NVIDIA Website

Overview

This project aims to develop a website that uses Javascript and HTML to provide a pleasing user experience to users. I decided to make a website for NVIDIA as I felt that the current was not very responsive. I first started by looking at the original design of the website and taking the most important elements to include in the website. Then I did research for similar e-commerce websites and tried to incorporate the best parts of these into the website, making it an easy and enjoyable experience to use. I decided to create a responsive and dynamic website that could be used by anyone to learn more about products and buy them.

User Experience

Design Approach

From the very start, I wanted to make sure that my website was responsive. I therefore decided to use Twitter Bootstrap as the basis. I also looked at how navigation bars changed different widths of the site and decided that on a tablet, my navigation bar should be quite different to make full use of the space when needed and be hidden when not needed. I thought that it was important that text was always legible so therefore content may have to move but it should all be visible.

For the style of my website, I decided that since it was a company website, I would use the colours and style of the brand and display the same information. I decided that I would do a few individual product pages to demonstrate products with different ways of displaying information on them. I wanted my website to look very modern and sleek and therefore decided on a black background with white text and green accents. I also wanted pictures to melt into the background so that it was less evident where blocks started and ended.

I intended my site to be the place where people went to get information on all consumer goods including links to competitions and drivers. I also wanted it to be very simple and easy to use and not requiring any specific hardware (keyboard etc) to interact with. It is aimed towards all ages.

Design Context

I decided to do some research on current websites that could provide guidance and inspiration for my own website.

NVIDIA Website

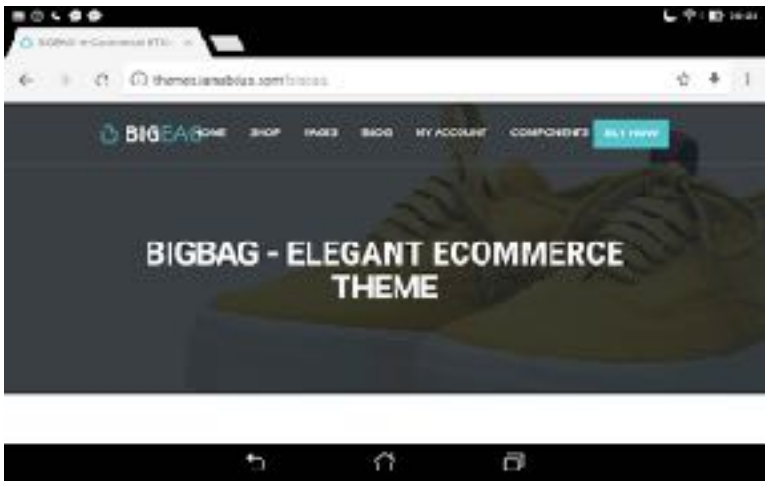
I first went on the NVIDIA website itself, thinking it was the most logical basis. I liked how the site was divided into distinct and easy to read sections; organising the information well. I also thought that the navigation bar was very easy to use and provided all the necessary information. I also like the carousel of images and how it went through these automatically.

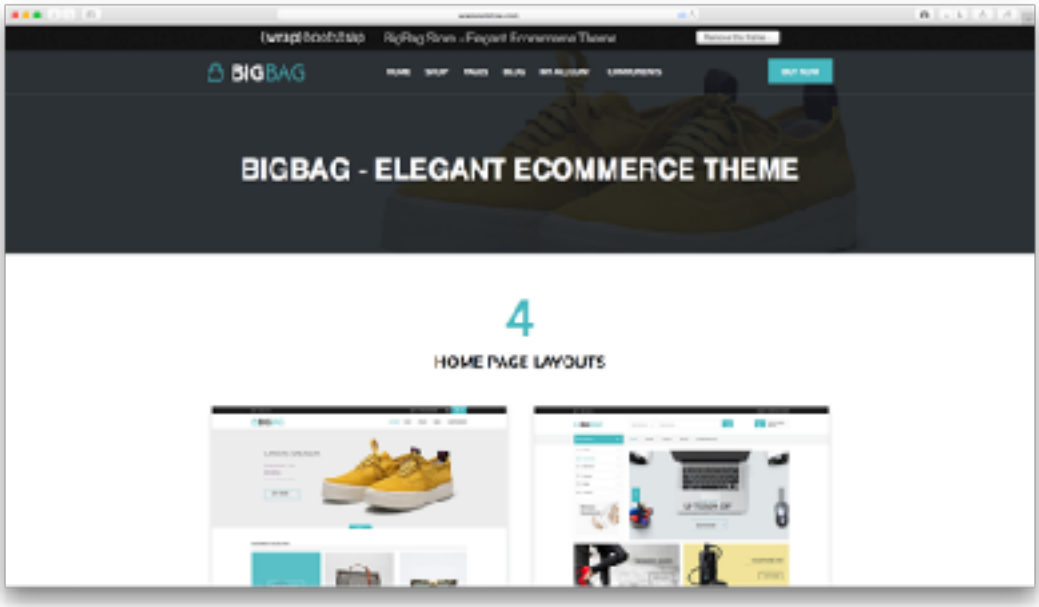
On the negative side, I felt that the site's design was very dated and noticed the lack of responsive design on the home screen therefore on smaller screens either the information was very small or the user had to cut off parts of the website to use it. On other pages, the site was responsive but it was inconsistent. I also thought the amount of information presented to the user was too much and this was a bit overwhelming for them.

BigBag E-commerce Theme

I then went to try and find a simple e-commerce website that used a simple theme. I found that many of these websites were overcrowded and had too much information on them for a feature website such as mine. I therefore decided to look for a theme rather than an existing website and found the BigBag Theme from {wrap}bootstrap. I felt that it was a good starting point as the responsive design was excellent with a navigation bar that changed if the width of the site was too small so that it made best use of space. I also thought that the site was very aesthetically pleasing.

On the negative side, I felt that the site was missing very key elements such as a basket and any real structure. I also thought that the top navigation bar was a bit long on large screens and was a bit unnerving. I also felt that the site did not show information that well, making items very sparse and requiring a lot of scrolling to view the content on the pages.

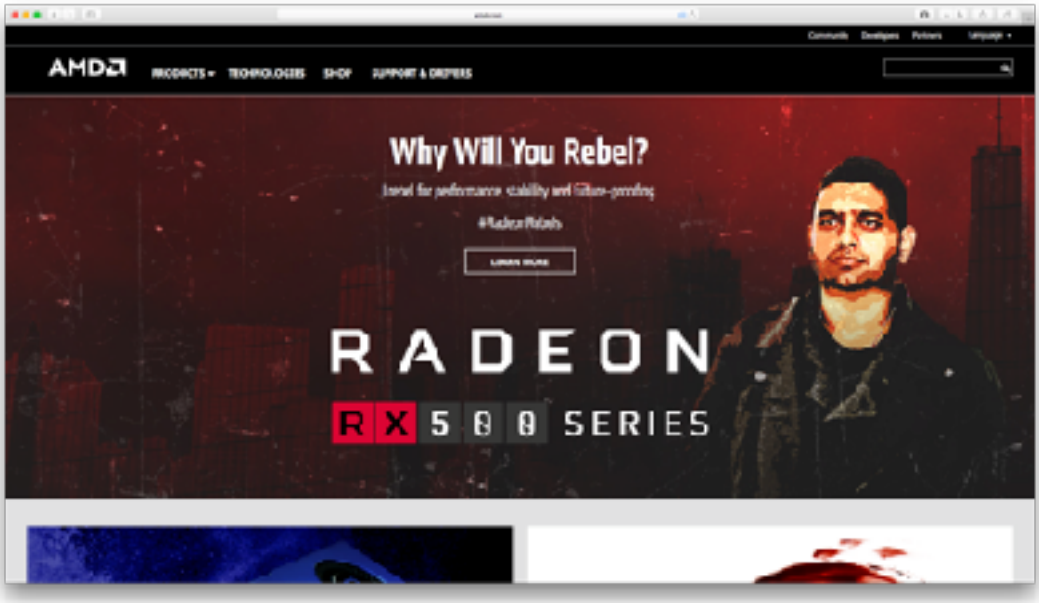




AMD Website

I decided to go on from this to look at one of NVIDIA's competitors and how they made their site. I was impressed with the responsiveness of the site and how nicely designed it was compared to its NVIDIA counterpart. I liked the presence of a consistent navigation bar that changed with smaller widths. It also used the space available really well, using large graphics and text that were very aesthetically pleasing.

The negatives for this site were that the product pages did not allow adding to the basket and the basket itself was only available on one page. I also noticed that in smaller width, when the user clicked the 'hamburger' button, the menu that appeared was on the wrong side.



Design Statement Addressing the Principles of Information Architecture

- Principle of Objects
  - Content on the site will change due to width of browser, even with different orientations
  - The site will have a consistent structure that is intuitive to use and that behaves how the user expects it to
- Principle of Choices
  - The site will have a balanced amount of things on it, not too much choice for the user as this can be confusing
- Principle of Disclosure
  - The site will have a simple design that reveals more information if users require (through interaction)
- Principle of Exemplars
  - The site will make use of thumbnail images of items as previews of what the linked file will have on it
- Principle of Front Doors
  - Every page will include a consistent navigation bar that allows easy manoeuvring through the site, even if the user does not land on the homepage at the start
- Principles of Multiple Classification
  - The information presented will be be clear to different types of learners, using photos, typography and different graphics to convey the message of the products
- Principle of Focused Navigation
  - The site will be centralised around easy navigation allowing the user to get to pages easily
- Principle of Growth
  - The site will be easy to expand later, using a basic template that is easy to adapt to add more products to

Technical Implementation

To do my implementation, I started with a basic bootstrap setup of 6 rectangular `<div>` elements to play with the layout of the homepage. From here I added the default Navbar item from the Bootstrap Components site. I played around with this, adding and removing items to see how I could use each dropdown and link. I decided to add in the styling of the page by adding a black background and adding `<h1>` elements for overlaying text. I then added in the required images to test the text on top of.

```
h1
{
    color: white;
    font: bold 24px Helvetica, Sans-Serif;
    letter-spacing: -1px;
    padding: 10px;
    background: rgba(197, 170, 1, 0.7);
    margin-left: 5%;
}

body
{
    background-color: black;
}
```

I also added the NVIDIA logo at the top of the page and decided to invert the Navbar to make it black. I decided that in terms of my `<div>` components, I would follow my initial sketches with one large central item and smaller `<div>` around it.

From this first page, I created a new page called ‘Gaming’ as a secondary page from the first as a gateway to a specific selection of products. I used a class ‘`green-box`’ to make more `<div>` elements that dynamically changed due to screen size. I also made it so that more products could be added if needed.

```
.green-box
{
    background-color: black;
    height: 200px;
    margin-bottom: 10px;
    font: bold 24px Helvetica, Sans-Serif;
    text-align: center;
    color: white;
}
```

From this, I started to create individual product pages. These incorporated the top logo and navigation bar but replaced the multiple `<div>` elements with just one large centralised one to introduce the product with a `<h2>` element that overlaid text on images slightly differently from the homepage. I decided that a large image was good to draw the user’s attention. I then added a description and some typography touting the different specs using different styles in different `<div>` that dynamically changed position with the width of the page.

```
            <div class="col-lg-3 col-md-2 col-sm-2 col-xs-12 container height stats">
                <h1>UP TO</h1>
                <br />
                <h2>3X</h2>
                <br />
                <h1>FASTER</h1>
            </div>
            <div class="col-lg-3 col-md-2 col-sm-2 col-xs-12 container height stats">
                <h1>UP TO</h1>
                <br />
                <h2>2X</h2>
                <br />
                <h1>POWER SAVING</h1>
            </div>
            <div class="col-lg-3 col-md-2 col-sm-2 col-xs-12 container height stats">
                <h1>NEXT GEN</h1>
                <br />
                <h2>VR</h2>
                <br />
                <h1>TECH</h1>
            </div>
```

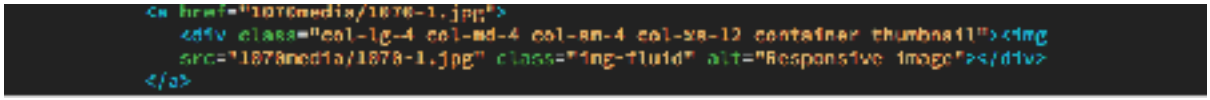
I decided to add a few pictures and a description about SLI using 4 images that dynamically changed due to the device width, with the three smaller images changing from the side to underneath if the device width was too small.

From this, I moved on to the page for the GTX 1080. I found a really nice rotation video on the NVIDIA website and thought this would be really attractive to users and therefore used it as the header.

For the rest of the webpage, I used a similar style to the Titan but included some quotes about the device at the bottom that had their own separate style to keep them centralised and to make them stand out.

```
q1
{
    color: white;
    font: 38px 'Ranga', cursive;
    display: block;
    padding-top: 10%;
    padding-left: 15%;
    padding-right: 15%;
}
q2
{
    color: white;
    font: 20px 'Ranga', cursive;
    display: block;
    padding-left: 20%;
    padding-right: 20%;
    padding-bottom: 5%;
}
```

My GTX 1070 page was very similar but I decided to include a gallery at the bottom that used the Bootstrap `thumbnail` tag to arrange them nicely and also linked to a full size image if the user clicked on it.



```
<a href="1070media/1070-1.jpg">
    <div class="col-lg-4 col-md-4 col-sm-4 col-xs-12 container thumbnail"><img
    src="1070media/1070-1.jpg" class="img-fluid" alt="Responsive image"></div>
</a>
```

For the Shield TV page, I added a video at the top and added images and descriptions in a two column layout along with a larger image with text overlaid. This required the creation of a new style in CSS that overlaid with a lot of text.

```
h4
{
    position: absolute;
    top: 70%;
    left: -1%;
    width: relative;
    color: white;
    font: 20px Helvetica, Sans-Serif;
    letter-spacing: -1px;
    padding: 18px;
    background: grey;
    margin-left: 5%;
}
```

For the Grid page, I wanted to have a few images that could be cycled through using Javascript. I looked at a few examples on the internet and decided that my code would be

similar however did not need to look up how long the array of images was, just required putting in the last value. I then referenced the images in the array.

```
function nextImg() {
    x = (x == 2) ? 0 : x + 1; //conditional operator
    document.getElementById("img").src = images[x];
}

function prevImg() {
    x = (x <= 0) ? 2 : x - 1;
    document.getElementById("img").src = images[x];
}
var images = [],
    x = -1;
images[0] = "gridmedia/Grid1.jpg";
images[1] = "gridmedia/Grid2.jpg";
images[2] = "gridmedia/Grid3.jpg";
```

Below I added a new typography that utilised many different text sizes to show different key information. I decided to present it like this to make it attractive to users and so that it conveyed important information quickly and clearly.

I decided that this would not be able to be bought as it was more business oriented. I therefore decided to include a form so information could be sent to the site owner. I created the form using the `<form>` function, making it collect all the information and include it in an email to a predefined address.

```
                <div id="form_sample"></div>
                <form action="mailto:example@york.ac.uk" method="post" enctype="text/plain">
                    <h5>Name:</h5>
                    <br><input type="text" name="Name"><br>
                    <h5>Email:</h5>
                    <br><input type="email" name="Email"><br>
                    <h5>Business:</h5>
                    <br><input type="text" name="Business"><br>
                    <h5>Message:</h5>
                    <br>
                    <textarea rows="4" cols="50"></textarea>
                    <br>
                    <input type="submit" value="Submit">
                </form>
```

I added in custom CSS to make it fit in with the aesthetic of the website.

```
input
{
    width:100%;
    margin-left:0;
    color: black;
    background: white;
    border-radius: 5px;
    font: bold 25px Helvetica, Sans-Serif;
}
textarea
{
    width: 100%;
    color: black;
    background: white;
    font: bold 24px Helvetica, Sans-Serif;
}
```

I also created a simple News page. At first I intended to a Javascript from scratch however found that this would be quite demanding as it would have to dynamically change whenever a new feed item was posted using PHP. I therefore decided to use an external script from Feed2JS as this would change automatically. I therefore just referenced an external script in the html.

On the shop page, I started out with a very similar layout to the ‘Gaming’ page and edited it, adding all items with images as backgrounds. At first I had issues with some of these

images not showing up properly on the tablets (not on desktop) so just re-did the code which seemed to fix the problem.

I then used a YouTube Javascript tutorial on how to make a cart, deciding which features I wanted and adjusting the code accordingly. I decided to make it as simple as possible, just clicking on an item added it to the cart and the cart could be cleared with a link in the dropdown. I decided that a user would probably only just buy one of each item so I did not add an amount to add option. I started out creating functions for anything that needed doing such as adding and removing items from the cart, along with clearing the cart and finding the total price. I also added functions to save the cart to local storage and load it (converting the data to JSON using `stringify` and `parse` to convert back). In jQuery, I added two functions that listened for a click with `element id` and added items to the cart with the right name and price. After each function that changes the cart, the script saves the cart to local storage. This means that across multiple pages, the cart can be edited and viewed. To make sure this happens, in the script, I called `loadCart()` and `displayCart()` making sure that when the html page loads, the cart loads. I also added in functions for future expansion such as removing single items from the cart but I didn't use them in the current iteration to make the site as simple as possible to use.

Critique

I feel that my website is well designed and addresses the initial problem of the NVIDIA website well. It dynamically changes to make full use of the available space on the page width and maintains legibility of text throughout, making sure that it is easy to navigate in any orientation. I thought that my site was aesthetically pleasing and adhered to the Principles of Architecture design well. I liked the oversized images and typography, especially how they reacted to different browser widths. I also was pleased with the way that the cart works across multiple pages, saving to local storage and loading very well. I also liked that my News page dynamically updated really well and fetched automatically with no need for updating.

I also liked that my form worked and looked nice, fitting with the aesthetic of the website. It also takes all the information and puts it in an email really well using the user's own mail client. I thought that the constant navigation bar on the website was useful for users as it was guidance at any part and was well laid out with breaks in the right places to denote different categories of products. I also felt that my homepage was well designed, bringing the user's attention to the most important things.

If I could improve my website, I would maybe add '-' and '+' buttons to the basket to change things individually without emptying the cart every time. I also had an issue with the cart not working on new browsers sometimes - requiring a 'Clear Cart' first before the user could add things to the cart. I might also add a placeholder of 'Nothing in Cart' if it was empty.

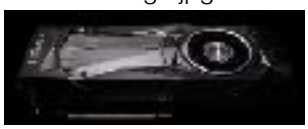
I also felt that the News page was a bit basic and with a bit more time, I could have added some better styling to the links which fit in more with the overall aesthetic of the website. I also felt that the form sending an email was a bit basic and would have been better if it was saved to the server instead. I also had an issue with the carousel on my Grid page as it was supposed to change automatically every few seconds but it did not do this and I feel it would have added to the overall experience.

Overall I am happy with my website as I feel it is a good improvement on the NVIDIA website and provides a new portal for users to discover products and order them if they want to. I think that the aesthetic fits with the NVIDIA brand and the styling is very directed towards the target audience. I feel that I addressed the aim well and produced a good quality website.

Word count: 2,555

Appendix

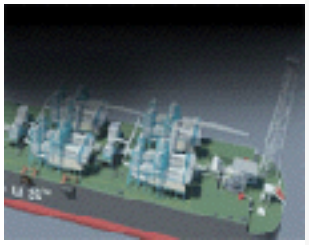
DESCRIPTION OF ASSET	SOURCE	LOCATION ON WEBSITE	LICENCE/ PERMISSION
Nvidia_logo.png	https://www.lanslide.com.au	1070series.html, 1080series.html, Contact.html, Gaming.html, Grid.html, Index.html, News.html, Shield.html, Shopping.html, Titan.html	Used under Illustration for Instruction principle.
GTX1080.jpeg 	https://images.nvidia.com/pascal/img/gtx1080ti/gallery/gallery-1.jpg	Index.html	Used under Illustration for Instruction principle.
Gaming.png 	http://images.nvidia.com/geforce-com/international/images/nvidia-geforce-gtx-1080-ti/GeForce_GTX_1080ti_3qtr_top_left.png	Index.html	Used under Illustration for Instruction principle.
Driving.jpg 	http://nvidianews.nvidia.com/news/nvidia-boosts-iq-of-self-driving-cars-with-world-s-first-in-car-artificial-intelligence-supercomputer	Index.html, News.html, Contact.html	Used under Illustration for Instruction principle.
Shield.png 	https://www.nvidia.co.uk/shield/shield-tv/	Index.html, Shopping.html	Used under Illustration for Instruction principle.
NVIDIA-Grid.jpg 	http://wccftech.com/nvidia-grid-official/	Index.html	Used under Illustration for Instruction principle.

DESCRIPTION OF ASSET	SOURCE	LOCATION ON WEBSITE	LICENCE/ PERMISSION
Dream-rig.jpg 	http://images.nvidia.com/pascal/img/ultimate-geforce-pc/dream-rig-header-1697x602.png	Index.html	Used under Illustration for Instruction principle.
TITANX.jpg 	https://www.geforce.co.uk/hardware/10series/titan-x/	Titan.html	Used under Illustration for Instruction principle.
titan-x-design.jpg 	https://www.nvidia.com/en-us/geforce/products/10series/titan-xp/	Titan.html	Used under Illustration for Instruction principle.
SLI-Titan.jpeg 	http://www.geforce.co.uk/hardware/10series/titan-xp/#redirected	Titan.html	Used under Illustration for Instruction principle.
SLI.png 	http://www.geforce.co.uk/hardware/10series/titan-xp/#redirected	Titan.html	Used under Illustration for Instruction principle.

DESCRIPTION OF ASSET	SOURCE	LOCATION ON WEBSITE	LICENCE/ PERMISSION
SLI-2.png 	http://www.geforce.co.uk/hardware/10series/titan-xp/#redirected	Titan.html	Used under Illustration for Instruction principle.
SLI-3.png 	http://www.geforce.co.uk/hardware/10series/titan-xp/#redirected	Titan.html	Used under Illustration for Instruction principle.
Rotating1080.mp4 	http://www.geforce.co.uk/hardware/10series/geforce-gtx-1080/	1080series.html	Used under Illustration for Instruction principle.
1080side.jpg 	http://www.geforce.co.uk/hardware/10series/geforce-gtx-1080/	1080series.html, 1070series.html	Used under Illustration for Instruction principle.
Rotating1070.mp4 	http://www.geforce.co.uk/hardware/10series/geforce-gtx-1070/	1070series.html	Used under Illustration for Instruction principle.

DESCRIPTION OF ASSET	SOURCE	LOCATION ON WEBSITE	LICENCE/ PERMISSION
1070-1.jpg 	http://www.geforce.co.uk/hardware/10series/geforce-gtx-1070/	1070series.html	Used under Illustration for Instruction principle.
1070-2.jpg 	http://www.geforce.co.uk/hardware/10series/geforce-gtx-1070/	1070series.html	Used under Illustration for Instruction principle.
1070-3.jpg 	http://www.geforce.co.uk/hardware/10series/geforce-gtx-1070/	1070series.html	Used under Illustration for Instruction principle.
LoopedTV.mp4 	https://www.nvidia.co.uk/shield/shield-tv/	Shield.html	Used under Illustration for Instruction principle.
4KShield.png 	https://www.nvidia.co.uk/shield/shield-tv/	Shield.html	Used under Illustration for Instruction principle.
VoiceShield.png 	https://www.nvidia.co.uk/shield/shield-tv/	Shield.html	Used under Illustration for Instruction principle.

DESCRIPTION OF ASSET	SOURCE	LOCATION ON WEBSITE	LICENCE/ PERMISSION
ShieldHome.jpg 	https://www.nvidia.co.uk/shield/shield-tv/	Shield.html	Used under Illustration for Instruction principle.
Grid1.jpg 	http://images.nvidia.com/content/grid/images/2.0/grid-header.jpg	Grid.html	Used under Illustration for Instruction principle.
Grid2.jpg 	http://www.nvidia.co.uk/content/cloud-computing/images/emeai/cloud-gaming/header-geforce-grid-refresh-en.jpg	Grid.html	Used under Illustration for Instruction principle.
Grid3.jpg 	https://blogs.nvidia.com/wp-content/uploads/2013/08/NV_GRID_FACEPLATE.jpg	Grid.html	Used under Illustration for Instruction principle.
Gridl1.png 	http://www.nvidia.co.uk/grid/	Grid.html	Used under Illustration for Instruction principle.
Gridl2.png 	http://www.nvidia.co.uk/grid/	Grid.html	Used under Illustration for Instruction principle.

DESCRIPTION OF ASSET	SOURCE	LOCATION ON WEBSITE	LICENCE/ PERMISSION
Gridl3.png 	http://www.nvidia.co.uk/grid/	Grid.html	Used under Illustration for Instruction principle.
Gridl4.png 	http://www.nvidia.co.uk/grid/	Grid.html	Used under Illustration for Instruction principle.
titanthumb.jpg 	http://www.chip.de/ii/6/2/8/2/2/6/1/6/ce668efe23394894.jpeg	Shopping.html, Gaming.html	Used under Illustration for Instruction principle.
1080thumb.jpg 	https://www.geforce.co.uk/hardware/10series/titan-x/	Shopping.html	Used under Illustration for Instruction principle.
1080tithumb.jpg 	https://www.nvidia.com/en-us/geforce/products/10series/geforce-gtx-1080-ti/	Shopping.html, Gaming.html	Used under Illustration for Instruction principle.

DESCRIPTION OF ASSET	SOURCE	LOCATION ON WEBSITE	LICENCE/ PERMISSION
1070thumb.jpg 	http://www.geforce.co.uk/hardware/10series/geforce-gtx-1070/	Shopping.html, Gaming.html	Used under Illustration for Instruction principle.
shieldthumb.jpg. 	http://www.androidauthority.com/nvidia-shield-4k-console-announced-4k-tegra-x1-and-android-tv-for-199-592495/	Shopping.html	Used under Illustration for Instruction principle.
Text about Titan	http://www.geforce.co.uk/hardware/10series/titan-xp/#redirected	Titan.html	Used under Illustration for Instruction principle.
Text about 1080	http://www.geforce.co.uk/hardware/10series/geforce-gtx-1080/	1080series.html	Used under Illustration for Instruction principle.
Text about 1070	http://www.geforce.co.uk/hardware/10series/geforce-gtx-1070/	1070series.html	Used under Illustration for Instruction principle.
Text about Shield	https://www.nvidia.co.uk/shield/shield-tv/?nvid=nv-int-mkshscf4ss-4553#cid=Internal-organic-SH-UK-FY17Q4-shield-darcy-announce-CORPSFG3.1-NVIDIA-homepage	Shield.html	Used under Illustration for Instruction principle.
Text about Grid	http://www.nvidia.co.uk/grid/	Grid.html	Used under Illustration for Instruction principle.
News Items	http://www.nvidia.com/object/rss_home.html	News.html	Used under Illustration for Instruction principle.
Nvidia Website	http://www.nvidia.co.uk/page/home.html	-	Used under Illustration for Instruction principle.

DESCRIPTION OF ASSET	SOURCE	LOCATION ON WEBSITE	LICENCE/ PERMISSION
Bigbag Website	http://wrapbootstrap.com/preview/WB0B9JN67	-	Used under Illustration for Instruction principle.
AMD Website	http://www.amd.com/en	-	Used under Illustration for Instruction principle.