Project Report
Web Technology – Assignment 2
eCommerce Platform

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About Us

Aditya Singgih and Xue Yang are postgraduate students at Western Sydney University, pursuing Master of Information Technology. For us, web development is one of the most important aspects of Information Technology, as well as software development. Therefore, we believe that having a good working knowledge of how web works and web development techniques is essential for software engineers, and this project is our first step in expanding our web development knowledge, by putting theory into practice.

About PC Parts Market

Our website is targeting both PC enthusiasts, and general public who are looking for a one stop shopping place for their PC / IT accessories needs. Therefore, the layout and colour choice are brighter and lighter (to provide a friendlier environment to the general public) than most online PC parts & accessories shops (who is targeting PC builders and gamers) that utilises mostly dark colour shades.

Just like any other online shopping site, the main aim for our eCommerce website is to provide convenience for the potential buyers for their shopping needs. All it requires to shop in our website is an internet capable device, and a working internet connection. As it has been outlined earlier, our website caters to both enthusiasts and general public. Therefore, instead of just including specifics items targeted to system builders and PC gamers, we also incorporate general accessories and items that might be needed by most people.

Main Usage

When accessing our website, users will be greeted with the slides of our featured products. This feature can be utilised to promote what items are popular, on sale, or newly released. Hopefully this may increase the potential of buying the items from our site.
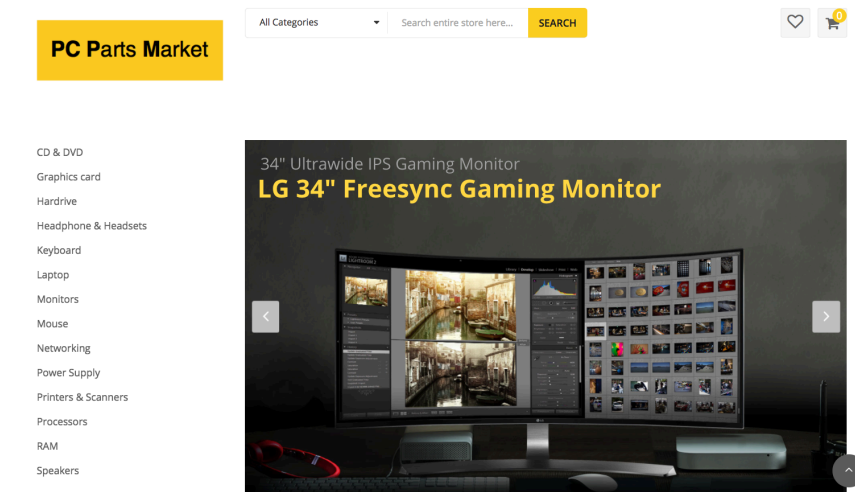
Moreover, users may also utilise the search function to find specific items that they are looking for. The search will return a list of results related to the search term. It is believed that also including the related search term may aid the users to find the exact item that they are seeking.
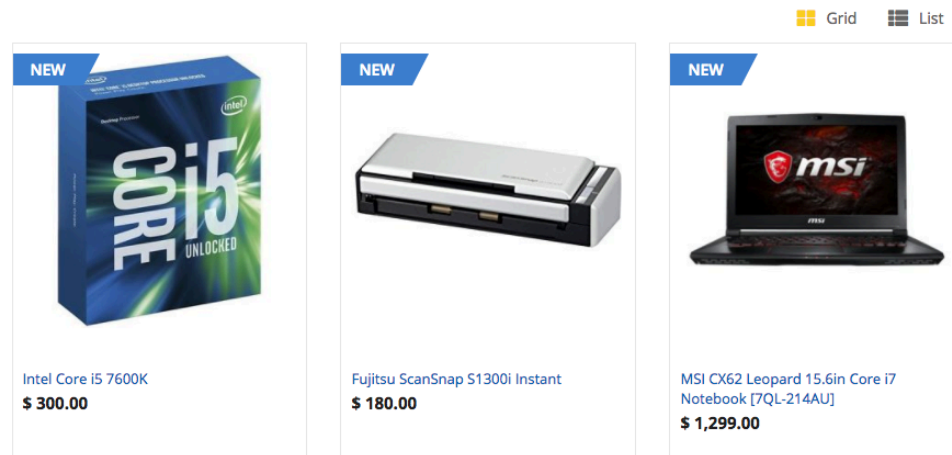

However, it is believed that most users will utilise the product categories sidebar to find the products or just window shopping. By clicking on one of the categories, users may see all products within that particular category.
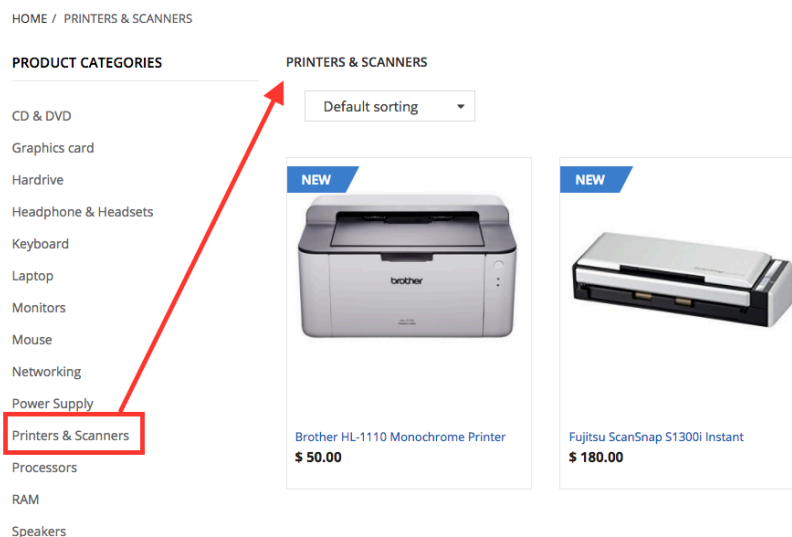

Printers & Scanners Categories

Moreover, they can do a "quick viewing" mode (that only opens up a modal page), or fully navigating to the product page.
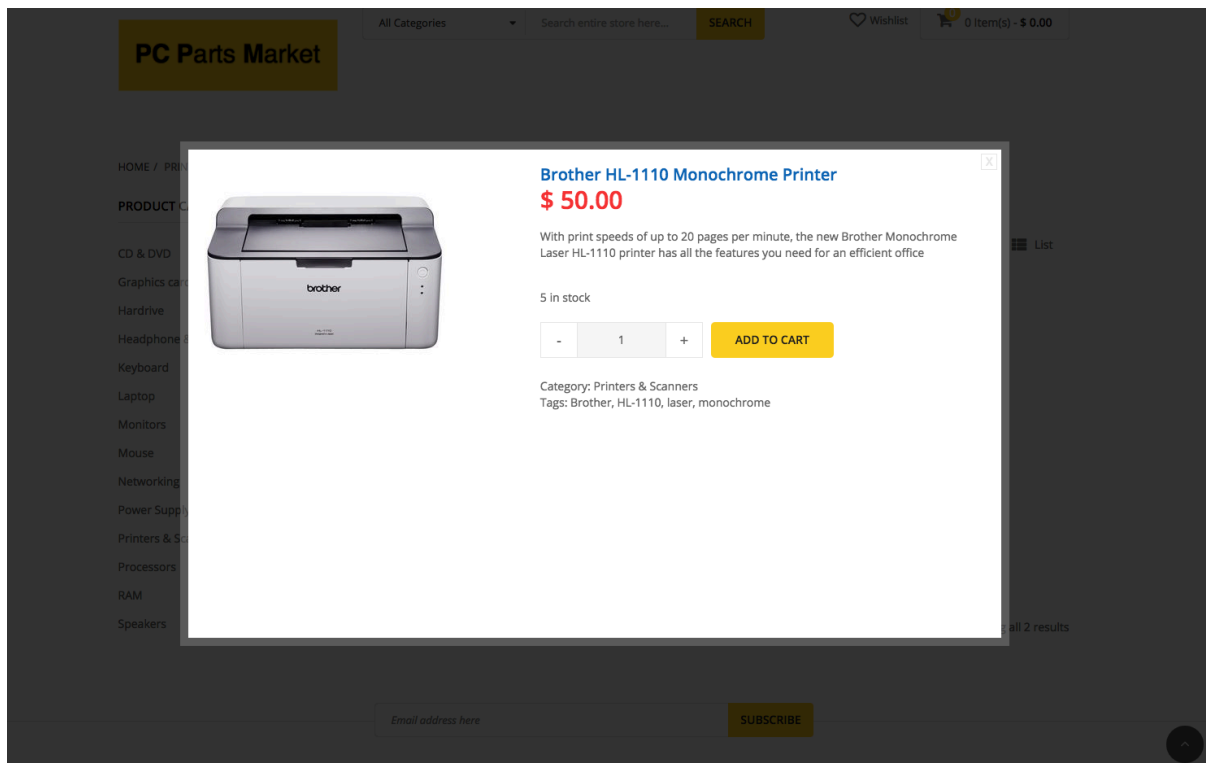
Quick Look Modal Page

If the users are happy with the product that they are looking at, they can add it to the cart. However, there's also a possibility that users want to save this product for later. This is where our wishlist feature plays its role in.
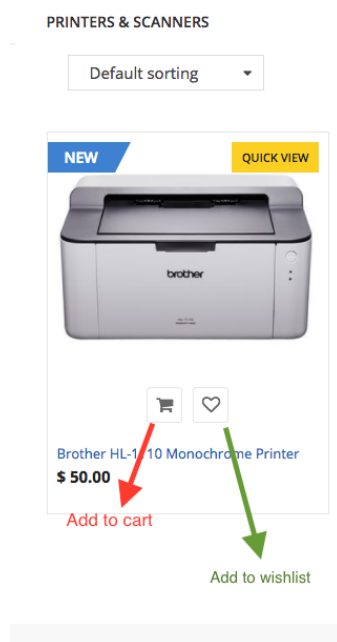
After the users are done, they can view their cart, and proceed to the checkout to pay their items. The cart summarises the items and quantity of the items that has been added by the user, as an error prevention method.

		Fujitsu ScanSnap S1300i Instant	$ 180.00	-	1	+	$ 180.00
×		MSI CX62 Leopard 15.6in Core i7 Notebook [7QL-214AU]	$ 1,299.00	-	1	+	$ 1,299.00
×		Brother HL-1110 Monochrome Printer	$ 50.00	-	1	+	$ 50.00

CART TOTALS

Subtotal	$ 1,529.00
Shipping	○ Flat rate ○ Local pickup ● Free shipping Calculate shipping
GST	$ 152.90
Total	**$ 1,681.90**

UPDATE CART   CHECKOUT

USE COUPON

Coupon code   APPLY

Methodology

Our website is designed using one of the most popular content management systems (CMS), Wordpress. Even though it was recommended that this project should be completed using Drupal, we found that Wordpress is a more beginner friendly CMS for web development. Due to the utilisation of Wordpress, populating the database was done from the functions inside the setup steps. However, as developers, we are required to provide the empty database inside MySQL. Because we are doing this project as a group, we are utilising a Network Attached Storaged (NAS) as a small server. By hosting the website in this NAS, it is possible to

After the basic installation of Wordpress is done, we can develop based on this provided theme. Nevertheless, since Wordpress is originally designed for creating blogs, we need to do some tweaks and add extra plugins and themes, in order to create a proper eCommerce website. The main thing that we installed was a plugin set from WooCommerce. It provides us the essential functionality of an eCommerce website such as shopping cart, payment methods, as well as stock & inventory management. By using this plugin, it's not necessary to implement these functions manually.

Despite of the convenience in using plugins, we are still required to do some fine tuning for our website. For example, originally, the search result returns back the number of items found from the search function. However, there seems to be no option to remove this feature from our website. This is one example where even though a CMS is being used, having a technical understanding of HTML, CSS, and PHP is proven to be very important. When solving this issue, we had to check the theme's source code, and remove the unnecessary bits of code from that file.

We were also faced with a quite major issue at the end of our project development. Since the assignment is required to be submitted to the university, we had to make sure that it is possible to pull the source codes into our local computers. This is quite uncommon, because

in most circumstances, websites are developed locally, and being uploaded to a hosting server after it's done. However, the approach that we took was in reverse. It was hosted in a NAS, so that we can work on the project remotely, and pulled it to local at the end. At this stage, there were several steps that we did. First, we had to edit the database entry regarding the home path, as well as the site path from the NAS' public IP into localhost. Next, we had to dump the SQL file from the NAS to local (so we can populate the local database later on). Lastly, we also had to change the Wordpress' configuration file to match the name of our local database, so that it can read from it properly.

Exploration

As a middleware between front-end and back-end, CMS can manage content properly and build the web pages easily. According to Shteiman (2014), one in five websites from the top 10,000 websites are build based on CMS. However, CMS has security issues just like other applications. Wordpress is well known as one of the most popular used CMS. Seven in ten of the top 10 e-commerce plugins in Word- press are vulnerable to attack. The vulnerabilities found in plugins and extensions are much more than in third-party codes and CMS core codes. Compare with the situation before CMS popular, commercial websites do not share the same standard. As result, a hacker has to be very good at all kind of technology to hack into one specific website. However, nowadays, a hacker may only how to hack one plugin, then he is dangerous to thousands commercial websites. As CMS is open to every include hackers, this makes CMS is more vulnerable than traditional websites. However, this does not mean CMS is not reliable. As CMS or open source website platform also implement security measures to defend itself. For example, two-step authentication plugin can be applied in Wordpress to prevent brute-force hacking. The main strategy for a hacker is to get a fully privileges access to backend system at the beginning. Therefore, measures like two-step authentication are effective to prevent the attack. CMS is vulnerable to attack and highly be targeted by hackers, however, at the same time, it is also well built and developed by all the developers. They can get issues and fix them in time. The security problem is always important to applications no matter the CMS or not.

Peer Assessments

Aditya Singgih's assessment of Xue Yang
Xue is very dependable and helpful as a project partner. He utilises his computer science background to help me (Aditya) in developing my web development knowledge. Xue aided me whenever I found bugs that needed to be fixed in our website by helping me breaking down the issue into smaller parts. Xue is also very reliable in terms of completing the tasks that we've allocated at the beginning of the project. In short, I'll say that Xue contributed 60% of the total, where 50% is the project, and 10% for aiding me in becoming a better developer.

Xue Yang's assessment of Aditya Singgih
We contribute to project proposal with the same contribution. Then we split the design document and the final report. I take design document while Aditya is responsible for the final report. For the website building process, we work together in my place. We basically

share the same contribution, however, Aditya solved more problems than me while building the website. The final estimate contribution by us can be half and half.

Summary and Conclusions

The report has covered the highlights regarding the background of us, the developers, as well as the development of this particular project. Regarding the development, we explained about the aim of our website and the idea behind it, typical usage of the eCommerce platform, and lastly the steps needed in creating this particular website. Moreover, this report also includes further exploration in the area of web development that focuses on security measures on webs.

Reflection

We believe that this project has helped us in utilising the available tools out there, that has been used by many web designers around the world. Utilising the CMS has opened up new options in terms of website construction. On top of organising the data into proper folders, the add-ons provide by the community has proven to be very useful in fine tuning the website for a more specific function. Moreover, we also learned that even though we are using a CMS like Wordpress, having a proper technical knowledge in HTML, CSS, and PHP contributes very well in a situation where customisation is required.