all of the toys currently held in the NTC\_toys table. Full details of each toy should be shown, except for toyID, catID and manID. *Note that to do this you will need to use SQL to join tables – a guide on doing that is provided on Blackboard called ‘table joins’*
- orders records on title and display the category description and manufacturer name (not their IDs)

#### **Task 4 – admin page**

On this page, include a form to allow the administrator to enter the details of a new toy. Upon submission the form should activate a PHP server-side program - see task 5 - located on your newnumyspace web server space.

*Note that in a real system you would probably want to restrict access to any admin page. However, you are not required to do that for this assessment.*

The form should provide

- appropriate components to allow the user to:
  - Enter a toy name, description and price
  - Select a toy category. The categories to choose from should be the same as those in the NTC\_category table. It should only be possible to choose one
  - Select a manufacturer. The manufacturers to choose from should be the same as those in the NTC\_manufacturer table. It should only be possible to choose one
  - Submit the form
- appropriate accessibility features

#### **Notes**

- *It is for you to choose the form components, but your choices should be appropriate*
- *For best marks the categories and manufacturers would be created dynamically from the database records in the tables NTC\_category and NTC\_manufacturer using PHP*

### Task 5 - Server-side script to process the admin page form input

Write a PHP program to:

- Get the data sent from the admin form created in task 4
- Handle certain security and server-side validation issues using appropriate PHP code and the methods covered in the module to:
  - Prevent undefined index error notice messages
  - Prompt the user to enter data / make a choice if they haven't for a given field
  - Escape any special characters that may have been entered into the form
- Insert the user input from the form as a new record to the **NTC\_toys** table in the MySQL database (*note that you MUST not try to add anything to NTC\_category and NTC\_manufacturer*)
- Display the toy name, description, price, category and manufacturer for the new toy in the browser. For best marks display the category description and manufacturer name rather than catID and manID

### Task 6 – credits page

In this page give your own name, id and email address. Also if you have used source material from anywhere (text, graphics, or anything which is not your own work) you should **acknowledge (reference)** the source here with enough information for the source to be easily found (e.g. web addresses, book titles and authors, software names and publishers). If you created any of your own graphics you should also **state this on your credits page**. Note that the Harvard style of referencing should be used – see the material provided by the library at [https://cragside.northumbria.ac.uk/Everyone/skillsplus/database\\_uploads/87.pdf](https://cragside.northumbria.ac.uk/Everyone/skillsplus/database_uploads/87.pdf)

### Security considerations

Identify any security considerations related to the Northumbria Toy Company web site for both the company and their users and what steps could be taken to minimise any potential security risks.

Add a sub-heading to your credits page called “Security considerations”. Under that heading, in no more than two paragraphs, discuss the security considerations related to the web site and what steps you recommend that they could take to minimise any potential security risks. Within your discussion you should consider, for example, data protection and privacy, legal issues and any other relevant security matters. You should acknowledge (reference) any sources that you have read to help inform the discussion using the Harvard style of referencing.

### Important notes

- *Test your html code (including any generated using PHP) to ensure that it is HTML5 compliant and validates using the W3C Markup Validation Service (this is available at <http://validator.w3.org/>)*
- *The use of HTML or CSS generation tools such as Adobe Dreamweaver (other than in Code view), or templates or files for either html or CSS not authored by you (such as Bootstrap) is **NOT PERMITTED**. Anyone who is found to have done so will receive 0 marks. We expect you to write your own HTML and CSS, e.g. using Notepad++*
- *You should test your web pages using more than one web browser (e.g., Chrome and Firefox) and at different screen resolutions to make sure that they display as you would expect them to.*

## Assessment Marking Scheme:

### Important Note

- If the doctype used is the one for html5 and there are errors reported by <http://validator.w3.org/>, **one mark will be deducted from your total of a possible 4 marks for 'HTML validation' for every error up to a total of 4 marks**

Marks will be awarded in the following categories:

<b>Layout and general design</b> <ul style="list-style-type: none"><li>○ Layout complexity &amp; proximity, alignment, content grouping, colour contrast, and general design</li></ul>	7
<b>HTML and content</b> <ul style="list-style-type: none"><li>○ Semantic structure of content – appropriate use of sectioning elements (e.g. nav. etc.); headings, heading order; good general structure, e.g., paragraphs, lists etc.</li><li>○ Amount and relevance of content, including use of images with alt attributes</li><li>○ Navigation links</li></ul>	8 6 2
<b>CSS</b> <ul style="list-style-type: none"><li>○ Range of styles set using CSS, e.g. for font types and sizes, text and background colours, navigation links, emphasis; styling built-in tags (p, h1 etc.); grouping, nesting, classes</li><li>○ Use of Grid, Flex and Float for responsive design that implements a fluid layout</li></ul>	8 8
<b>Display all records (view toys)</b> <ul style="list-style-type: none"><li>• Display a listing of all of the toys currently held in the <b>NTC_toys</b> table</li></ul>	10
<b>Admin form – add a new toy form</b> <ul style="list-style-type: none"><li>○ General functionality</li><li>○ Accessibility features</li></ul>	8 2
<b>Admin - add a new record script</b> <ul style="list-style-type: none"><li>○ Adding a record to the <b>NTC_toys</b> table in the MySQL database</li><li>○ Prevention of undefined index error notice messages</li><li>○ Prompting to enter data / make a choice for a required field if (<i>at least 2</i>) using PHP</li><li>○ Escape any special characters that may have been entered by the user</li><li>○ Display the toy name, description, category, manufacturer and price</li></ul>	6 2 2 2 8
<b>Discussion of security considerations (with referenced sources)</b>	7
<b>Build quality</b> <ul style="list-style-type: none"><li>○ Comments in the code (html, CSS and php), code indenting</li><li>○ HTML validation</li><li>○ Use of a PHP database connection file</li></ul>	8 4 2
<b>Total</b>	<b>100</b>

## ASSESSMENT REGULATIONS

You are advised to read the guidance for students regarding assessment policies. They are available online [here](#).

### Late submission of work

Where coursework is submitted without approval, after the published hand-in deadline, the following penalties will apply.

For coursework submitted up to 1 working day (24 hours) after the published hand-in deadline without approval, **10% of the total marks available for the assessment** (i.e.100%) **shall be deducted** from the assessment mark.

Coursework submitted more than 1 working day (24 hours) after the published hand-in deadline without approval will be regarded as not having been completed. **A mark of zero will be awarded for the assessment and the module will be failed**, irrespective of the overall module mark.

These provisions apply to all assessments, including those assessed on a Pass/Fail basis.

### Academic Misconduct

The Assessment Regulations for Taught Awards (ARTA) contain the ***Regulations and procedures applying to cheating, plagiarism and other forms of academic misconduct***.

You are reminded that plagiarism, collusion and other forms of academic misconduct as referred to in the Academic Misconduct procedure of the assessment regulations are taken very seriously. Assignments in which evidence of plagiarism.