Informatics

SAT

DEvelopment

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# Functions and techniques

To create the information that would be included in my MMOS, the following software functions and techniques of Microsoft Word were used:

* Spell check: to ensure all spelling was correct
* Grammar check: to ensure there were no major grammatical errors
* Font size/styling: to distinguish between headings and paragraphs
* Highlighting: to highlight parts of the content that needed re-wording or fixing
* Lists: to plan out the lists that will be included in the MMOS
* Tables: to plan out how information will appear within a table in the MMOS
* Auto-save: to ensure the content was always being saved

To code the MMOS, the following software functions and techniques of Atom (a code editor) were used to assist in the creation of the website:

* Copy and paste: to copy parts of code for use in another part of the site
* Cut: to cut out a piece of code and place it somewhere else
* Undo: to undo any mistakes
* Redo: to redo any undo’s
* Indenting: to make the code more easily understandable
* Auto-indenting: to assist with indenting
* Automatic code completion: to make development time faster and reduce errors
* Syntax highlighting: to demonstrate which tags pair together
* Comments: to make notes about sections of the code
* Open/close file: to quickly open or close a file
* Save: to save the work

ChartJS was used to create the graphs that would be used in the MMOS, and the following software functions and techniques were used:

* Download: the ChartJS JavaScript file was downloaded and linked to the MMOS so their charts could be incorporated.
* Copy and paste: to copy parts of code from the ChartJS documentation for implementation into the MMOS. Also, data points from the analysis stage were copied into the JavaScript file to allow the MMOS to display findings.

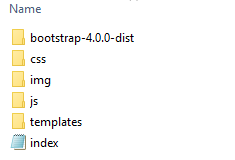
Components of Bootstrap were copied into the MMOS and edited to suit the rest of the website. This assisted in the creation of sections, alignment, links, navigation, tables, headings, fonts, colours, images, as well as assisting with the overall responsiveness of the MMOS.

W3 schools colour picker was used to find various hexadecimal codes and RBG values for colours that would be used within the MMOS.

Google images were used to find the background images and Bitcoin logo that was included within the MMOS.

# File management

The MMOS was protected from any accidental threats because it was stored within my Microsoft OneDrive folder. This meant that is was stored on my laptop as well as always backed up to OneDrive’s cloud storage. Additionally, I made weekly backups of the site on an external hard drive. This also worked as version control as it meant I was able to keep records of the different stages of the site. This was particularly helpful towards the end of development, when I was experimenting with my graphs and made an irreversible change that broke all of them. Fortunately, I was able to load the previous week’s JavaScript file and resume development without losing any time or progress.



*Directory structure*

# Testing

All tests were conducted in both Google Chrome and Firefox.

Webpage conventions testing

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| --- | --- | --- | --- | --- |
| **What was tested** | **How it was tested** | **Expected result** | **Actual result** | **How it was fixed** |
| File name | Observed | Home page named ‘index’ | As expected |  |
| Links | Observed | All links are coloured and underlined | As expected |  |
| Image formats | Images checked in file directory | All image formats are in JPEG, PNG or GIF | As expected |  |
| Useability | Navigating to different parts of the site | All parts of the site can be reached within three clicks | As expected |  |
| Load time | Cache cleared, timed how long the site took to load. | Site loads within 3 seconds. | As expected |  |

Typography conventions testing

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| --- | --- | --- | --- | --- |
| **What was tested** | **How it was tested** | **Expected result** | **Actual result** | **How it was fixed** |
| Alignment | Observed | All paragraph text is left aligned or justified | As expected |  |
| Font | Observed | All text is in a sans-serif font | As expected |  |
| Consistency (paragraphs) | Observed | Font and type size is consistent throughout the site | As expected |  |
| Consistency (headings) | Observed | Headings are of a consistent size and style | As expected |  |
| Text style | Observed | No underlined text (except links). Emphasised text is bold or italics | As expected |  |

Global audience testing

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| --- | --- | --- | --- | --- |
| **What was tested** | **How it was tested** | **Expected result** | **Actual result** | **How it was fixed** |
| Gender inclusiveness | Content read and analysed. Search function for “man” | Content is free of any sexist or non-gender-neutral terminology | As expected |  |
| Cultural inclusiveness | Content read and analysed | Content is free of any discriminatory statements. | As expected |  |
| Language | Content read and analysed | All content is written in Australian English. Free of obscure or complicated words, these are explained where unavoidable.  Free of colloquial language or terms known only to Australians. | As expected |  |
| Age appropriateness | Content read and analysed | Content is easily read by teens and adults.  Children and elderly people are not considered a part of the desired audience. | As expected |  |

Landing page testing

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| --- | --- | --- | --- | --- |
| **What was tested** | **How it was tested** | **Expected result** | **Actual result** | **How it was fixed** |
| Full screen image | Landing page viewed | Image occupies the entire window | As expected |  |
| Fixed bg image | Scroll the page | Background image stays in place while content moves | As expected |  |
| Primary text (colour) | Viewed to see if it was readable | Chosen colour was distinct from the background colour | As expected |  |
| Primary text (position) | Browser dimensions changed | Text stays in a central location regardless of browser dimensions | As expected |  |
| Secondary text (colour and position) | Same as primary text | | As expected |  |
| Button (colour and position) | Same as primary text | | As expected |  |
| Button (hover animation) | Mouse hovered over button | Button animates correctly | As expected |  |
| Button (link) | Button clicked | Button moves page to the introduction section. | As expected |  |

Page mechanics testing

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| --- | --- | --- | --- | --- |
| **What was tested** | **How it was tested** | **Expected result** | **Actual result** | **How it was fixed** |
| Smooth scrolling (location) | Links were clicked | On click, the page automatically scrolls to the correct place | As expected |  |
| Smooth scrolling (speed) | Links were clicked, time was observed. | Every auto scroll takes the same time, regardless of distance to scroll | As expected |  |
| Fixed footer image | Page was scrolled. | The footer image stays stationary while the page content moves. | As expected |  |
| Fixed footer height | Page was scrolled as far down as possible. | The footer image would occupy enough space so that the top of the conclusion section would align with the top off the window. | As expected |  |
| ‘Back to top’ links (location) | Each link was clicked | On click, the link scrolls the page to the introduction section. | As expected |  |
| ‘Back to top’ links  (appearance) | Links were observed | In white sections, link is blue with blue underline.  In blue sections, link is white with white underline. | As expected |  |
| Triangle section divider. | Section divider observed | Between sections, a triangle with the colour of the first section overlaps a part of the second section. | As expected |  |
| Font and background colour | Different sections observed | Font colour contrasts the background colour, so the text can be easily read. | As expected |  |

Navigation bar

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| --- | --- | --- | --- | --- |
| **What was tested** | **How it was tested** | **Expected result** | **Actual result** | **How it was fixed** |
| Location | Observed when page scrolled from landing page to section one. | Nav bar located below landing page, but above first section. | As expected |  |
| Location | Page scrolled | Nav bar sticks to the top of the screen once user has scrolled past the landing page | As expected |  |
| Links | Links were clicked | All links take the user to the correct location | As expected |  |
| Active element (on auto scrolling) | Links clicked, and page auto scrolled | When page scrolls to appropriate section, relevant nav link becomes active | As expected |  |
| Active element (on manual scroll) | Page manually scrolled to different sections | When user scrolls to a new section, the relevant nav link becomes active | As expected |  |
| Appearance | Viewed in both white and blue page sections. | Nav bar is easily recognisable, and elements contrast those in the page. | Works fine in blue sections. In white sections, there is no clear distinction between nav bar and page content | A bottom border shadow was added to the nav bar |

Section 1 testing

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| **What was tested** | **How it was tested** | **Expected result** | **Actual result** | **How it was fixed** |
| Content fluency | Read by the developer, and two others who gave feedback. | Fluent content | A few occurrences that minorly hinder the fluency. | “… and soon get confirmed by miners.”  Changed to:  “… and get confirmed by miners soon after.”  The word “gets” is sometimes changed to “is” or “are” |
| Spelling | Content placed into Microsoft word, built-in spell checker used. | No spelling mistakes | As expected |  |
| Content understandability | Read by two people with little understanding of the topic who gave feedback on anything they didn’t understand. | Information is understandable by readers with no knowledge of the topic | As expected |  |
| Content layout | Observed in a range of browser dimensions. | Content responsively adapts to the browser dimensions and is always visible. | When browser width becomes small, the column width also becomes small. | ‘col-sm-12’ and ‘col-xs-12’ classes were added to divs in the rows so that they would occupy the full width when the browser width is reduced. |
| Bitcoin logo image (position) | Observed in a range of browser dimensions. | Image responsively adapts and re-scales according to browser dimensions. | Image position works nicely due to the changes in the previous test.  On smaller dimensions, image is not centred. | Image placed inside a div with class ‘text-center’ |
| Bitcoin logo image (alt text) | Page reloaded when image was renamed. | Image unavailable. Alt text reads “Bitcoin Logo”. | As expected |  |

Section 2 testing

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| **What was tested** | **How it was tested** | **Expected result** | **Actual result** | **How it was fixed** |
| Content fluency | Read by the developer, and two others who gave feedback. | Fluent content | One sentence needed re-wording | “… split the Bitcoin ledger called the blockchain in two.”  Changed to:  “… split the Bitcoin ledger in two.” |
| Spelling | Content placed into Microsoft word, built-in spell checker used. | No spelling mistakes | As expected |  |
| Content understandability | Read by two people with little understanding of the topic who gave feedback on anything they didn’t understand. | Information is understandable by readers with no knowledge of the topic | As expected |  |
| Content layout | Observed in a range of browser dimensions. | Content responsively adapts to the browser dimensions and is always visible. | As expected |  |
| Graph (conventions) | Observed | Graph follows all conventions, including title, legend and axes labels | As expected |  |
| Graph (content) | Graph was compared to graph produced in analysis stage. | Graph matches the one produced in the analysis stage. Represents the data correctly. | As expected |  |
| Graph (scalability) | Observed in a range of browser dimensions. | Graph responsively adapts to the browser dimensions. | As expected |  |
| Table (conventions) | Observed | Table follows all conventions, including title, distinct column headers and text alignment. | Table did not have a title. | Title was added to the table. |
| Table (scalability) | Observed in a range of browser dimensions. | Table responsively adapts to the browser dimensions. | As expected |  |
| Table (content) | Table values compared to those found in the AIER investigation. | Table values match those of the AIER investigation. | As expected |  |
| AIER link | Link clicked | Link opens the AIER investigation in a new tab. | As expected |  |

AIER – American Institute for Economic Research

Section 3 testing

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| --- | --- | --- | --- | --- |
| **What was tested** | **How it was tested** | **Expected result** | **Actual result** | **How it was fixed** |
| Content fluency | Read by the developer, and two others who gave feedback. | Fluent content | As expected |  |
| Spelling | Content placed into Microsoft word, built-in spell checker used. | No spelling mistakes | As expected |  |
| Content understandability | Read by two people with little understanding of the topic who gave feedback on anything they didn’t understand. | Information is understandable by readers with no knowledge of the topic | As expected |  |
| Content layout | Observed in a range of browser dimensions. | Content responsively adapts to the browser dimensions and is always visible. | On small screen dimensions, the column widths also became small. | ‘col-sm-12’ and ‘col-xs-12’ classes were added to divs in the rows so that they would occupy the full width when the browser width is reduced. |
| Graphs (conventions) | Observed | Pie charts follow all conventions, including title, legend and different slice colours. | As expected |  |
| Graphs (content) | Graph values were compared to values obtained in analysis stage. | Graph values match those obtained in the analysis stage | As expected |  |
| Graphs (scalability) | Observed in a range of browser dimensions. | Graphs responsively adapt to the browser dimensions. | As expected |  |

Section 4 testing

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| **What was tested** | **How it was tested** | **Expected result** | **Actual result** | **How it was fixed** |
| Content fluency | Read by the developer, and two others who gave feedback. | Fluent content | One sentence did not make sense. | “In order to combine their power, miners can group together and share their computing power”  Changed to “In order to mine more bitcoins, miners can group …” |
| Spelling | Content placed into Microsoft word, built-in spell checker used. | No spelling mistakes | As expected |  |
| Content understandability | Read by two people with little understanding of the topic who gave feedback on anything they didn’t understand. | Information is understandable by readers with no knowledge of the topic | As expected |  |
| Content layout | Observed in a range of browser dimensions. | Content responsively adapts to the browser dimensions and is always visible. | As expected |  |
| Graphs (conventions) | Observed | Graphs contain all necessary conventions, including titles and axes labels. | As expected |  |
| Graphs (content) | Graph values compared to those found in the analysis stage. | Graph values match those found in the analysis stage. | As expected |  |
| Graphs (scalability) | Observed in a range of browser dimensions. | Graphs responsively adapts to the browser dimensions. | As expected |  |

Section 5 testing

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| **What was tested** | **How it was tested** | **Expected result** | **Actual result** | **How it was fixed** |
| Content fluency | Read by the developer, and two others who gave feedback. | Fluent content | As expected |  |
| Spelling | Content placed into Microsoft word, built-in spell checker used. | No spelling mistakes | As expected |  |
| Content understandability | Read by two people with little understanding of the topic who gave feedback on anything they didn’t understand. | Information is understandable by readers with no knowledge of the topic | As expected |  |
| Content layout | Observed in a range of browser dimensions. | Content responsively adapts to the browser dimensions and is always visible. | As expected |  |