

# Prototype 3 Evaluation

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## Measurable Objectives

### List

1. To be able to convey, explain and demonstrate basic HTML5 features for KS4 ICT students. This is one of the main objectives of my product. All tutorials are tailored to focus around this subject area. Since this technology is vast and has many dependencies to further leverage all of its features, other areas such as CSS and JavaScript will also be touched. However the user will be able to choose at any time what he/she wants to do. For novice users the HTML5 section will be more than sufficient to implement distinctive features on their website.
2. To demonstrate correct and/or better use of CSS3. The use of CSS3 is essential in the part of designing any website. By demonstrating correct use of CSS3 and showing them the most commonly used examples, users can add a whole range of animated content on their website to make it feel more lively and responsive.
3. To be able to assess each end-user's ability and allow them to develop skills accordingly. This objective's purpose is to tailor the contents of the product to suit the needs of the user. This way the user can save on the time spend on reading tutorials and/or articles that they are already aware about.
4. To be able to engage in a written conversation with the end-user by leveraging the opportunities available from the virtual assistant. The virtual assistant will be a female model going with the name 'Anna' and will engage in a two-way conversation with the end-users. The purpose of the virtual assistant is primarily to ask end-users a set of questions in order to get a general idea on their current abilities and the areas they need to work on.
5. To demonstrate appreciation for people with disability by including features such as larger font and/or contrasting backgrounds. This will improve the usability of the product and help it make more accessible to everyone.
6. To make the product viewable on a wide variety of displays and operating systems. In a world with a number of display sizes and screen resolutions, it is essential that an adaptive product is created that can scale its content according to the screen resolution so that everyone gets the best experience.
7. To make the navigation techniques user-friendly and ergonomic that can be easily accessed by anyone. Not everyone would prefer a staged interface which require entering commands every often. For these users, navigation options should always remain.
8. To create an artefact that can be used in a productive manner by the target audience as well as higher year groups and teachers. One of the most important aspects of the product is that it is beneficial for the set target audience, but due to its nature the product should also be helpful for higher year groups.
9. To demonstrate effective use of multimedia by including video, audio and animations. This objective will be ensured throughout the product development with the help of questionnaires, test runs and meetings.
10. To create a product that meets the guideline requirements for the client and demonstrates effective communication and applying on feedback from all stakeholders. Regular meetings will need to be held with different stakeholders in order to complete this objective which is important before the final product is developed to avoid any inconvenience.

## Objective 1

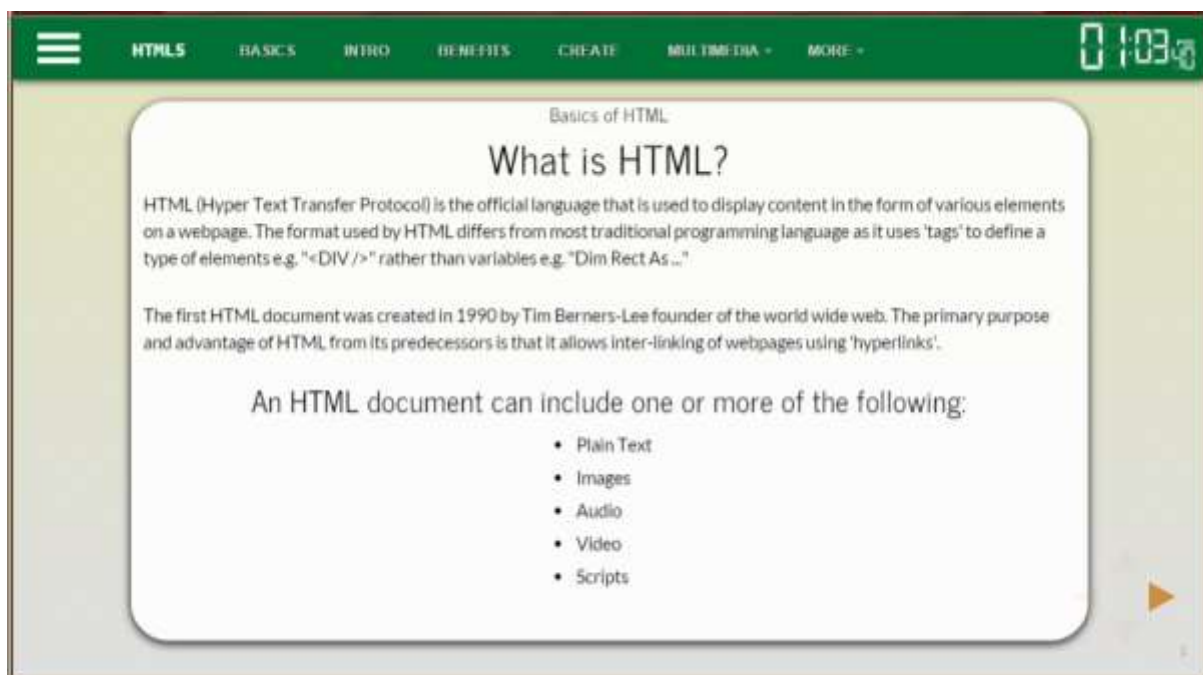
### Present Status

The first objective is based on the actual content of the product. It is about creating tutorials that can convey the basic features of HTML5. This is an important objective because it is also the main purpose of my product. For prototype 3 I have completely achieved this objective. My main headings for this topic can be seen from the screenshot of the content menu bar of the HTML5 section:



As illustrated, the main topics of the HTML5 sections are: Basics, Introduction, Multimedia and other. This can give the users an idea of what the whole section is going to be about. It will allow users to dive into HTML5 and learn the very basics of it. The contents are also synonymous with the general difficulty of this section. As mentioned in the functional specification, this section has to be for beginners and hence be the easiest of all three sections.

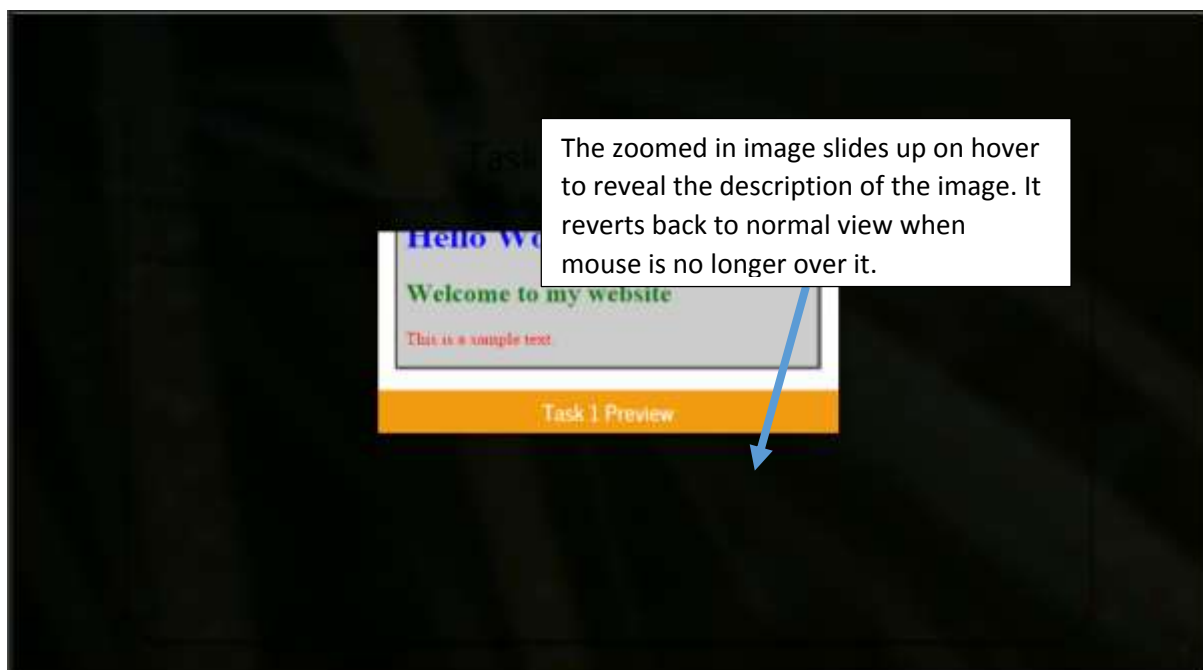
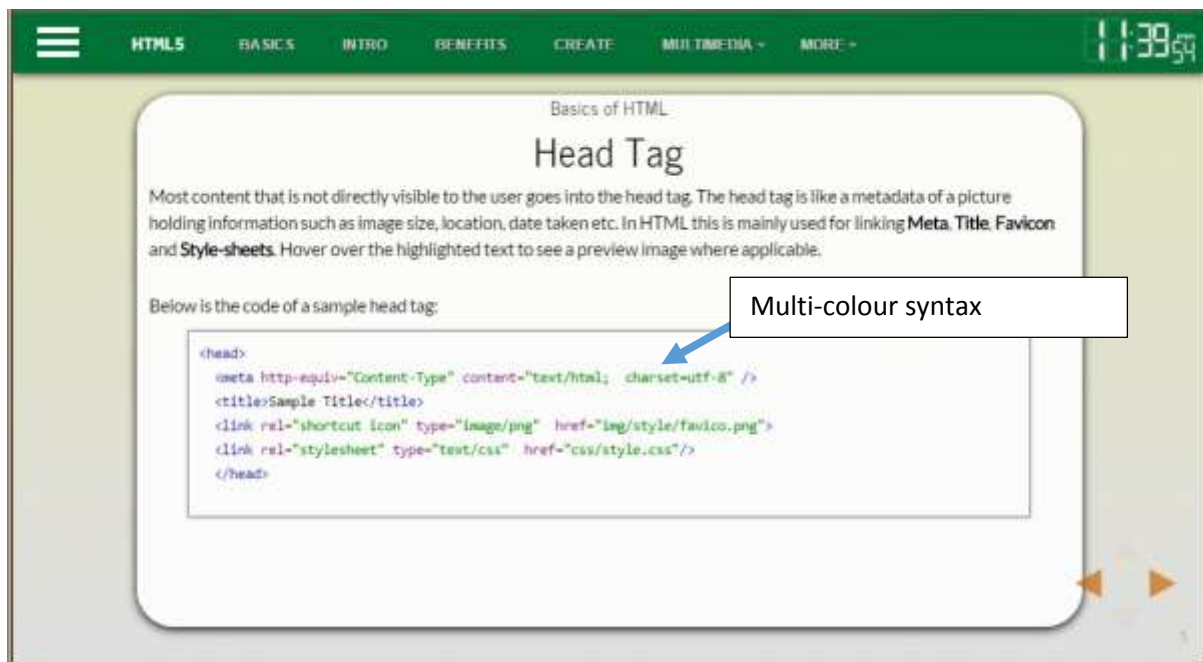
The first slide of the first content can be seen below. Note some content like the logo is hidden to free up some space as the browser window is resized to the smallest allowed dimensions.



I have created all the required content for this section. This means that the first object is now complete and doesn't require any further work. In particular, the client wanted more amount of multimedia which will be shown in later pages. The first section took a significant amount of time due to the videos involved which were two and one of them being created by myself. The second reason was the pictures that I have included in this product and so forth. This section also has two quizzes so extra time was needed to seamlessly integrate the two quizzes without any errors.

I have already included code snippets in my first tutorial and a simple form of multimedia elements like images. The code snippet is further enhanced with the help of Prettify.js which is an open-source third-party library that automatically highlights syntax so that users can distinguish between

different functions or properties. The image has also been updated in prototype 3 and now sports a modern look. Once expanded, the image slides on top revealing the description rather than the description box fading on top of the image. The slide animation is quite useful in enhancing the user experience and will especially appeal to my target audience. I also gathered feedback from my classmates and they too give positive feedback about the new design. As the objective is complete and from the positive feedback from my client (PJH) and other stakeholders, I no longer need to do any development for this objective.



## Objective 2

### Present Status

The second objective is also based on the actual content of the product. It is about creating tutorials that can convey the basic features of CSS3. This will improve on the basic skills developed with the help of the first tutorials and will be designed for those who want to take a step further and learn more about the most popular CSS3 animation effects i.e. transitions and transformations. For prototype 3 I have completely achieved this objective. Below is the screenshot of my final topics which were revised as per the suggestions of the client.



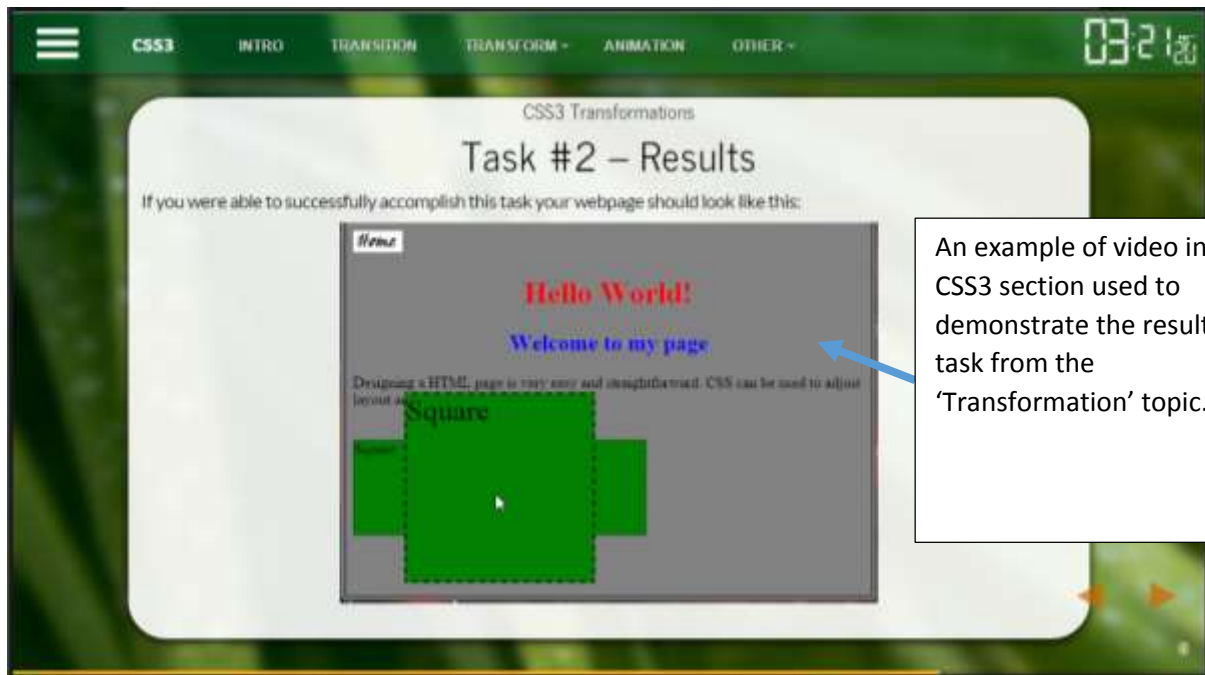
This is why a menu-bar is first created and the content is added later. The topics first give a glimpse of what is coming, then when the actual content is being created any last minute changes made by any of the stakeholders can be accepted and the menu-bar changed. This would not have any significant effect on the content because it is yet to be written. Hence, I believe it was a nice idea to complete most of the content in the last design stage so as to prevent development hours lost if there are any changes to be made in the topic lists.

### Animated Shapes

The major feature that makes my product stand-out and look unique is animated shapes. Because of the nature of my tutorials, it is important that users should be able to see the rendered view of what they are or will be coding. This will help me in two ways. Firstly, the items shown will make it a lot easier for users to understand what it is that they are actually making as they will be able to interact with a 'live example' similar to how students in secondary education get to do practical tasks in science labs. Secondly, it adds an element of interactivity to my website, luring users to use the site more often. This is very beneficial for Year 9 students who are my target audience.

### Videos

There are also videos included in this section just like the HTML5 section. While the first video introduces the user to the basics of CSS, the second video is used as the result of a built-in task. Tasks are present throughout the section and allow for both the end-user themselves and the teacher to effectively monitor the progress and understanding of the users. An example of a video being played on loop (hence no controls required) show the result of one of the tasks. It should be noted that to give the feeling of an 'animated image', video controls are disabled and the video is put on loop. The other reason why it is put on loop is also because it lasts only a few seconds.



An example of video in the CSS3 section used to demonstrate the result of a task from the 'Transformation' topic.

### Objective 3


#### Present Status

The third objective is related to the virtual assistant's ability to provide tutorials tailored to the needs of the user. This has been successfully demonstrated right on the homepage of the product. In prototype 3 I have tested this technique which I extended to be part of the transition between different transitions. The technique I used for the proof of concept of this project was to ask the user whether or not s/he liked the last tutorial, which in this case is 'Basics of HTML'. This is a useful question to ask since many people are likely to complete the tutorial in a hurry but in fact not understand some aspects of it. Hence asking them whether or not they 'liked' the tutorial actually means 'did you understand it?' The two scenarios below describe the outcome when the person says a yes or no. It is worth mentioning that the quiz mechanism is designed in such a way that if the user wants to use the virtual assistant, s/he must pass the quiz in order to unlock the next content. The quiz is designed with the age group of Year 9 in mind so it won't be hard but requires careful understanding of what is being taught. The user has three options: good, ok or bad. Like other conversation terms substitute terms can be used e.g. great instead of good, worst instead of bad etc. A complete list of acceptable vocabulary will be later generated in the user guide. The result of ok and good are very similar and hence only two scenarios will be described below.

In scenario 1 the user replies that he didn't like the tutorials. The virtual assistant then replies that s/he shouldn't worry and then automatically redirects the user to the start of the tutorial. This way the virtual assistant wants people to understand the tutorial and then attempt a quiz.

In scenario 2 the user liked the tutorial. As a reply the user is asked to reply with a short quiz. Within seconds the virtual assistant window closes and the close window is auto-loaded.

#### Scenario 1



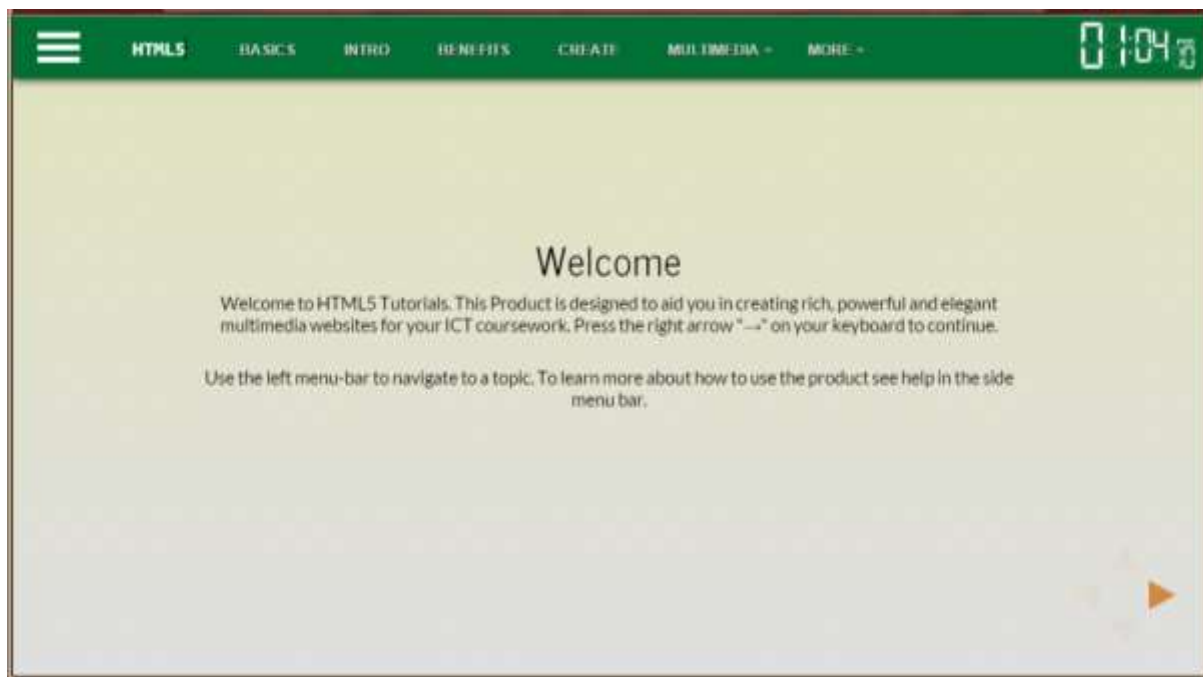
So haaris, how was your first tutorial?

Bad Submit

Don't worry, I'll redirect you back to the intro.

Enter text here Submit





#### Scenario 2

So haaris, how was your first tutorial?

Good

Lets recap with a short quiz!

What is the full form of HTML?

The client (PJH) liked this feature and enjoyed the Virtual Assistant integration. The same was the case with end-users and the senior manager KXP. Now I have decided to keep this feature in my product and effectively use it for quiz purposes as well as an overlook of the product.

This features has allowed me to tailor the content to users to best serve them and hence they can make the most effective use of their time.

#### Objective 4

##### Present Status

The forth object signifies the ability of the virtual assistant to speak and communicate with the user. The purpose of this objective is to make sure that the Virtual Assistant functions properly and is able to speak and accept commands at the least. This objective was tested with the help of questionnaire feedback. Stakeholders were asked in general regarding any audio issue faced when using the virtual

assistant and everyone was able to hear the audio component as well as able to use it in terms of usability. The virtual assistant is able to display the response text as well as play the audio component before redirecting the page. Adding a 3D animated model has meant that this objective has been fully achieved. Further evidence of any work over this objective can be shown from the feedback received from the questionnaires.

Q.7) When the virtual assistant speaks or a message is displayed asking a question, are you able to hear it audio part?

Yes

Q.8) Does the 3D model animate with gestures during a conversation? If 'No' please specify when. Also comment on the looks of the virtual assistant in terms of the colour choice for clothes.

Yes

Q.7) When the virtual assistant speaks or a message is displayed asking a question, are you able to hear the audio part?

Yes it works

Q.8) Does the 3D model animate with gestures during a conversation? If 'No' please specify when. Also comment on the looks of the virtual assistant in terms of the colour choice for clothes.

Yes it animates with gestures.

As this objective has been completed, they are no future plans for it. The only natural extension was to add more question and responses in the virtual assistant vocabulary database. I have now included a few more keywords in the virtual assistant's library. Using feedback from PJH, I added keyboard shortcuts 'y'/'n' for 'Yes' and 'No' respectively. This can allow the users to interact with the virtual assistant much faster and will be a lot easier for those who find it hard to type or have a disability.

## Objective 5

### Present Status

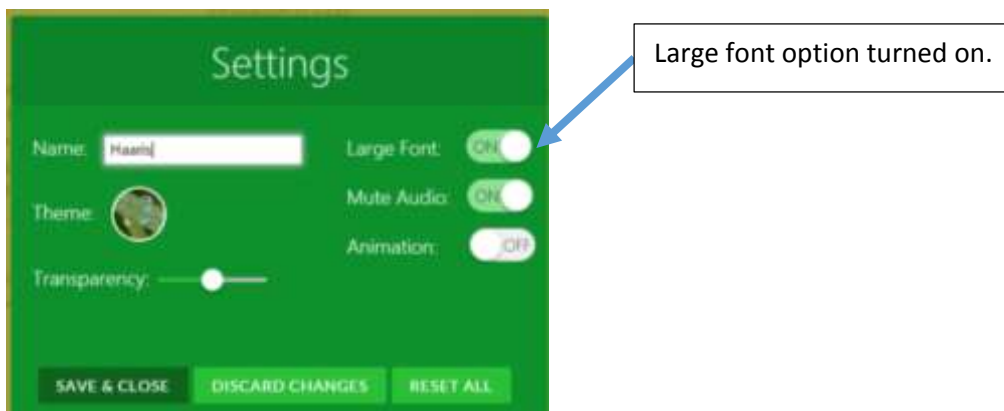
This objective has been extensively worked on for this Prototype. This has now been successfully completed and will come quite handy for the overall appeal of this product. This will firstly include an ability to increase the default font size for content pages. This will improve the user experience for people with reading difficulties such as those with weak eyesight. Secondly it also planned to introduce contrasting colours that either do not like the colour scheme or are colour blind.

### Increased Font

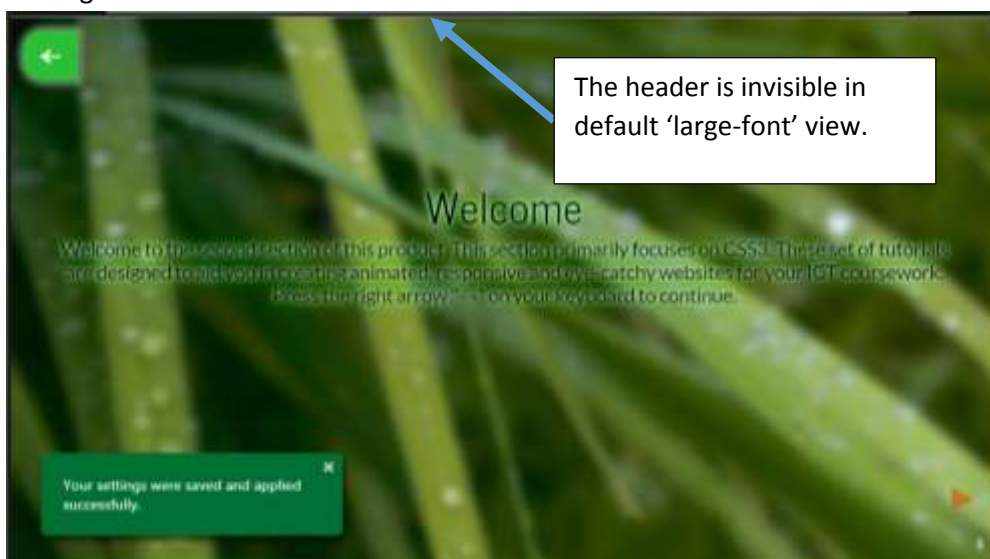
The first feature is the ability to increase the font-size of the content. By doing this, users can more easily read and understand. This will make the product appealing and handy for even those who can't read very small text. Below are few screenshots showing before and after turning on the 'large font' option. This option can be easily accessed from the settings panel. Once the user chooses this option and clicks the save button, the window reloads and the content area of the product enlarges. Since extra space is required for the enlarged area, the main header of the product is pushed upwards to make room for the larger content div (box). A simple press of a button is all that is required to return back to the default view.

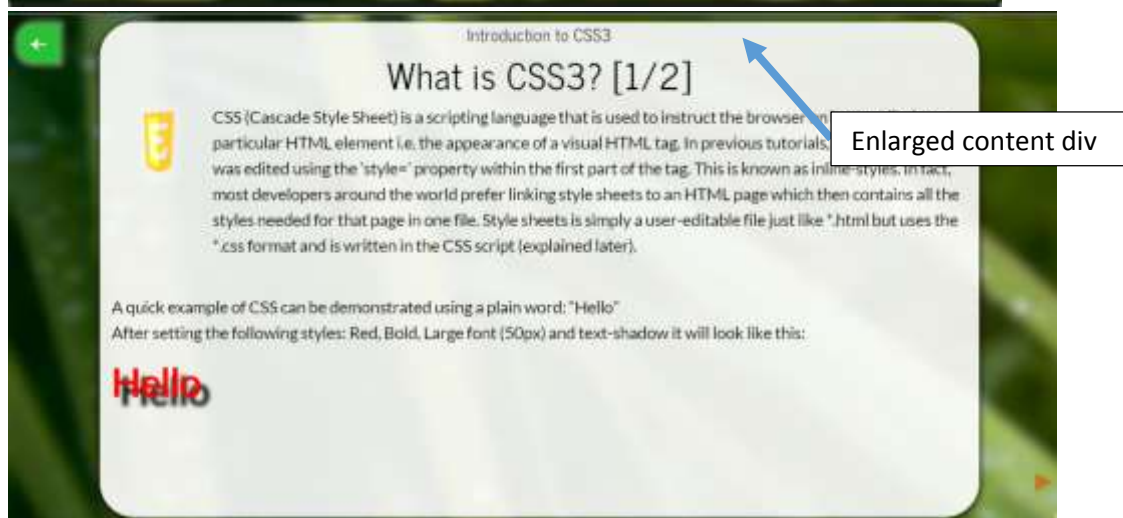
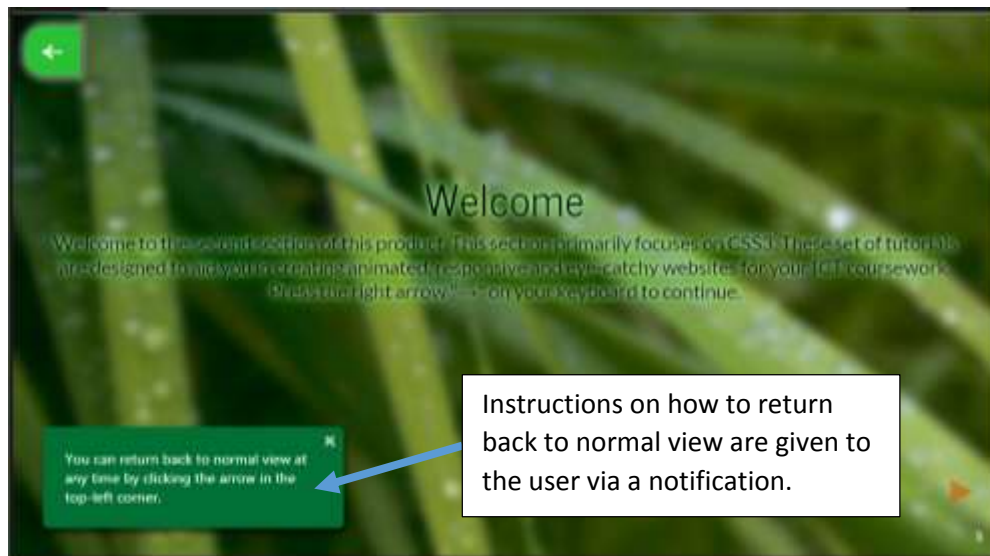
#### Steps involved:

1. The user first chooses the large font option from the settings panel and clicks on 'Save & Reload'.



2. The page reloads and the content div is much larger as well as the font-size. The user is then notified twice. The first notification confirms that the settings were saved successfully. The second one informs the user that s/he can exit the large-font mode at any time by simply clicking on the 'back-arrow' button.





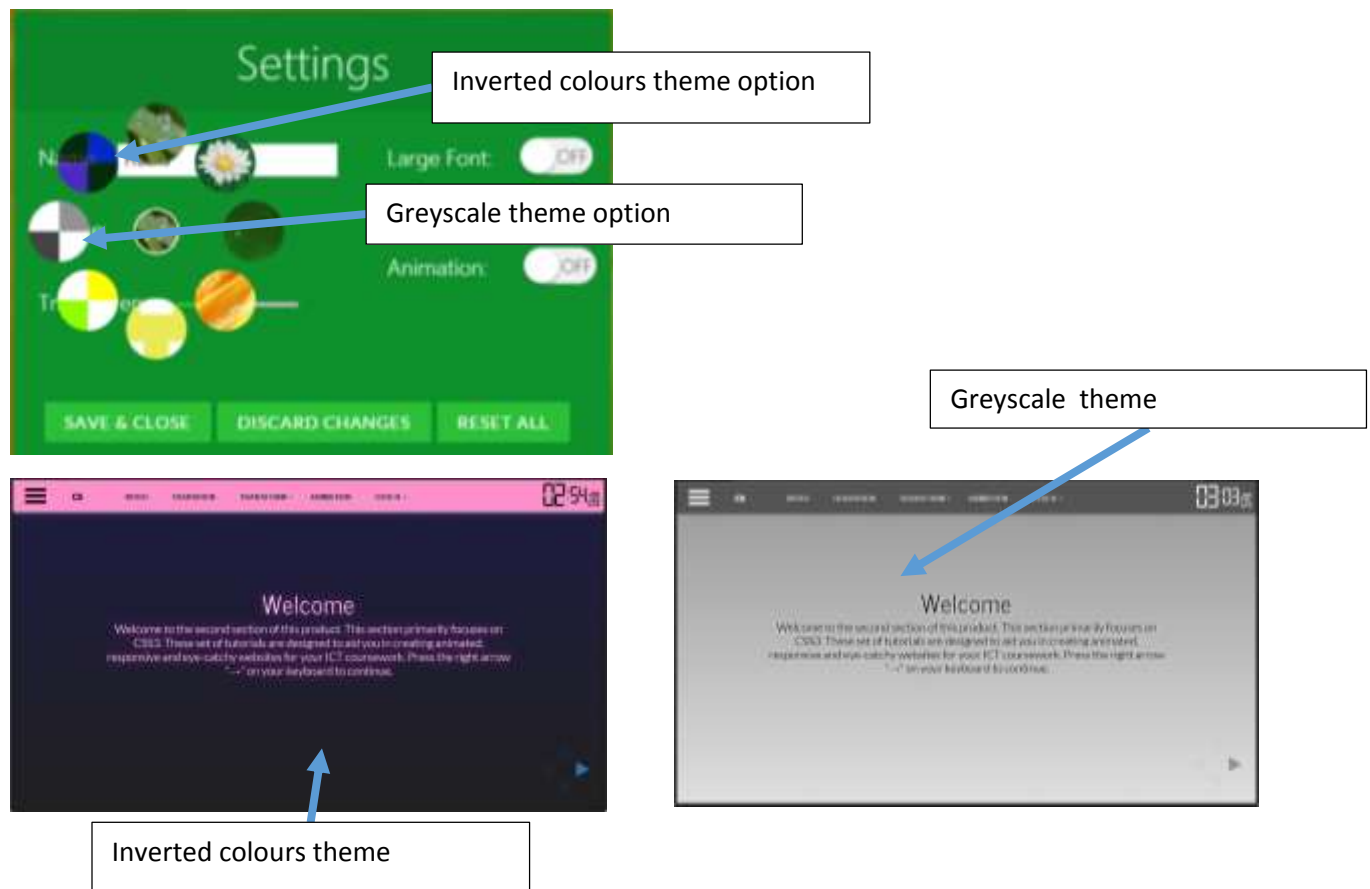
- Once the user no longer wants the large font mode s/he can exit by clicking the back-arrow button.



### *Inverted colours and Black & White Themes*

The second major accessibility option provided in my product is the site-wide inverted colours and black/white themes. The first theme inverts the colour of all elements present throughout the product and come quite handy for those who are colour blind. This would increase the target audience range of my product and even people with a certain issues in viewing content will easily be able to do so according to the settings. The second theme does exactly the same but instead of inverting the colours, it turns them into greyscale. Now they are several other benefits of this beyond the scope of accessibility. For example if readers don't like bright colours or their eyes are hurt due to injury or simply because of low ambient light, the users have the option to toggle back-

and-white view to which will be better on their eyes. Other themes can be chosen from the settings panel and their steps are similar to the large-font mode but instead of a return button, the user has to manually change the theme back to one of the normal coloured ones from the same settings panel as all controls are still accessible in the aforementioned themes.



## Objective 6

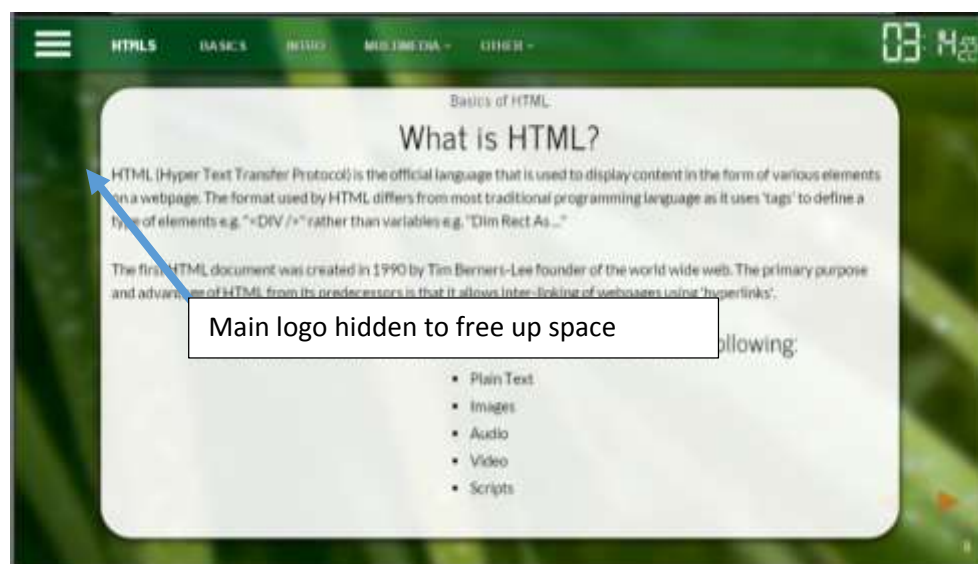
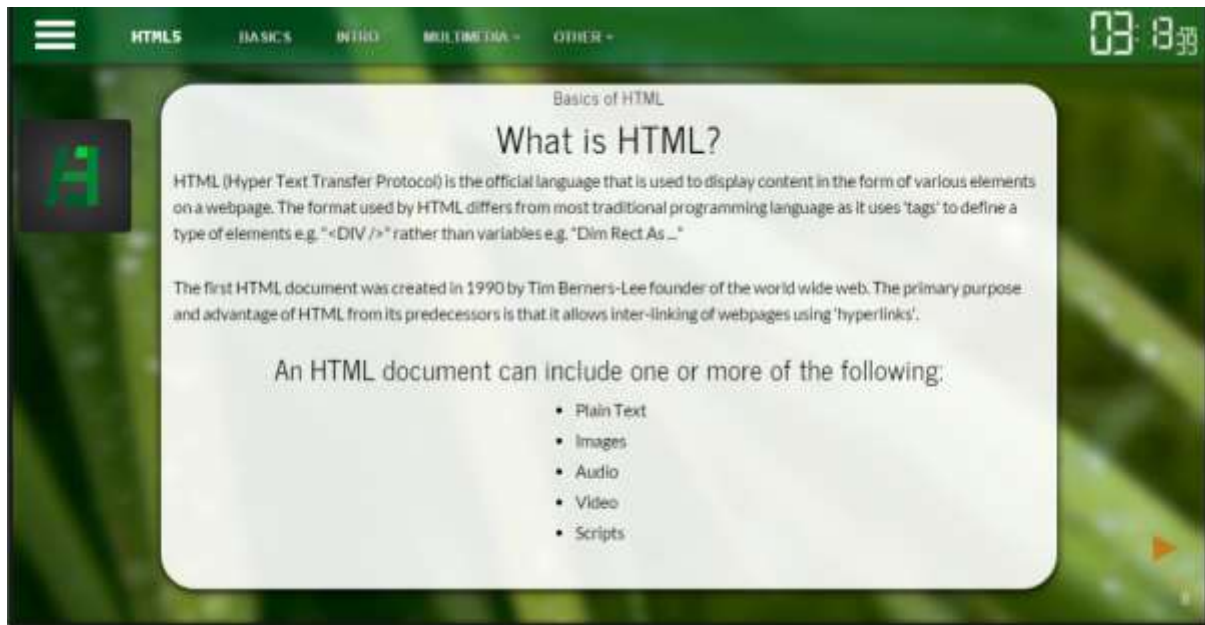
### Present Status

This objective has an important purpose and it is essential to complete it early in the development stage since it is related to the design and aesthetics of the product. It states that the product should be viewable at different screen size without compromise on the user experience i.e. maintaining the same ratio and relative sizes of the content. This simply means that in the case of two users, one having a screen-size of 1600x900 and the other having a 960x540 screen, the product should fit on both screens where more space will be available for secondary content on the second screen but not for the 960x540 screen. This means that even though the second person will be able to view the primary content which in the case of the product is the tutorial, it will be slightly zoomed out to fit the screen without requiring the user to scroll either horizontally or vertically. This has huge significance as the user of a smaller screen resolution won't require to do any scrolling. Furthermore, users will be able to read through the content on different displays while maintaining the aspect ratio so that they are not image or element distortion. In order to prevent the content to become too small there are some restrictions placed on the dimensions of the product. If the users access the product on a screen resolution below qHD (960x540) scrollbars will appear. This is a design choice to ensure that content doesn't become too small that they are unreadable or that they span out of the bounds of the window and users have no method to view them. In fact, almost all of the



users accessing this product for 2014 and beyond will already have HD ready monitors or laptop displays which is a resolution of 1280x720

There are two screenshots on the next page showing dynamic content resizing. When the window size is reduced to a minimum accepted level, the content box and font-size shrinks while the logo disappears to make room for the content box. The font-resize effect is subtle and not noticeable unless it is viewed on a high resolution display. This means that whatever the resolution, the user will have the same reading experience.



This content resizing can also be seen on the main homepage. For example when a user sets the browser size to qHD, the virtual assistant font size is reduced and the input box is placed underneath it. Similarly, when the window is resized to greater than 1280 pixels wide, the font size is increase to make use of the extra available space. Furthermore, at this resolution the input box is placed in the same row as the output text of the virtual assistant.



As this objective has been agreed upon by the client it won't be developed upon any further.

## Objective 7

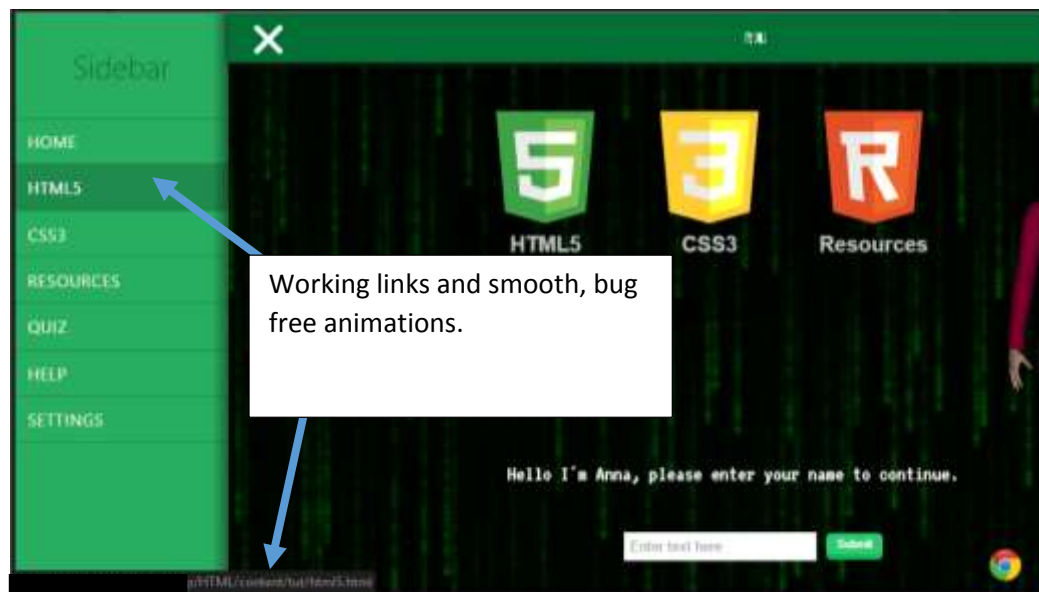
### Present Status

#### Menus

The purpose of this objective was to make the navigation easy-to-use and accessible by everyone. This means that the navigation bars must be placed appropriately which is also easy to reach. The menus should be clearly visible so that users can use it whenever they need to. This element required a lot of planning and after putting forward various ideas, the client (PJH) and I agreed on having two menus: one that will be fixed and the other one dynamic.

The main menu bar is used site-wide for navigation purposes. The icon representing three bars resembles most modern smartphone menu icons where space is a concern and is also similar to the menu bar icon of Google Chrome, the browser on which the product will be viewed. Hence, this button will be easily accessible and will allow users to navigate to the main links for easier accessibility. Upon clicking on the button, an animation slides the page to the right, making room for the side menu bar which is shown as 'hidden menu-bar' on the layout above. From here users can able to click on the following links: Home, HTML, CSS3, Resources, Quiz, Help and Settings. These links are direct links i.e. they will redirect the user to a completely new page. This is because they are the main sections and therefore there might be structural differences across various different sections. For example the layout present in the quiz section may not be suitable for the content

section. If the user wishes to return to whatever he/she was, a simple click of close button is all what's needed. To make the design stand-out, the menu icon itself animates into a close icon and vice versa.



In addition to the hidden menu bar, there is another menu bar present in the content pages. Its primary purpose is to display links to the various topics present in the current section. Hence it is a dynamic menu that changes its content across different sections. For example when the user clicks or is navigated to the HTML5 section, the menu bar will read: “Basics, Intro, Multimedia ...” whereas a CSS3 section would display: “Intro, Transition, Transform ...”. The purpose of having a content menu bar is so it is an easy method to jump between topics.

I chose to have two menus instead of one because the side menu bar isn't very suitable for multilevel menus, however a horizontally structured menu bar has a nice presence and can ergonomically be used for multilevel menus by hovering over it. This is where the content menu bar will extend its functionality by having a yellow bar displayed under the current link hovered by the user. From the design above the yellow bar shown below the 'Basics' link mimics this idea. This way the user will be better informed of what option he/she is going to select when they click the mouse button. The content menu bar also has an audio 'beep' effect on user hover. This functionality improves the usability of the product and make it sound more attractive.

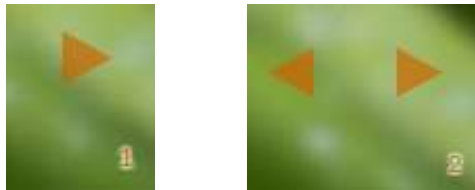


### Slide Navigation

The navigation controls also play an important role in the layout of the content pages. I have used a slide layout with animations displayed when the slide is changed. This is achieved by giving it a 3D perspective flip effect. This would make the tutorials more interesting and interactive. The

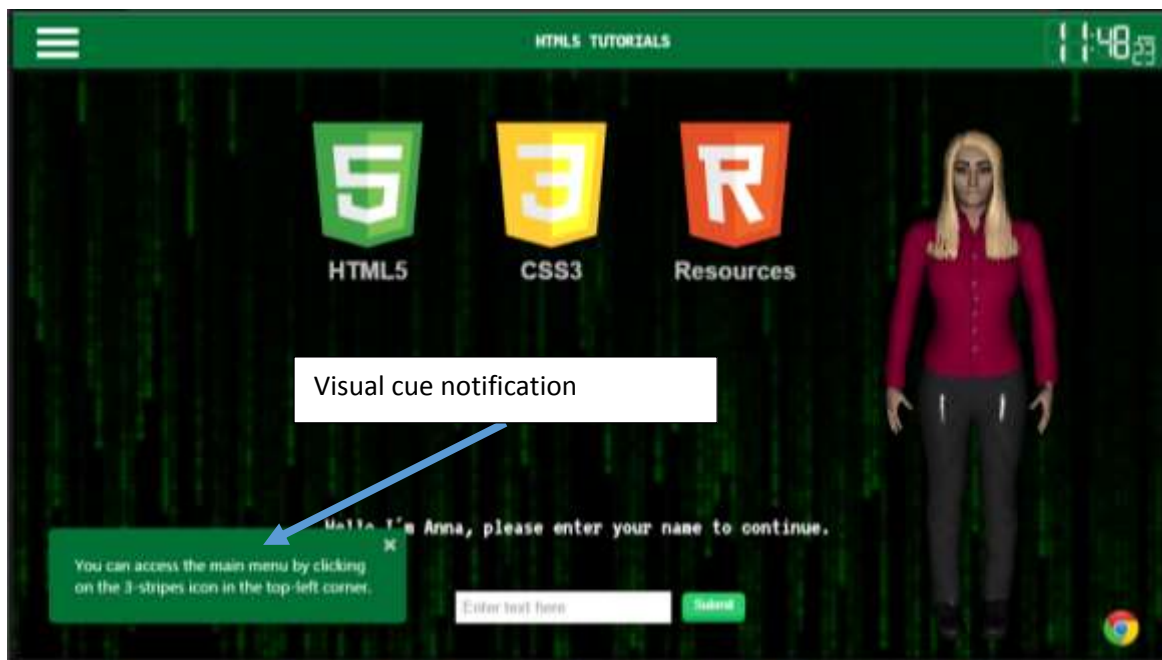


navigation controls are: left, right, up and down arrows. The controls originate from an open-source presentation library that I would be using to display the transitions between slides. However, I am free to control the look of the controls. Presently I have coloured them yellow/gold which would fit well in with the rest of the colour scheme as well as the school house styles. Right next to the controls, in the bottom-right corner of the page the page number is displayed. This enhances the functionality of the product by letting users know which page they are on. Apart from using on-screen controls, familiar keyboard users are also be able to leverage keyboard shortcuts i.e. left, right, up and down arrows. This enhances the accessibility of the slides and makes it more compatible with different forms of input.



In prototype one several respondents slightly disapproved the side-menu bar (also known as the main menu bar). This is because they felt that it wasn't very discoverable while one of the respondent also felt it to be hideous. This is because of the nature of the menu bar. In normal menu bar it is never noticeable that a hidden menu bar exists. However, the three-bar menu has become a recent web standard and is especially frequently used to access menus on a smartphone where space is cautious. This would make it easy to discoverable. However, there might be a substantial amount of users who won't be familiar or comfortable with hidden menu bars. These people will be able to learn about it with the help of a user guide. As planned and suggested by a respondent it will be far more useful to include a system of informing the user that s/he can access the menu bar by clicking on the appropriate icon. While implementing this feature can be greatly useful, it must be designed carefully so that it fit in the aesthetics of the rest of the designs and don't cause much hurdle to end-user. This can be don't by only displaying the notification for a certain period of time and don't block user input while it is displayed. At the moment most of the work on the navigation is complete and further enhancements will be made based on the questionnaire as aforementioned.

Finally, a notification popup system has been implemented into the product and a notification should now appear informing users to test out the main menu bar. The notification appears and then automatically closes within few seconds to not cause much distraction. A popup sound is also played simultaneously for about a second.



## Objective 8

### Present Status

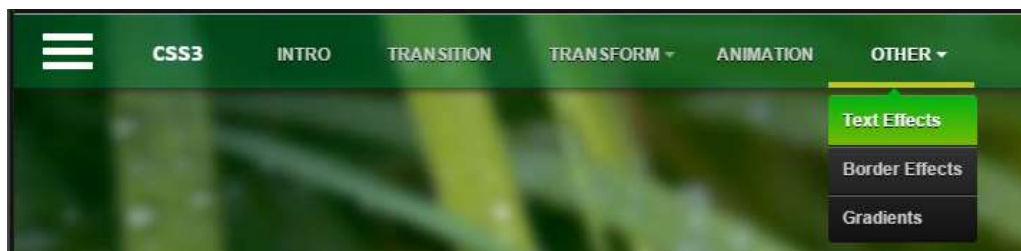
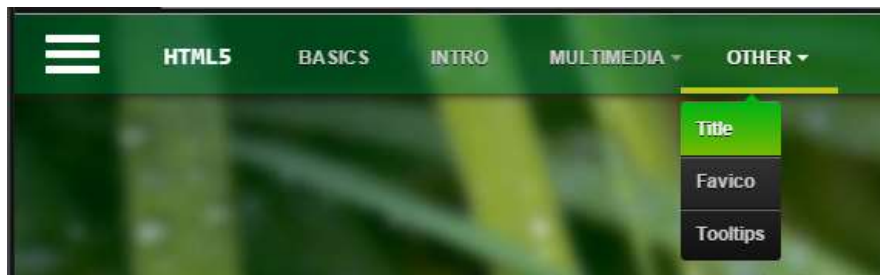
This objective requires me to add content that others can benefit from. These people should not only include the primary target audience but also Year 12 students and teachers who should be comfortably use the product as a reference. According to the objective I had to create a product that only meets the requirements of the target audience but is also useful for a higher age group as well as for teachers. The scope of this objective can only be given by the help of questionnaires but personally, I believe that I have included enough content for everyone. One of the few user case scenarios is the code blocks which allow users to understand complex languages directly for those who wish to master HTML. These code blocks allow users to directly compare what is being taught in the tutorials. The code blocks also have an added benefit which is that they can be copied and pasted to the end-user's HTML/CSS file directly, allowing for quick content delivery without much hassle. An example of the code block of the head tag is shown on the next page.

Below is the code of a sample head tag:

```
<head>
  <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
  <title>Sample Title</title>
  <link rel="shortcut icon" type="image/png" href="img/style/favico.png">
  <link rel="stylesheet" type="text/css" href="css/style.css"/>
</head>
```

Furthermore, I've got additional topics in both of the sections in my product i.e. HTML5 & CSS3. These section are out of the syllabus context but they still act as icing on the cake and allow users to further enhance their tutorials. This in particular would come quite handy for Year 12 students who are tasked to create an eBook as part of their coursework. The two screenshots below show the

respective sub-topics in the HTML5 and CSS3 sections alike. All of these sub-topics were chosen because even though they didn't have a huge impact on the design aspect of one's aspect, they can make a user's eBook or coursework task stand-out against others.



## Objective 9

### Present Status

Multimedia is a large part of my product. It enables my product to stand out as well as look attractive. This is also a part of the product that will be continuously developed throughout the year. This is because it takes considerable time and effort to include well-chosen animations that are a balance between simplicity and elegance.

### Audio

I have included audio in the form of conversational replies by the virtual assistant and beep sound on hovering over a menu item. The reason for having an audio feedback is because it gives a nice after-effect when a user hovers over a menu item. This way users can be made aware that they are going to select a different element than that they intended for.

Furthermore, I have now included a new background score on the homepage that I have created by myself using various instruments and sample loops. The score will give users a unique yet different approach to music and will differentiate from other products. On top of that, the user's will be more attracted towards this core since they can't listen to it anywhere else and it is exclusively available only in the product.

Apart from creating my own background score, I have included the instrumental versions of about 6 popular songs from various genres and release years in my product. These will be played back-to-back when the user visits either of the content pages. To prevent users from being bored by listening to the songs in the same order every time, I have also included a 'shuffle' function which randomises the song 'playlist' every time the page is reloaded. The reason why I chose instrumental versions of the track is so that only the background score is heard and the user can still focus on the tutorials. If I

used full version songs, they would be of a larger file-size and possibly distract users while they are following the instructions set in the tutorial.

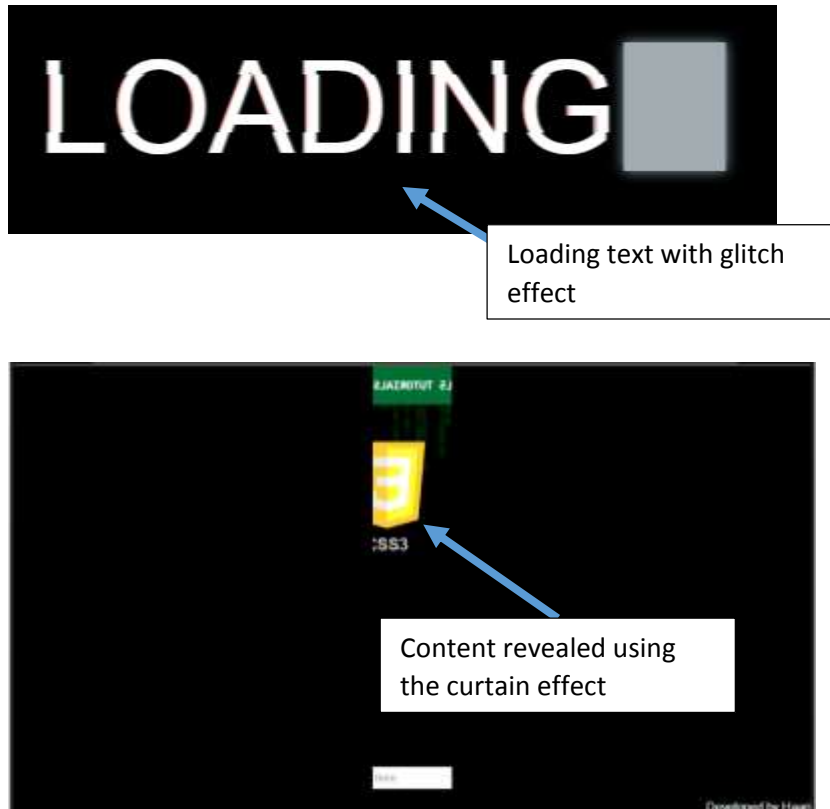
### *Animations*

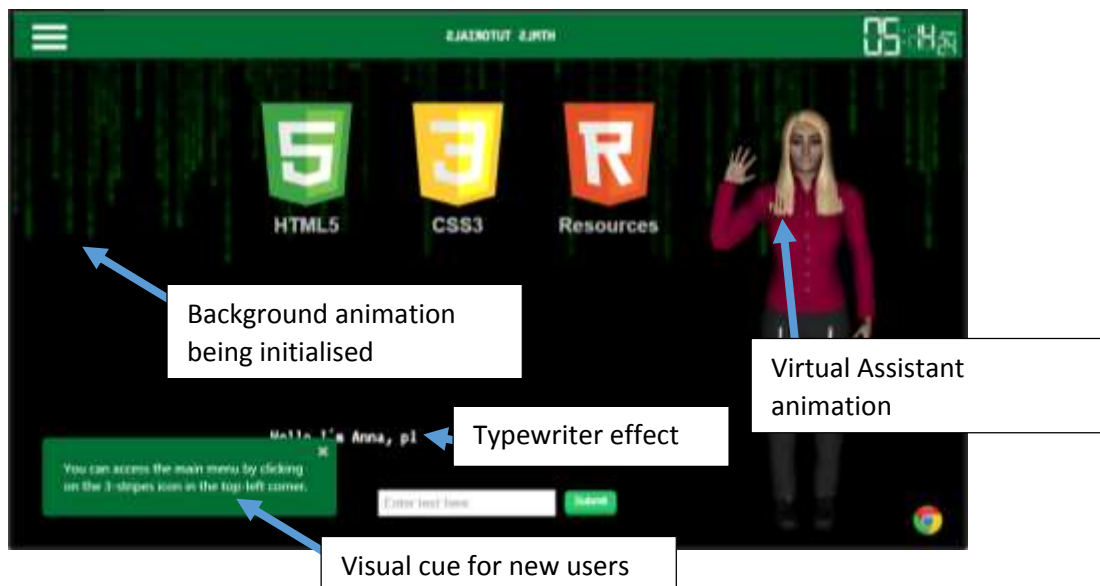
Animations are spread throughout and can be seen across different areas of the animations. The current animations are described as follows:

#### 1) Loading Glitch & Curtain Effect

As one of my suggestions for Prototype 3 was to reduce loading times, I thought of redesigning the loading page layout and making it look cleaner, simpler and of course faster. To achieve this, I opted for a glitch effect for the loading text which will be the first thing that the user looks at when he/she opens the product. Hence, a distinctive text for chosen for this case. As soon as the page completes loading which takes at least a few seconds due to the limitations of the browser and the large file size of the 3D model that has to be parsed, the loading text disappears with a cursor wipe-out effect commonly found in game loading screens and older dos-based computers. This gives it a feel of the coding world. After the text has disappeared, the background splits into half and pulls apart from the centre revealing the background. The background is in fact the main homepage of the product.

The first screenshot shows the page being loaded. Here the text 'Loading' with a glitch effect is shown. The loading is done in the background to provide a seamless experience. After loading has been completed, the user is greeted by an animated 3D model along with background matrix animation. This can be visible on the second and third screenshot.





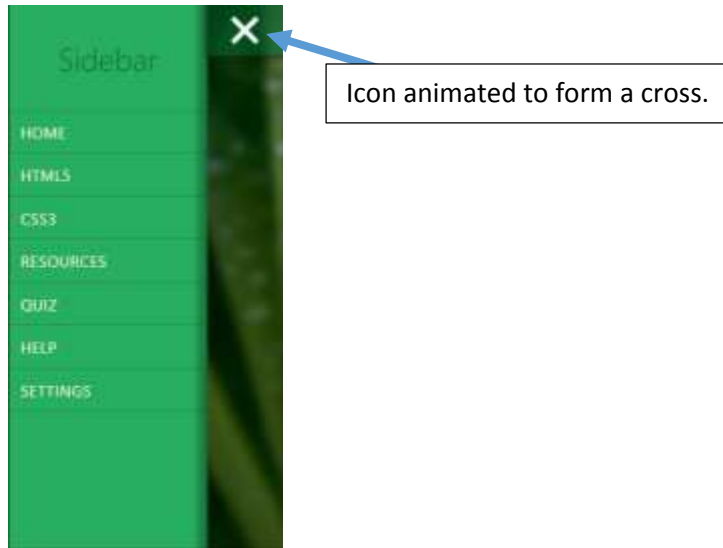
## 2) Matrix Background

As per the requirements of the client (PJH), I have created a matrix effect in the background of the homepage which gives it an intuitive and classy look. There are a wide variety of animations that can be possibly used. For the purpose of the tutorials as well matching the overall colour scheme of the product, the client (PJH) suggested using the matrix effect on the background. To ensure that the text is legible while the animations are being played in the background and that it doesn't cause any dizziness, I have blurred out the animations. The blur will also prevent users from being distracted by moving text. The animation will give a feeling into the world of coding while not removing the users attention away from the content. The matrix background covers the entire screen and includes a user-friendly auto-function to fit to window on resize so that users are able to adjust the browser's dimension without breaking the code e.g. causing whitespace.



## 3) Hamburger Menu Icon & Main Menu Bar

The main menu icon with 3 bars on the very top left of the screen is also animated. This helps it to function as a dual-function button. On pressing the icon, the page pans to the left and the menu bar appears without any hindrance. As visible from the screenshot the three bar icon changes to a cross button which signifies the user to press the same button to close the menu bar.



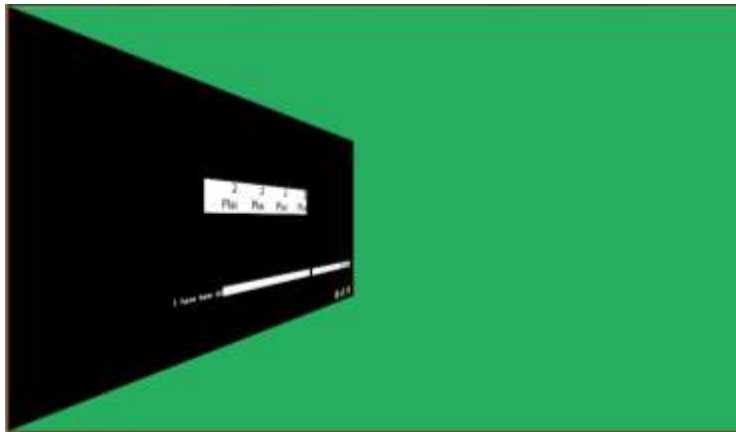
#### 4) Main Logo



The logo acts as a corporate symbol. It represents the product and can be used in a variety of ways including favicons. Due to its nature, the logo maybe changed between successive prototypes as per the demands of the client (PJH). The logo will incorporate a hover effect which will cause it to flip on hover. This would enhance its functionality and making it interactive at the same time.

#### 5) Page Enter and Exit animations

These are special type of subtle animations that are only played when a user loads and leaves a page. This means that they will only be played when the entire page is navigated. They give a feel of seamless design. This can be said because in the screenshot below a shade of green is visible in the far background. This is the default colour of the 'html stage' currently in the product. When a user enters and exits a page the same background appears at the start and end of the page load/exit and hence it seems like it is just loaded within the same page whereas it isn't. This can be quite useful when you want users to be redirected to a new page or open a hyperlink within the product. With the help of these animations the appearance of white coloured backgrounds that are common between page loads can be eliminated.



#### 6) Animations between slides

When a user clicks the right button for the next slide, or even the left button for the previous slide, the new/previous slide will appear animated. This will be achieved by giving it a 3D perspective flip effect. These animations are built-in to the third-party presentation library that I have implemented in my product. These effects will make the content feel more live and interactive as well as giving a slideshow effect.

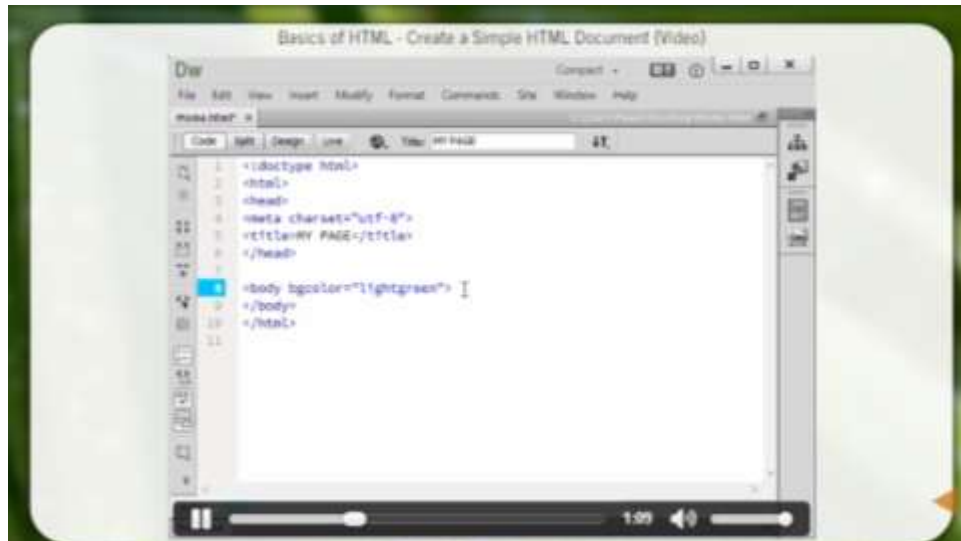


#### Videos

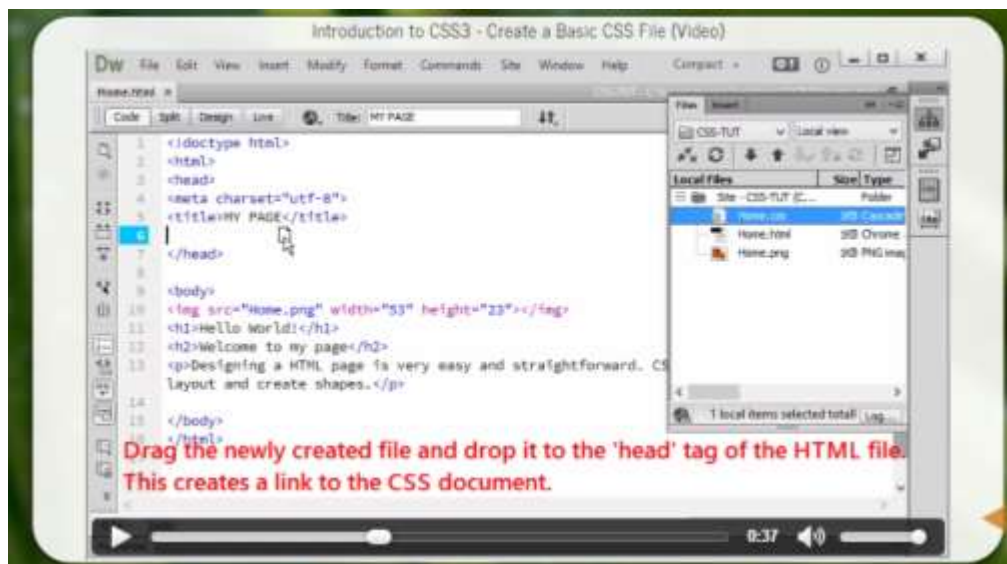
In prototype 3, I have included four videos throughout the product, two for each section. The videos are primarily to help first time users in getting started with the software that is used to create \*.html pages and \*.css stylesheets. In the first video, I record a screen-cast of my computer showing the end-users how to create a new HTML file, add some text and other content to it and display it in the browser. For this tutorial I also included voice-over which will allow the tutorial to be much more effective as it will give both audio and visual cues on how to perform a task. The second video is created by a third-party and taken from the internet and it is present in the product because it gives a brief overview of what HTML5 really is, allowing users to have early interest. The third video is also created by me and it showcases the purpose of CSS3 by showing step by step on how to create, edit and link a CSS stylesheet; essential for all further tutorials. To use a different approach, I included subtitles and increased the background score volume in this particular case. The last video served as



a lopped result of one of the tasks. As they are a lot of animations present in the core of CSS3, the task results also need to be animated in order to get an accurate picture of how the 'answer file' should look like. Hence a video comes in quite handy for this purpose. As the video was very short (lasting only a few seconds) there was no need to add audio. I also didn't include any controls because the video should be viewed as an 'animated gif' rather than a video file. Below are the screenshots of each video in the order specified above.





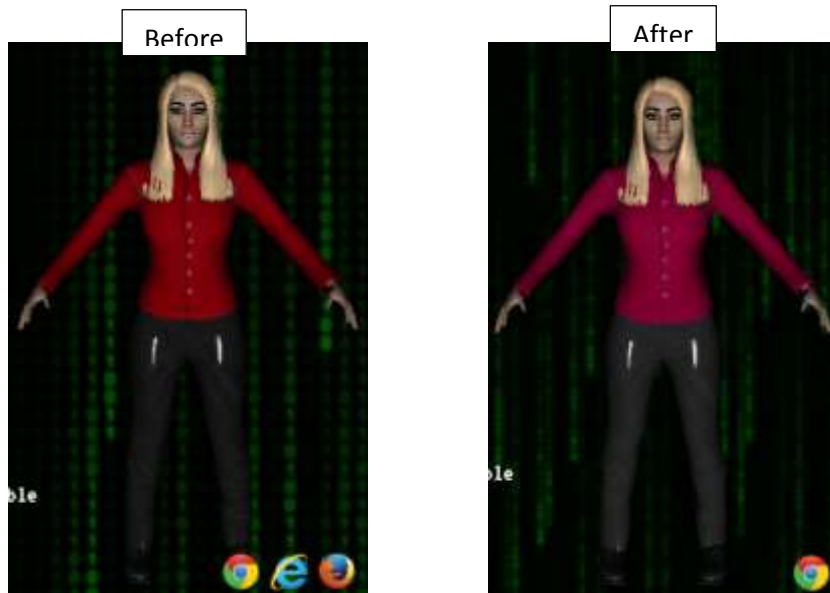


## Objective 10

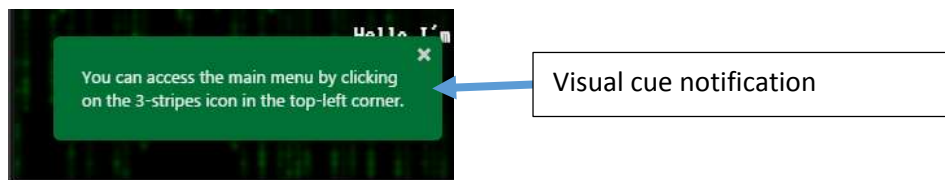
### Present Status

My last objective is to act upon feedback provided from the client (PJH) and other stakeholders. This is essential because I have to realise that the product must be created based on the guidelines set by the client (PJH) because it is created for him. I've already had three meetings with the client (PJH) where I discussed about various features, errors and improvements. The senior manager (KXP) has also given substantial advice for improvements and I have also taken that into account.

An example where I acted upon feedback from stakeholders is when my senior manager KXP disapproved my use of black trousers for the 3D model as it was difficult to distinguish between the black background and the trousers. I have changed the tint of the trousers to a grey shade making it much easily recognizable.



The second most requested feature was a visual cue for the navigation bar which was asked from end-user RLD and ML as well as my client PJH. In prototype one several respondents slightly disapproved the side-menu bar (also known as the main menu bar). This is because they felt that it wasn't very discoverable while one of the respondent also felt it to be hideous due to the nature of the menu bar. Finally, a notification popup system has been implemented into the product and a notification should now appear informing users to test out the main menu bar. The notification appears and then automatically closes within few seconds to not cause much distraction. A popup sound is also played simultaneously for about a second.



## Time Management

From the very beginning it was important that I manage my time efficiently in order to complete the tasks by the given deadlines. Since I chose 4 A-Level subjects at the start of Year 13, I generally found it challenging to spare a lot of time for ICT. Therefore, I divided my time equally among each subjects and more often did some coursework on each day of the week. I also made most use of my time at school. For example, almost each day, I spent a small amount of time on the coursework early in the morning. Moreover, I also made efficient use of the free time available during lunch breaks. Additionally, I spent more than an hour each day during weekdays on the coursework so that I would be able to complete it on time. I wasn't always able to spend time on coursework during mock examinations. I tried to complete most of my tasks before mocks for other subjects so that it won't lead to a hassle on other days. Lastly, I made most of my time during weekends. I also made effective use of the Gantt chart. At the start of the year I carefully planned about all the main aspects of development. I continued to keep it up-to-date and use it as an encouragement to finish the tasks on the deadlines I had set. I was also able to have my meetings earlier than the required time so that I can effectively act on the feedback provided and reflect upon it in this evaluation.

For prototype 3 I had to spend more time in fixing bugs. The technique I used was that I tested the content as I created it and fixed it along the development phase. This way I didn't have to waste time fixing a lot of this that didn't work. I also had a few compatibility issues with older code or designs that were incompatible with some of the new layouts. To fix this I checked all aspects of the product from the beginning to fix any errors.

## Meetings

For my meetings, I tried to hold my meetings at regular intervals so that I wouldn't burden the stakeholders with multiple meetings in the same week. We only had slightly greater than 2.5 months for prototype 3 so time was very scarce. I generally tend to hold meetings every alternate week however the dates were different in reality as I tried to follow the dates I specified on my Gantt chart. In terms of numbers I was able to hold two client meetings with PJH, two senior manager meetings with KXP, one peer-reviewers meeting with RS, MU & MC and one end-user meeting with RLD and ML. During all my meetings the client and senior manager especially approved my previous minutes before starting the new meeting. They were also able to give me worthwhile advises on different aspects of the product. I have already acted on most of the feedback and will surely act on the rest for the next prototype. The things discussed are written in minutes for each meeting. The minutes are written in such a way that even if no one knows about ICT s/he can still understand what went on about during the meeting of product manager (me) and stake holder.

## Client's Requirements

For prototype three, the client (PJH) had requested me to create add all the remaining content in the product. He also told me to use effective evaluative methods in the product for example quizzes. I replied that this was my original plan according to the Gantt chart. Furthermore I will also include a type of evaluative feature which will be called 'tasks'. In a task, I will set guidelines for users to follow on creating a particular HTML page along with CSS. I will instruct them in what to add inside and how it should look. Next I will show them a screenshot, animated gif or short video clip demonstrating how the resulting task should look like. With effective communication I was able to demonstrate the ideas that I prefer as well as remain open to what the client requires. For example the client's requirement was to design the product using Wood Green colours which can be seen as a reflection of my product. I have successfully achieved this task with the themes option included in my product. Users can now choose from green, yellow, mixed, greyscale and inverted colour themes. The product's content has been completed successfully with rich animations present in the CSS3 section. Animations were another requirement by the client for this product which has been added just recently. This will not only allow the user to efficiently understand the topic but will also give my product more interactivity overall. Lastly, I was required to create a quiz that can test users on the information they just read about while an animated quiz would provide a further engaging experience by catching the user's interest. By adding a pass/fail system I believe the quiz would have an element of challenge and will surely make users take the tutorials seriously. I have successfully completed this task but am already planning to not stop here and add more number of quizzes each designed in a unique way.

## Questionnaires

## Scans

Haaris Osman Mehmood 8155 20675

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## Questionnaire Prototype 3

Q.1) Please choose your current role as a stakeholder.

☒ Senior Manager  
☒ Client  
☐ Peer Reviewer  
☐ End User  
☐ Supplier

Q.2) Briefly describe your first impression of the homepage.

Very creative and original

Q.3) What is your opinion on element animations (loading screen, main-menu bar, header, section logos, response text and buttons)?

☒ Impressive  
☐ Good  
☐ Average  
☐ Poor  
☐ Irrelevant

(If below average please specify)

Q.4) On a scale of 1-5 (low-high), how effective is the current colour scheme in giving a familiar feeling of Wood Green Academy?

5 / 5 (If 2 or less, please elaborate why)

Q.5) Please choose the most suitable description of the font and font-size used. You can tick multiple choices if relevant.

☒ Allows perfect readability whilst maintaining a modern, clean look  
☐ Apart from a few readability issues, the font is eye-catching and highly preferred  
☐ The paragraph font-size can be made larger/smaller (cross out as applicable)  
☐ The font doesn't match the rest of the design scheme at all and will require some rethinking  
☐ It is impossible to read any text on my display

(If 2<sup>nd</sup>-5<sup>th</sup> option is chosen please elaborate further.)

Haaris Osman Mehmood

8155

20675

Q.6) Are there any broken links throughout the website? If 'Yes' please specify.

All links work

Q.7) Are all three videos played back properly on your computer (including the audio part)?

All videos at suitable quality

Q.8) Does the 3D model animate with gestures during a conversation? If 'No' please specify when.

The responses are good as if the instructor

Q.9) Are you able to complete the HTML5 section, its quiz and then resume to the next section (CSS3)? Please rate the quiz on a scale of 1-5 (low-high).

5/5

(If 2 or less, please elaborate why)

Q.10) State any feature(s) that you disliked about the product. You are free to suggest improvement(s) based upon them.

More flash animations e.g. SWF's or the HTML equivalent. Also, the theme could be changed e.g. customised

Haaris Osman Mehmood

8155

20675

## Questionnaire Prototype 3

Q.1) Please choose your current role as a stakeholder.

- ☐ Senior Manager
- ☒ Client
- ☒ Peer Reviewer
- ☐ End User
- ☐ Supplier

Q.2) Briefly describe your first impression of the homepage.

Matrix-themed background fits the colour scheme well

Q.3) What is your opinion on element animations (loading screen, main-menu bar, header, section logos, response text and buttons)?

- ☒ Impressive
- ☐ Good
- ☐ Average
- ☐ Poor
- ☐ Irrelevant

(If below average please specify)

Q.4) On a scale of 1-5 (low-high), how effective is the current colour scheme in giving a familiar feeling of Wood Green Academy?

4/5

(If 2 or less, please elaborate why)

Q.5) Please choose the most suitable description of the font and font-size used. You can tick multiple choices if relevant.

- ☒ Allows perfect readability whilst maintaining a modern, clean look
- ☐ Apart from a few readability issues, the font is eye-catching and highly preferred
- ☐ The paragraph font-size can be made larger/smaller (cross out as applicable)
- ☐ The font doesn't match the rest of the design scheme at all and will require some rethinking
- ☐ It is impossible to read any text on my display

(If 2<sup>nd</sup>-5<sup>th</sup> option is chosen please elaborate further)

Haaris Osman Mehmood

8155

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Q.6) Are there any broken links throughout the website? If 'Yes' please specify.

Yes on home page and resources  
section

Q.7) Are all three videos played back properly on your computer (including the audio part)?

Yes

Q.8) Does the 3D model animate with gestures during a conversation? If 'No' please specify when.

Animations are a bit choppy  
but otherwise good.

Q.9) Are you able to complete the HTML5 section, its quiz and then resume to the next section (CSS3)? Please rate the quiz on a scale of 1-5 (low-high).

Yes, everything works well

5/5

(If 2 or less, please elaborate why)

Q.10) State any feature(s) that you disliked about the product. You are free to suggest improvement(s) based upon them.

The user's name could be capitalized  
when talking to assistant.



Haaris Osman Mehmood

8155

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## Questionnaire Prototype 3

Q.1) Please choose your current role as a stakeholder.

- ☐ Senior Manager
- ☐ Client
- ☒ Peer Reviewer
- ☐ End User
- ☐ Supplier

Q.2) Briefly describe your first impression of the homepage.

Very good, I very much like the static effect  
on the loading screen, looks futuristic.

Q.3) What is your opinion on element animations (loading screen, main-menu bar, header, section logos, response text and buttons)?

- ☒ Impressive
- ☐ Good
- ☐ Average
- ☐ Poor
- ☐ Irrelevant

(If below average please specify)

Q.4) On a scale of 1-5 (low-high), how effective is the current colour scheme in giving a familiar feeling of Wood Green Academy?

4/5

(If 2 or less, please elaborate why)

Q.5) Please choose the most suitable description of the font and font-size used. You can tick multiple choices if relevant.

- ☒ Allows perfect readability whilst maintaining a modern, clean look
- ☐ Apart from a few readability issues, the font is eye-catching and highly preferred
- ☐ The paragraph font-size can be made larger/smaller (cross out as applicable)
- ☐ The font doesn't match the rest of the design scheme at all and will require some rethinking
- ☐ It is impossible to read any text on my display

(If 2<sup>nd</sup>-5<sup>th</sup> option is chosen please elaborate further)

Haaris Osman Mehmood

8155

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Q.6) Are there any broken links throughout the website? If 'Yes' please specify.

There are no broken links

Q.7) Are all three videos played back properly on your computer (including the audio part)?

Yes

Q.8) Does the 3D model animate with gestures during a conversation? If 'No' please specify when.

Yes

Q.9) Are you able to complete the HTML5 section, its quiz and then resume to the next section (CSS3)? Please rate the quiz on a scale of 1-5 (low-high).

Perfect, everything is smooth and works well

5/5

(If 2 or less, please elaborate why)

Q.10) State any feature(s) that you disliked about the product. You are free to suggest improvement(s) based upon them.

Please Nothing.

Haaris Osman Mehmood

8155

20675

## Questionnaire Prototype 3

Q.1) Please choose your current role as a stakeholder.

- ☐ Senior Manager
- ☐ Client
- ☐ Peer Reviewer
- ☒ End User
- ☐ Supplier

Q.2) Briefly describe your first impression of the homepage.

*the glitch loading effect matches with the products theme very well and I also like the minimalist approach*

Q.3) What is your opinion on element animations (loading screen, main-menu bar, header, section logos, response text and buttons)?

- ☒ Impressive
- ☐ Good
- ☐ Average
- ☐ Poor
- ☐ Irrelevant

(If below average please specify)

Q.4) On a scale of 1-5 (low-high), how effective is the current colour scheme in giving a familiar feeling of Wood Green Academy?

5/5

(If 2 or less, please elaborate why)

Q.5) Please choose the most suitable description of the font and font-size used. You can tick multiple choices if relevant.

- ☒ Allows perfect readability whilst maintaining a modern, clean look
- ☐ Apart from a few readability issues, the font is eye-catching and highly preferred
- ☐ The paragraph font-size can be made larger/smaller (cross out as applicable)
- ☐ The font doesn't match the rest of the design scheme at all and will require some rethinking
- ☐ It is impossible to read any text on my display

(If 2<sup>nd</sup>-5<sup>th</sup> option is chosen please elaborate further)

Haaris Osman Mehmood

8155

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Q.6) Are there any broken links throughout the website? If 'Yes' please specify.

No

Q.7) Are all three videos played back properly on your computer (including the audio part)?

Yes all of them

Q.8) Does the 3D model animate with gestures during a conversation? If 'No' please specify when.

Yes

Q.9) Are you able to complete the HTML5 section, its quiz and then resume to the next section (CSS3)? Please rate the quiz on a scale of 1-5 (low-high).

Yes

4 / 5

(If 2 or less, please elaborate why)

Q.10) State any feature(s) that you disliked about the product. You are free to suggest improvement(s) based upon them.

I enjoyed all the features of this product.

Haaris Osman Mehmood

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## Questionnaire Prototype 3

Q.1) Please choose your current role as a stakeholder.

- ☐ Senior Manager
- ☐ Client
- ☐ Peer Reviewer
- ☒ End User
- ☐ Supplier

Q.2) Briefly describe your first impression of the homepage.

The custom background score gives the product a unique touch and catches the user's attention

Q.3) What is your opinion on element animations (loading screen, main-menu bar, header, section logos, response text and buttons)?

- ☒ Impressive
- ☐ Good
- ☐ Average
- ☐ Poor
- ☐ Irrelevant

(if below average please specify)

Q.4) On a scale of 1-5 (low-high), how effective is the current colour scheme in giving a familiar feeling of Wood Green Academy?

4/5

(if 2 or less, please elaborate why)

Q.5) Please choose the most suitable description of the font and font-size used. You can tick multiple choices if relevant.

- ☒ Allows perfect readability whilst maintaining a modern, clean look
- ☐ Apart from a few readability issues, the font is eye-catching and highly preferred
- ☐ The paragraph font-size can be made larger/smaller (cross out as applicable)
- ☐ The font doesn't match the rest of the design scheme at all and will require some rethinking
- ☐ It is impossible to read any text on my display

(if 2<sup>nd</sup>-5<sup>th</sup> option is chosen please elaborate further)

Haaris Osman Mehmood

8155

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Q.6) Are there any broken links throughout the website? If 'Yes' please specify.

No

Q.7) Are all three videos played back properly on your computer (including the audio part)?

Yes

Q.8) Does the 3D model animate with gestures during a conversation? If 'No' please specify when.

Yes it does

Q.9) Are you able to complete the HTML5 section, its quiz and then resume to the next section (CSS3)? Please rate the quiz on a scale of 1-5 (low-high).

Yes

4/5

(If 2 or less please elaborate why)

Q.10) State any feature(s) that you disliked about the product. You are free to suggest improvement(s) based upon them.

I didn't find any negative features in this product.

Haaris Osman Mehmood

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## Questionnaire Prototype 3

Q.1) Please choose your current role as a stakeholder.

- ☐ Senior Manager
- ☐ Client
- ☒ Peer Reviewer
- ☐ End User
- ☐ Supplier

Q.2) Briefly describe your first impression of the homepage.

I like the ~~modern~~ first page as it is innovative and realistic.  
I like the loading effect which is the main wow factor.

Q.3) What is your opinion on element animations (loading screen, main-menu bar, header, section logos, response text and buttons)?

- ☒ Impressive
- ☐ Good
- ☐ Average
- ☐ Poor
- ☐ Irrelevant

(If below average please specify)

Q.4) On a scale of 1-5 (low-high), how effective is the current colour scheme in giving a familiar feeling of Wood Green Academy?

5/5

(If 2 or less, please elaborate why)

Q.5) Please choose the most suitable description of the font and font-size used. You can tick multiple choices if relevant.

- ☒ Allows perfect readability whilst maintaining a modern, clean look
- ☐ Apart from a few readability issues, the font is eye-catching and highly preferred
- ☐ The paragraph font-size can be made larger/smaller (cross out as applicable)
- ☐ The font doesn't match the rest of the design scheme at all and will require some rethinking
- ☐ It is impossible to read any text on my display

(If 2<sup>nd</sup>, 5<sup>th</sup> option is chosen please elaborate further)

Haaris Osman Mehmood

8155

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Q.6) Are there any broken links throughout the website? If 'Yes' please specify.

No

Q.7) Are all three videos played back properly on your computer (including the audio part)?

Yes

Q.8) Does the 3D model animate with gestures during a conversation? If 'No' please specify when.

Yes

Q.9) Are you able to complete the HTML5 section, its quiz and then resume to the next section (CSS3)? Please rate the quiz on a scale of 1-5 (low-high).

Yes

5/5

(If 7 or less, please elaborate why.)

Q.10) State any feature(s) that you disliked about the product. You are free to suggest improvement(s) based upon them.

I don't dislike anything, this product is very appealing and it has the professional look. This is a user-friendly product while most modern products are not.



Haaris Osman Mehmood

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## Questionnaire Prototype 3

Q.1) Please choose your current role as a stakeholder.

- ☒ Senior Manager
- ☐ Client
- ☐ Peer Reviewer
- ☐ End User
- ☐ Supplier

Q.2) Briefly describe your first impression of the homepage.

It is clearly laid out with Anna ready to assist the user from their first opening of the software.

Q.3) What is your opinion on element animations (loading screen, main-menu bar, header, section logos, response text and buttons)?

- ☒ Impressive
- ☐ Good
- ☐ Average
- ☐ Poor
- ☐ Irrelevant

There are many animations used within this project. They will be a valuable resource for future students for their work.

Q.4) On a scale of 1-5 (low-high), how effective is the current colour scheme in giving a familiar feeling of Wood Green Academy?

5 / 5

(If 2 or less, please elaborate why)

Q.5) Please choose the most suitable description of the font and font-size used. You can tick multiple choices if relevant.

- ☒ Allows perfect readability whilst maintaining a modern, clean look
- ☐ Apart from a few readability issues, the font is eye-catching and highly preferred
- ☐ The paragraph font-size can be made larger/smaller (cross out as applicable)
- ☐ The font doesn't match the rest of the design scheme at all and will require some rethinking
- ☐ It is impossible to read any text on my display

(If 2<sup>nd</sup>-5<sup>th</sup> option is chosen please elaborate further)

Haaris Osman Mehmood

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Q.6) Are there any broken links throughout the website? If 'Yes' please specify.

No, all links were working.

Q.7) Are all three videos played back properly on your computer (including the audio part)?

Yes.

Q.8) Does the 3D model animate with gestures during a conversation? If 'No' please specify when.

Yes, she is a very helpful addition to the product.

Q.9) Are you able to complete the HTML5 section, its quiz and then resume to the next section (CSS3)? Please rate the quiz on a scale of 1-5 (low-high).

Yes.  
The quiz asked a range of questions.

5 / 5 (If 2 or less, please elaborate why)

Q.10) State any feature(s) that you disliked about the product. You are free to suggest improvement(s) based upon them.

Lets - Let's (grammar type)

An excellent product!  
You have acted upon feedback well throughout this project.

## Evaluation

### Question 1 – Stakeholder's role

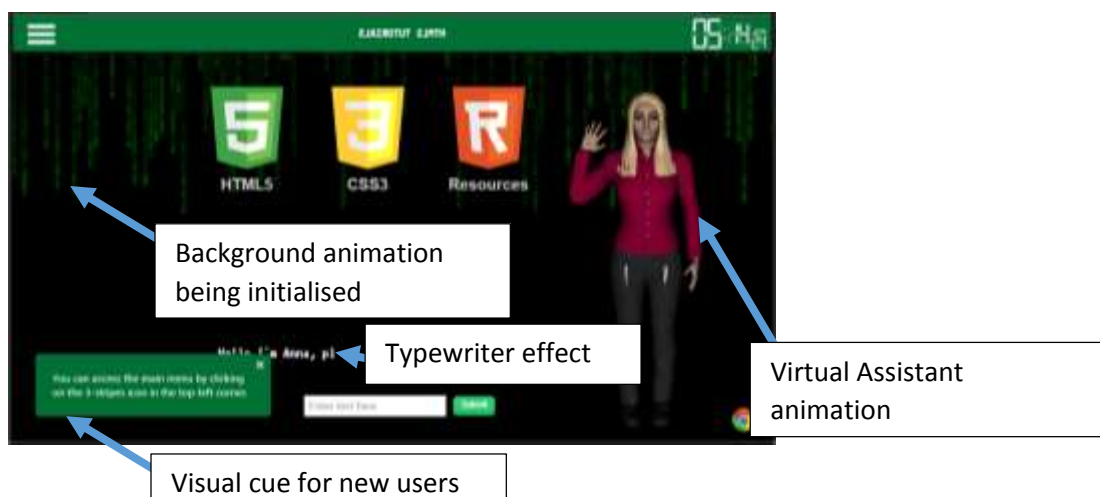
The first question was regarding the role of the respondent. This is an essential question because it can show what each stakeholder thought about the product. Different stakeholders will have a different approach to the product. They will also be able to make suggestions on different aspects. While the senior manager (KXP) or client (PJH) might put more emphasize on the design and layout of the product, for the end-users the most important part is the content itself. Some of the questionnaires at a later date so that features were fixed or added if possible after each successive questionnaire.

The following stakeholders completed the questionnaire:

1. One Senior Manager - KXP
2. One Client - PJH
3. Three Peer Reviewers – PS, MU, MC
4. Two Users – RLD, ML

### Question 2 – First Impression

The second question was about the impression of the user on the loading screen of the product. It is often said 'the first impression is the last impression' and hence to really entice users I would need smooth animated loading effects where the content is either pulled down or pulled up. All users were fond of the products first looks. They liked the loading screen as it had significant reductions in loading times as compared to the previous prototype. Secondly, the loading screen also provided a simple yet elegant looking interface. PJH, the client, said that the homepage looked very creative and original. This meant that it truly stood out and was not commonly seen amongst other products. All three peer-reviewers: RS, MC and MU also gave positive remarks about the homepage. While MU liked the loading effect animation which included the blinking cursor and the glitch effect, MC liked the matrix-themed background and said that it fits the colour scheme well. RS responded that my loading screen's large and white font on a black background looked futurist as well as the effect itself. RLD (end-user) mentioned that the glitch loading effect along with the minimalist approach was quite pleasing and that it matched with the theme of the product very well which is HTML5 design and coding.

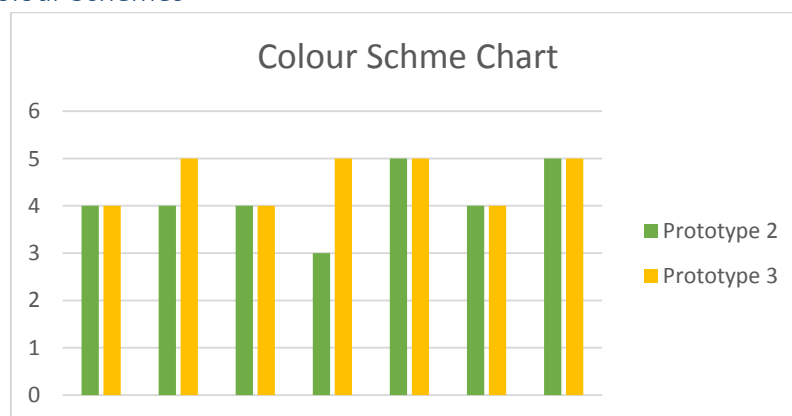


### Question 3 (linked to Objective 9) – Element Animations

The third question was regarding element animation. This question asked how well or bad did the respondent feel about the animations displayed. This was a useful question as it could be directly used as evidence to see how far I have progressed throughout objective 9. The ratings from previous prototypes have now been improved as evident from the questionnaires. Adding a 3D model has now also improved the overall aspect of the product. The biggest notable change is the inclusion of a 3D animated model. Furthermore, the placeholders have been redesigned and are fully functional. They expand on hover rather than increase in length like before. They is a further improvement for the headings which is the inclusion of actual logos instead of H, C and R has now also been done. A screenshot preview is shown below. All the respondents chose 'impressive' for animations. It terms of what made respondents choose that option, the general reason was that the animations were smooth and there was no stutter. This means that I have fixed previous stutter issues that use to cause hangs and now the user experience is not brought down by those bugs. Since all of my respondents liked the animations and chose the impressive option as the way to describe them, I can say that I have completed achieved objective 9.



### Question 4 – Colour Schemes



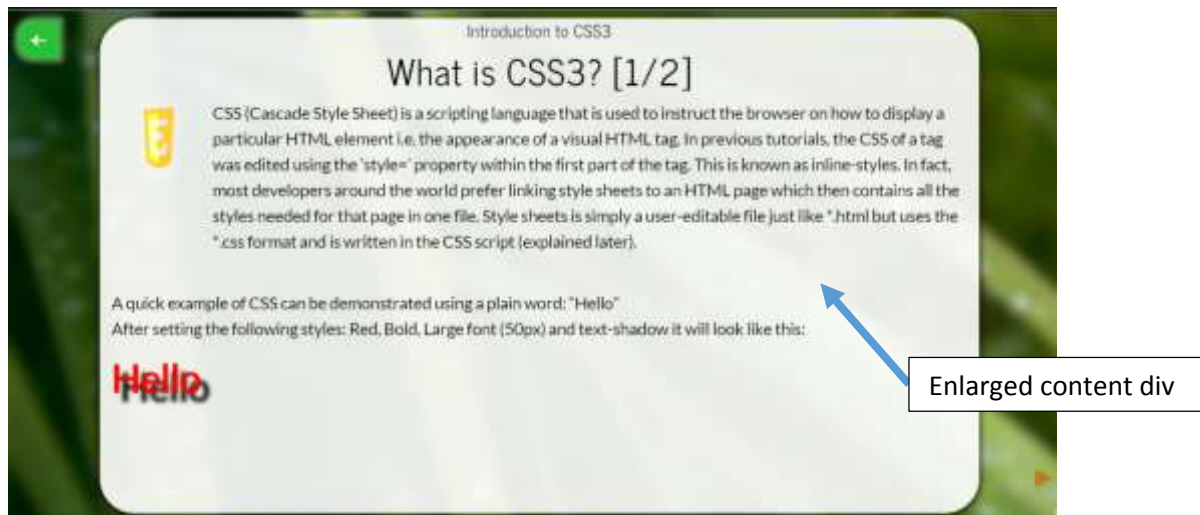
The chart above shows the overall score from all the questionnaires regarding the colour scheme resemblance with Wood Green Colours. I have included the scores from the previous prototype for comparison purposes. The score was out of 5 where 1 being the lowest and 5 being the highest. As it is visible from the chart, some of my scores are now improved from Prototype 2. In Prototype 3, all respondents either chose a 5 or a 4. No one gave a rating of less than 4. This means that my product has quite substantially improved in terms of design and the choice of colours. The major issue on Prototype 2 was to use the correct mix of colours. This means that not only did I need to make my product resemble the wood green emblem it also needed to look attractive. I achieved this by giving

users a choice of multiple themes so that the product is flexible and accept both the main colours of Wood Green Academy which are green and yellow. Below is the screenshot of the theme switcher control. As it is visible from the screenshot, the user have a choice from eight different themes which are quite a lot within the limited house style of this product. The themes include two pure yellow themes. A screenshot of one of the yellow themes is also shown below. In a pure yellow theme, the header and the main navigation bar is also painted in yellow colour to give users a unified experience.



#### Question 5 – Font/Font-Size (Linked to Objective 6)

This was regarding the appropriateness of the font and font-size used. From the variety of feedback that I have received so far all of the people responded that the font allows for perfect readability. This means that not only is my product easy to follow, the font is also of an appropriate style and size and the users face no issues or struggle to read whatever is said. This question is also linked to objective 6, which was that my product is viewable on a wide variety of displays. Since text is the primary form of content, it is essential that text is always easily readable by the user and does cause any eye strains. By using third-party fonts, I have further enhanced the look & feel of my website while maintaining a clean and modern look. With discussions from the client (PJH), I can now change the font-size to improve the readability. I have included a function to make the overall font-size larger throughout the product. This means that in cases where people will have difficulty in viewing the font correctly, they can leverage the 'large-font' option from the settings with just few simple clicks. This will ensure that my product looks good even on displays that it doesn't officially support such as 4K displays on which the product was not tested as being unavailable at our school. As a result of the questionnaire, I now have confidence that my object 6 is fully complete. A screenshot of the large font mode is shown below



### Question 6 – Broken Links

This question asked for any broken links present throughout the product. The response for this question has been substantially improved as a result of proper testing of links and debugging errors during devolvement rather than waiting for the end of prototype to test for broken links. Hence respondents were not able to find any broken links. The general statement was that the respondents found no issues with the links that they tested.

### Question 7 – Videos (Linked to Objective 9)

This question asked the respondents whether they were able to view all videos present in the product easily and whether or not the audio present in the videos were audible. The responses for this question were quite positive. Everyone gave an affirmative reply to this question. This means that no one faced an issue while watching the videos. In the first video, I record a screen-cast of my computer showing the end-users how to create a new HTML file, add some text and other content to it and display it in the browser. For this tutorial I also included voice-over which will allow the tutorial to be much more effective as it will give both audio and visual cues on how to perform a task. The second video is created by a third-party and taken from the internet and it is present in the product because it gives a brief overview of what HTML5 really is, allowing users to have early interest. The third video is also created by me and it showcases the purpose of CSS3 by showing step by step on how to create, edit and link a CSS stylesheet; essential for all further tutorials. To use a different approach, I included subtitles and increased the background score volume in this particular case. The last video served as a lopped result of one of the tasks. As the video was very short (lasting only a few seconds) there was no need to add audio. I also didn't include any controls because the video should be viewed as an 'animated gif' rather than a video file.

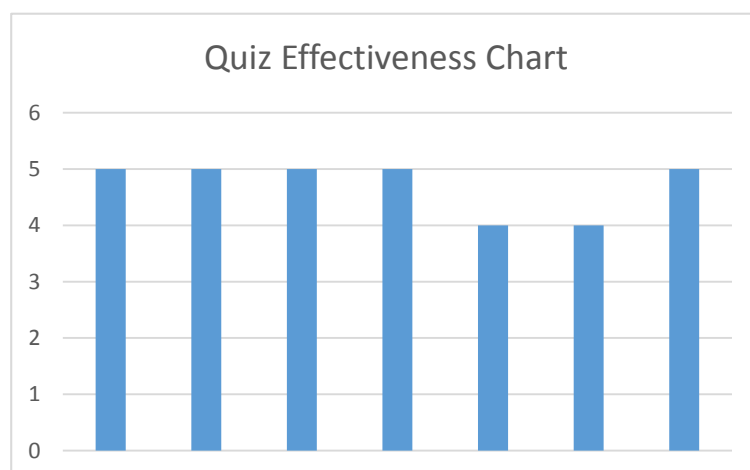
### Question 8 – 3D Model animations

This was a new question to get crucial feedback on the recently created 3D model for the virtual assistant. The question asked was that whether the model performed gestures e.g. waving hand during a conversation as and when required. The response from all the stakeholders suggests that

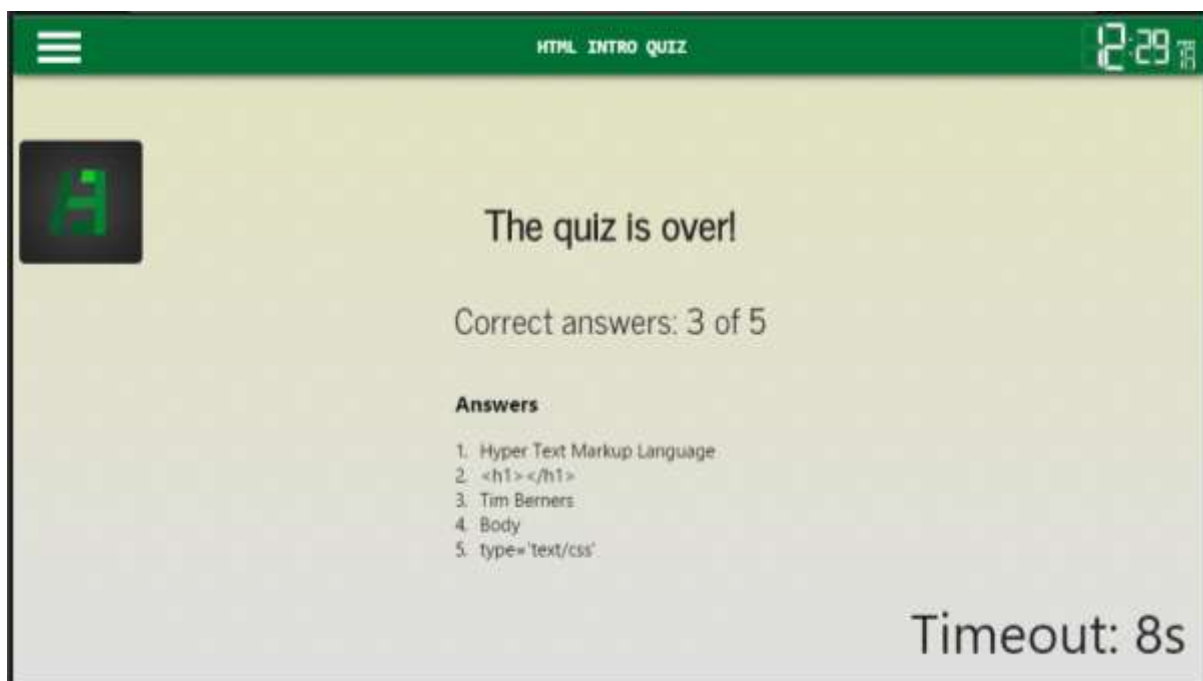
'yes' the animations were played back. This means that there were no issues in demonstrating an animated model. This also meant that the 3D model can run on a variety of computers and doesn't require (but can be benefited from) a dedicated graphics card. One of the peer-reviewer (MC) suggested that the animations were a bit choppy. This is because of the number of key-frames used to create animation. For each key-frame, a snapshot of each of the vertices of the model is taken into account. Different snapshots account to different gestures as the body is positioned differently. Unfortunately, a very large number of key-frames are required to produce smoother animations and the key frames must also be recorded from an actual human being. This means that I will have to get a motion capture file and import it into my model. This technique can be quite expensive due to the exotic hardware requirements. If I choose a free-to-use motion capture file instead, it is often impossible to find the exact animation you are looking for. Furthermore, motion capture files are currently unsupported by Three.js, the software that I have used to display the model in Google® Chrome. Thirdly, even if I do create a large number of key-frames, the file-size of the model will be considerably large (e.g. 5 times greater) which, due to the file-size limit of 30MB for my product, cannot be done. In short, the flexibility of multiple animations and low file size can only be possible achieved if one creates the animations himself. If we go this way, the only drawback is that the animations may feel a bit robotic at times due to low number of key frames and uncertainty of exact positions of body parts.

#### Question 9 – Quiz (Linked to Object 3)

This question was about the functioning of the quiz, its effectiveness and overall rating. The question was specific in asking others to tell whether or not they were able to follow the procedure explained in the question. The sequence being: finish the first tutorial, the quiz loads up, the stakeholder completes the quiz and finally the stakeholder is redirected to the next page automatically. This was a useful to ask stakeholders for two main reasons. The first being that it would be a perfect way to test out the quiz features using different possible scenarios. For example one of the stakeholder might score a 100% while another one might fail in first try. This way each scenario and its corresponding result can be tested. The second reason why I included this question in the questionnaire is to see whether or not stakeholders are able to follow what is being asked. As every stakeholder understood what is asked by the question, it can be said that the product is user-friendly and easy to follow. The answer to the first part of the question from all stakeholders was 'Yes' meaning whatever the scenario was, the stakeholder was redirected to the next topic in the end. The second part of the question asked the respondent to rate the quiz.



Overall the graph above illustrates that the quiz was given a high rating. One of the most requested features in prototype 2 was the ability to list down all the answers after the quiz had been completed. This was an essential feature as it allowed users to see where they went wrong. This feature has now been successfully included in the quiz. The stakeholders are now happy about this and this reflects on the ratings of the quiz. The list of answers is also programmed to only appear in certain conditions. The condition is that a user must 'pass' to be able to view the answers. Otherwise, the user must repeat the previously completed tutorials and attempt the quiz again. This makes the students motivated to strive to achieve a high score in order to progress further into the product and in fact is in turn linked to the third objective of the product. The objective says that each user should be assessed individually and the content should be tailored for their past performance. So if a user does well in a quiz, s/he unlocks the next section/topic; but failing to do so results in them being reverted back to their previous level. This basically means that the user has to revisit the content, preferably with much more attention the second time around. The virtual assistant is also giving encouraging comments every now and then if a user doesn't do well or performs average on the quiz. Below is the screenshot of the list of answers from the first quiz. Notice that the user in this scenario has achieved above average (3/5) which makes them eligible to look at the answers.



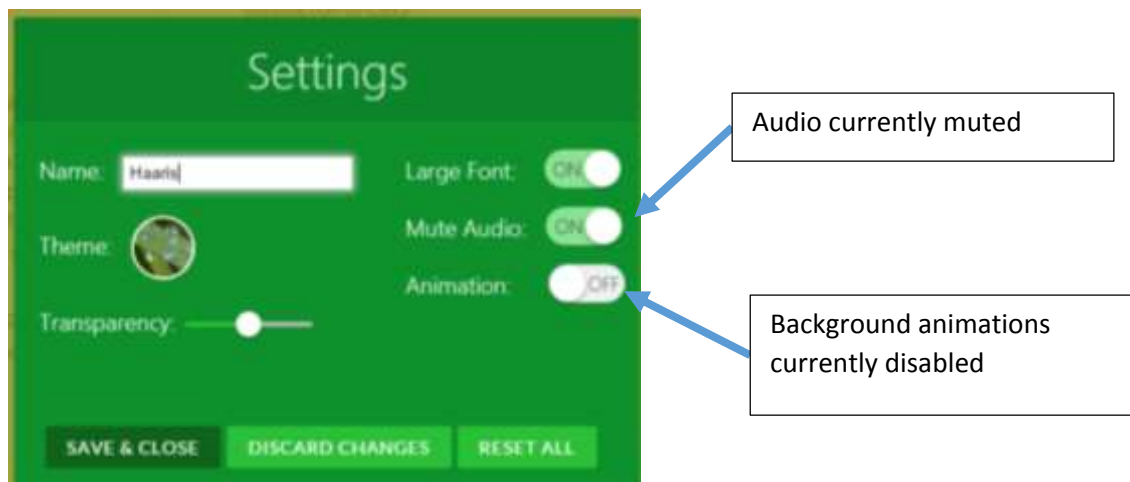


### Question 10 – Overall Disappointments

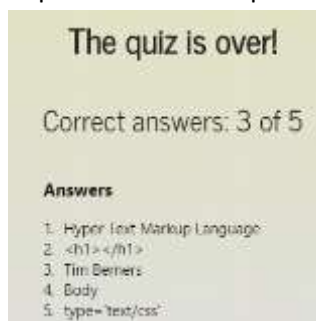
This question was regarding any negative aspects of the product i.e. a feature that the stakeholder did not like. It is a useful method to get effective feedback about what looks boring, inappropriate and/or needs fixing. This question was succeeded by another question asking any suggestions that they wish the product had. This question was optional and hence not answered by many stakeholders. I will describe below how I have improved upon the disliked features in prototype 2. Some suggestions that were unrealistic due to file-size (30MB) and time constraints were not done. However, almost all suggestions were taken into account.

#### *Improvements from Prototype 2*

- Initial loading – The loading screen was a disappointment for a few respondents. The improvement they suggested is to reduce the loading times. Although it is an important critic, there is a limit to how short can a loading process be. This is because of the longest time taken during loading which is when the browser attempts to read the vertices of the 3D model from the model's source file. I have now updated the design of the loading screen and have reduced the loading time by about a few seconds. For example the average loading time with the console output loading design was around 10 seconds. Now the loading has been reduced to about 5 seconds. This is a huge improvement as it is about two times faster than before. The improvement was done by removing the 'current file output' algorithm. The algorithm was used to list out the files in the order of them being loaded. Since most files loaded almost instantaneously, this feature was quite redundant as extra delay was required to allow users to read the actual text output. Hence for a simplistic approach, I removed the feature and added a single text 'loading' instead with all the loading being done in the background. Not only did this reduce the loading times but also prompted the user to be patient and don't think that the product has frozen or is corrupted.
- Lack of content – The second disappointment that aroused was that there wasn't enough content present than originally planned for prototype 2. This concern was raised by the senior manager (KXP) and one of the peer reviewers (MC). This feature is now fully completed. All the stakeholders are now happy with the content present in the product. They are also quite pleased to see a large amount of live examples in the content that allows user to get a real-feel of what is being taught as well as conveniently available code blocks which explains in detail the actual purpose of the code and its function whilst allowing users to directly copy-paste the code to their products rather than wasting time typing up generic command i.e. the syntax that is usually always the same e.g. property names.
- Disabling audio – One of the end-users (RLD) didn't like the fact the he was unable to mute audio on will from within the product. He explained that without a mute feature it would be harder for users to mute out only the product tab in Google Chrome so that they can listen to any other tune/audio they want to while still listening to. This feature has been added in the form of a toggle button in the settings panel. By clicking the settings link from the side menu-bar a settings dialog box now appears within the main window. From here the user is able to turn on/off certain toggles, reset settings and do more. A screenshot of the settings panel is shown below.



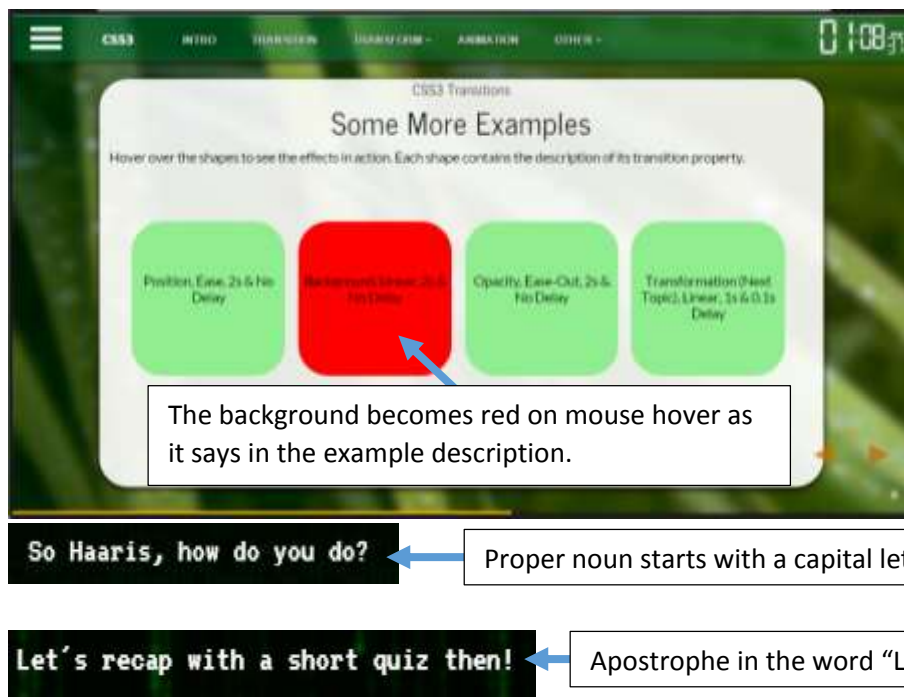
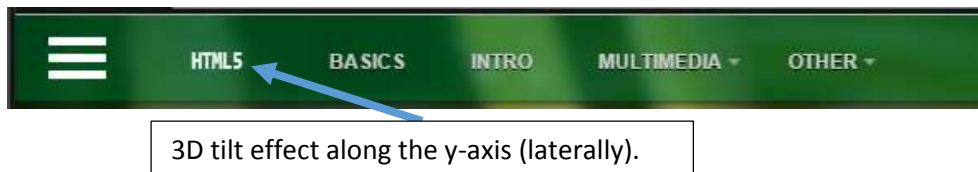
- Disabling background animation – One of the end-users (ML) and the client has suggested to present an option to users to disable the background animation. This can be useful for those who either find it dazzling or get distracted by it. This can also be done via the settings panel as explained above. The screenshot above illustrated this feature. The last toggle on the settings page is that of the animations and disabling it disables the background animation on the homepage.
- Quiz results – Lastly one of the peer-reviewers (MU) suggested that the quiz should list down all the answers in the end. To ensure the quiz is still effective, the answers are only visible if the user is able to get 50%+ in the scoring system. This feature has also been implemented in the product as shown below.



### *Any suggestions*

Overall most of the stakeholders didn't suggest anything as they found the product pretty self-sufficient. However, the client (PJH) and a peer-reviewer (MC) suggested a two improvements which have now been included in the product. The client suggested to add more animations in the product. This suggestion has now been completed as the header text found on the top of the page now rotates 360° in an infinite loop. This gives it a spinner effect. Furthermore additional animations have been added in the CSS3 section of the product. The animation gives the product added multimedia effects whilst making it easier for the user to understand what is being taught. This wasn't seen by the client in his review due to being short of time and hence he suggested for that feature. An example of the 3D spin effect and content animation/transition is shown on the next page. MC noticed that his name didn't start with a capital letter when the virtual assistant called him by his name. This was done to prevent any bugs due to differences between uppercase and lowercase

words. Nevertheless, this has now been fixed and the proper first letter capital now comes up in the response text. A screenshot of this feature is shown below. Finally, the senior manager KXP suggested that the word 'let's' is spelled incorrectly. This minor bug has been fixed and the correctly version is shown below.



### Improvements

- Add more yellow to colour scheme
- Diminish bugs and glitches
- Fix audio issues (if any)
- Add new features to quiz
- Add settings to control playback of animations and/or audio
- Highlight keywords in colour (possibly yellow)
- Add more content

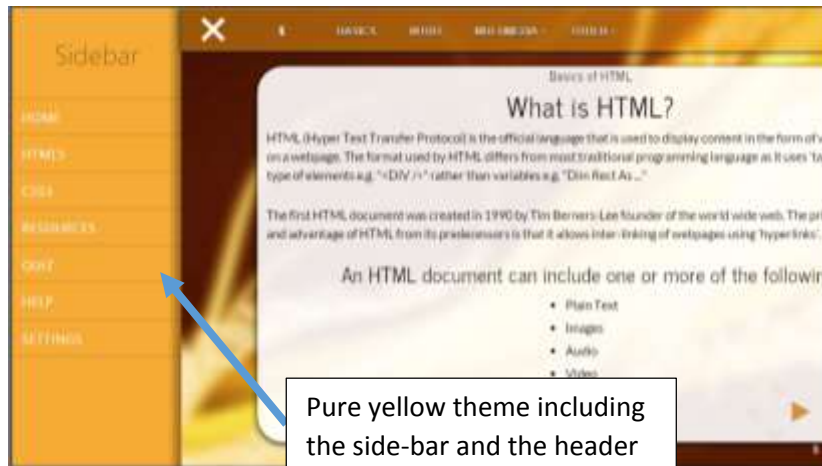
## Completed Improvements

### Colour Scheme

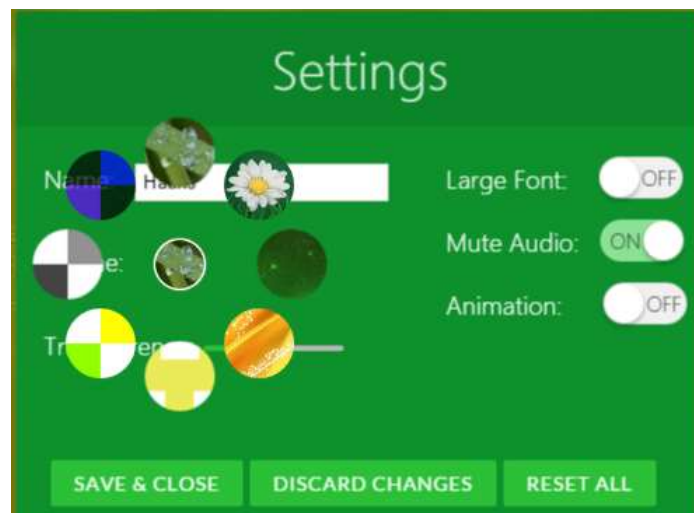
1. Add more yellow effects on the product

I have now included 2 new yellow themes to my product. These themes not only change the colour of the background image but also change the hearer and main navigation bar colours. This allows for a unified theme experience. The only exception where a theme is never applied is the settings panel because it must be of the same design as it the only place where

you change the settings. By adding these features I have ensured that the end-users will enjoy a wide array of colours present in my product and they will be able to make the most out of my product by choosing a theme depending on their mode. The yellow theme is also changed by default when the user transitions from the HTML5 section to the CSS3 section. A screenshot of the yellow theme with the main-navigation bar expanded is shown on the next page.



2. Have a translucent top bar  
This has also been now added to the product with added functionality. Apart from few themes, users can now freely control the level of transparency of the main-header depending on their preference. Some themes look good in translucent while an opaque theme suite others. Depending on the user's choice of theme, different options are available. For a majority of themes the user can select between 1% to 100% transparency of the main header. An example of 50% and 100% transparency is shown below.
3. Have an option to change backgrounds to reflect user needs such as green, yellow and black with a possible method of inverting colours for people with colour blindness. Also, have a range of abstract or nature themed ready-made background for the user's pleasure. Users now have a choice of multiple themes so that the product is flexible and accept both the main colours of Wood Green Academy which are green and yellow. Below is the screenshot of the theme switcher control. As it is visible from the screenshot, the user have a choice from eight different themes which are quite a lot within the limited house style of this product. The themes include: 3x pure green; 2x pure yellow; 1x yellow/green; 1x greyscale and 1x inverted. This long list will give user a wide array of backgrounds to choose from. The genres of background used are: nature, space, abstract and pattern. The theme above on this page is an example of an abstract theme whereas an example of a nature theme is shown on the next page.

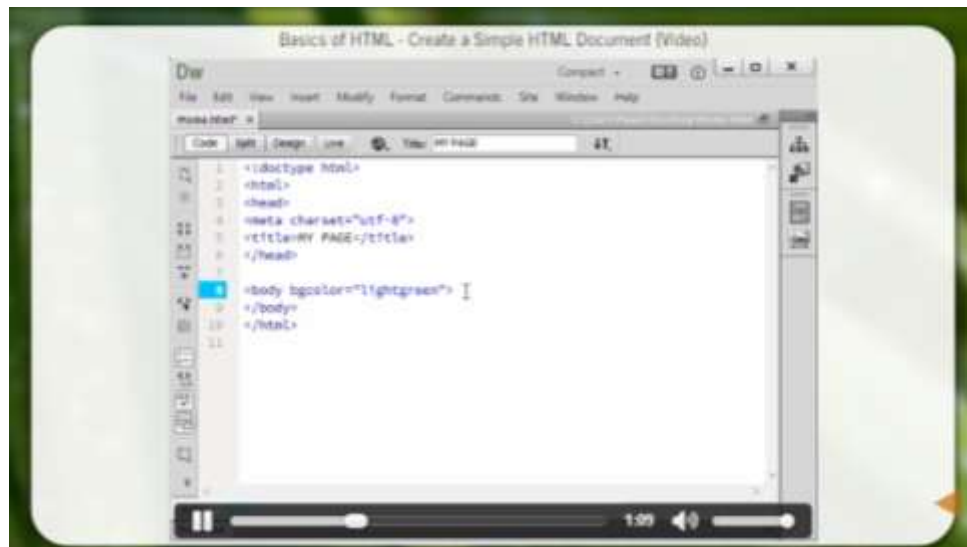


## Multimedia

1. Add introductory background score apart from the loading sound
2. I have now included a new background score on the homepage that I have created by myself using various instruments and sample loops. The score will give users a unique yet different approach to music and will differentiate from other products. On top of that, the user's will be more attracted towards this core since they can't listen to it anywhere else and it is exclusively available only in the product.

3. Add tutorial videos

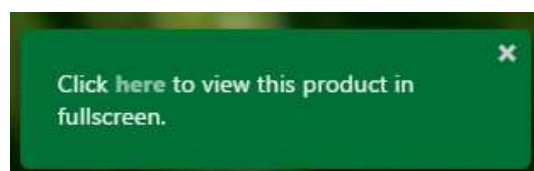
In prototype 3, I have included four videos throughout the product, three of them being tutorial videos. In the first video, I record a screen-cast of my computer showing the end-users how to create a new HTML file, add some text and other content to it and display it in the browser. For this tutorial I also included voice-over which will allow the tutorial to be much more effective as it will give both audio and visual cues on how to perform a task. The second video is created by a third-party. The third video is created by me and it showcases the purpose of CSS3 by showing step by step on how to create, edit and link a CSS stylesheet; essential for all further tutorials. To use a different approach, I included subtitles and increased the background score volume in this particular case. The last video served as a lopped result of one of the tasks. As the video was very short (lasting only a few seconds) there was no need to add audio. I also didn't include any controls because the video should be viewed as an 'animated gif' rather than a video file. Below is a screenshot of my first video.

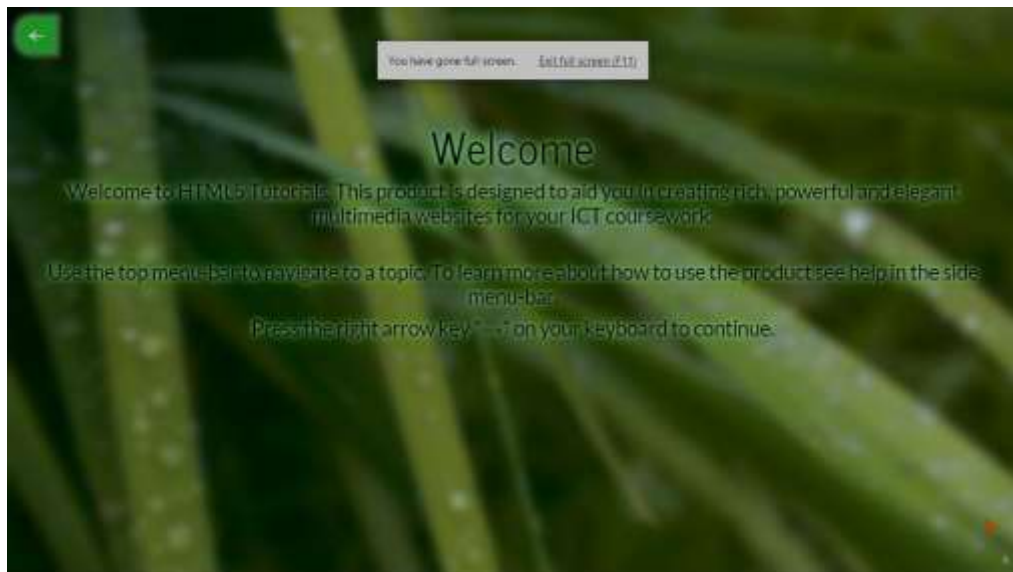


#### 4. ~~Make a drag/drop quiz~~

#### 5. Add a full screen option for an immersive experience

This option can now be done by the user themselves by pressing the 'F11' key on their keyboard. The alternative way is to click the link available in the notification pop-up few seconds after the user chooses the large font option. The benefit of the notification is that the user can be reminded that a full-screen view is easily possible and they don't need to remember the shortcut key. This also shows that the product is quite dynamic and responsive as it can easily scale to different screen resolutions and hence can handle a full-screen view without any problems. A screenshot of the notification and the resulting view is shown below. After the user has gone into full-screen view, the user can exit that view by simply clicking on the escape button. Alternatively, the return key automatically brings the user back to normal view and exits full-screen at the same time.





## Animations

1. Make the animations smoother and without any glitches and improve the timing of the animations so that they only play after the initial page is loaded.  
Both of the above suggestions have been acted upon. The animations now show up correctly where before there used to be white space issues as well as incomplete display of headings that were being animated using the typewrite effect. Since the type-writer effect in the main header relies on covering up the letters and revealing them one by one, a translucent or transparent theme is incompatible with this type of design since the covering shape will be quite clearly visible. The shape used must be of the same colour of the header for this reason but using a translucent shape also defeats its purpose as the letters become clearly visible. For this reason the type writer effect only works with opaque themes.