

Mobile Development

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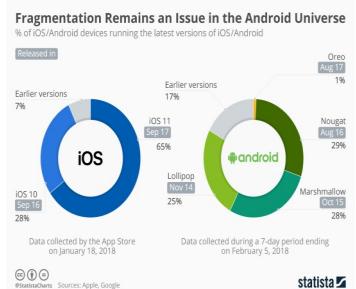
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My take on Mobile Fragmentation

My take on mobile fragmentation is also pretty much the true story and the official story, given by the major mobile development entities such as google and apple. What you have are several different version of the same operating system out in the wild. This can and does cause issues with the programming world especially if your programs wants to reach the maximum number of users. If we take the following table as found on: <https://android.stackexchange.com/questions/4447/what-percentage-of-devices-have-each-of-the-android-versions>, you can see how if you want to reach the maximum number of users with your application or game you will have to make sure your program will run on android versoin 4.4 kitkat.

Version	Codename	Distribution
2.3.3-2.3.7	Gingerbread	0.6%
4.0.3-4.0.4	Ice Cream Sandwich	0.6%
4.1.x	Jelly Bean	2.4%
4.2.x		3.5%
4.3		1.0%
4.4	KitKat	15.1%
5.0	Lollipop	7.1%
5.1		21.7%
6.0	Marshmallow	32.2%
7.0	Nougat	14.2%
7.1		1.6%



As you can tell by the chart above Apple IOs has done a much better job at deterring mobile fragmentation on their devices. In programming an application or game for any apple device, you have a much lesser chance of running into the mobile fragmentation issue if you use the application layer for the latest operating system.

Mobile Fragmentation, the official story

According to an article in <https://www.hongkiat.com/blog/android-fragmentation/>, “In general terms, fragmentation is when something is broken down into separate parts, and doesn’t function as a whole. When applied to Android, it basically means that there

isn’t a standard Android version or device on the market. Fragmentation actually encompasses two different, but related issues: hardware fragmentation and software (or OS) fragmentation.”. What I did not realize on writing this definition, that also the

phone carrier can fragment the android version even more, I had always thought it was Google fragmenting android, however, it also is the phone carriers themselves by adding their own overlays, and programs for their specific needs

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My two cents worth on Responsive Design

My two cents worth on responsive design is that a mobile application or game should respond to movement and orientation to the screen, and screen size. With the newer android operating systems starting with version 7, you can use split screen, meaning you can see two applications at the same time. Therefore, in order to have a responsive design a programmer would have to incorporate responsive screens into his design to fully utilize if the mobile device is viewed in landscape or portrait mode, as well as using the new split screen mode. Studio press put out a great beginners' guide to mobile responsive design that should be on every budding programmers radar, <https://www.studiopress.com/beginners-guide-responsive-design/>. In this article they layout exactly what mobile responsive design is, with ideas, how it works, why it works, and why you should incorporate it into your next application design. While this works well in the business application world, the gaming industry has a hard time with doing this, and keeping the graphics ratio aspect the way they would like. For example, a game in landscape would not work well if the screen was flipped to portrait. The picture to the left shows as example of responsive design as to the screen size and orientation.



Responsive Design, their story

<https://whatis.techtarget.com/definition/responsive-design>, defines responsive design as such. "Responsive design is an approach to web page creation that makes use of flexible layouts, flexible images and cascading style sheet media queries. The goal of responsive design is to build web pages

that detect the visitor's screen size and orientation and change the layout accordingly." Responsive design is not just for web page design and development, it can be used in any manner of application and design. In this case responsive design is being used in the mobile development

genre. This has the same story though, or using responsive design to actively change the aspect of the page or form depending on the orientation of the screen.

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What I think of Data Parsing (XML, JSON)

Data parsing to me means taking data from a website, or program, parsing or reading through the text to get the information you need and manipulate for a report or direct changes or viewed by the application itself.. As in the image on the right, you can see the website in the right pane, and it's XML equivalent in the left, showing the raw data that goes into the web page markup. With help from a mobile application you can take this data, shoot it over to a report, manipulate the data in a variety of different ways, and even write the data back out to another form, or the original form you received the data from. https://www.tutorialspoint.com/android/android_xml_parsers.htm, mentions data parsing as: "XML stands for Extensible Markup Language. XML is a very popular format and commonly used for sharing data on the internet." They go on to give a wonderful tutorial on the three types of parsers and what you can do with them.



Data Parsing (XML, JSON), official rendition

<https://developer.android.com/training/basics/network-ops/xml> tells us that, "Extensible Markup Language (XML) is a set of rules for encoding documents in machine-readable form. XML is a popular format for sharing data on the internet. Websites that

frequently update their content, such as news sites or blogs, often provide an XML feed so that external programs can keep abreast of content changes. Uploading and parsing XML data is a common task for network-connected apps. This lesson explains how

to parse XML documents and use their data."

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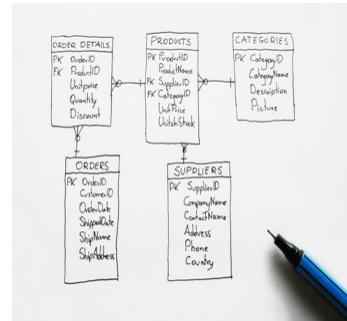
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What I think of Mobile Development Designer

The Job of a mobile development designer is different than the actual mobile development developer, although they can be one and the same. According to https://study.com/articles/Analyst_and_Application_Designer_Job_Description_and_Requirements.html, “An analyst and application designer develops software based on the specific needs of a group of end-users. They determine what the target group's expectations are for a particular piece of software (such as mobile apps or computer games) and then create a development plan for the design of the software.”.

So in my opinion, they talk to people to get the requirements for the program, what it does, who is main target user base, what is should do, what it shouldn't do, and why do we need it. The designer then goes through the user interface work, which is how the application will look. The backend to see what resources are going to be needed from the server side, such as databases, or server needs for the application itself, and what the needs will be for support and ongoing maintenance.



Mobile Development Designer, the real deal

While this website deal with the difference in a web designer and web developer, the roles, and duties are quite similar in the mobile development world as well. Designmodo gives a very good reference on the differences, what they do, and how they do each job.

<https://designmodo.com/designer-vs-developer/>. They define a designer's job as such, “Much of a designer's job is creative and uses both intuition and imagination, often characteristics of people who are considered right-brained. People in this field may continue their educations in a variety of fields but are most commonly drawn to graphic design and the arts. Designers collect work portfolios to showcase their projects for potential employers,” while they define a developer as, “A web developer builds the backbone of websites, typically from the ground up, and knows languages specific to the web. HTML, Javascript, JQuery and CSS are among the tools in their kit. Developers, historically, don't focus on making something look visually appealing but create websites with clean code and that are technically sound.” They do make a great point with this next quote about the positions being very intertwined, “At the end of the day, both web designers and web developers are working toward a singular goal – to create a website or app that entices and attracts users. To do this, both the design and development must be sound. A site needs to look good and function properly. The colors and imagery need to reflect the brand and the interface needs to encourage visitors to take a desired action. The defined lines between designers and developers are becoming more blurred as more designers are learning to code and more developers are paying close attention to design theory. (Just one of the reasons why design and development articles and tutorials are so popular.) We are all beginning to see that the future of the field includes the title web designer/developer.”

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My idea on Jailbreak or rooting

<https://www.lifewire.com/definition-of-jailbreaking-iphone-2000246>

mentions in their article dated june of 2018, “Jailbreaking changes the operating system running on an iPhone or iPod touch to give you more control. With it, you can remove Apple's restrictions and install apps and other content from sources other than the official App Store (the most popular of these is Cydia). “ To me, jailbreaking, which is the term they use for iDevices such as iPhone, and iPad, means you are manipulating the operating system in order to remove security measures that do not allow you to do certain functions. Such as installing applications not available in the iTunes app store, accessing the iOS file system, getting paid applications for free by side loading the application, and deleting built in applications that come with the base operating system. In the android world, this function is called ‘rooting’. In rooting your android device, it normally is for the same reasons, such as side loading applications, deleting “bloatware”, or built in applications that are not needed or wanted, as well as gaining access to the operating system files.



Jailbreak, or rooting, the approved definition

<https://whatis.techtarget.com/definition/jailbreaking>, defines “Jailbreaking, in a mobile device context, is the use of an exploit to remove manufacturer or carrier restrictions from a device such as an iPhone or iPad. The exploit usually involves running a privilege escalation attack on a user's device to replace the manufacturer's factory-installed operating system with a custom kernel. “, they go on with the rest of the story of, “Apple users often jailbreak iPhones and iPads to install programs that are not available through Apple's channels. Developers who don't wish to undergo Apple review or comply with Apple's AppStore rules often post apps on Cydia and other download sites used by jailbroken devices. Jailbreaking can also be used to bypass Digital Rights Management (DRM) and share copyrighted media, or to access file system, user interface, or network capabilities that are otherwise locked down. “ which is actually the main reason.

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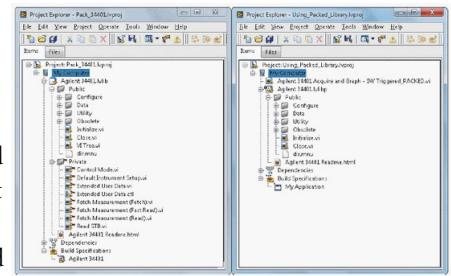
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What I think of Code Libraries

Code libraries are re-usable snippets of code that can be utilized and put into any program currently being designed and developed. The re-use of code is both economical and reduced time spent on development needs since the programming code needing to be used has usually already been tested and known to be at least semi bug free. This save development time, testing time, and overall reduces the cost to build, design and develop any application the company is working on at the time. The latter-day saints site, <http://tech.lds.org/blog/390-using-code-libraries-in-your-projects>, explains a bit about code libraries, stating, “A code library is a compilation of code originally written for a particular software application that can be used in other applications. At the Church, any code that developers have not written themselves while working on Church applications is called a “code library.” They go on to state, “Using a code library is one of the most popular ways to reuse content created for the web. After all, a lot of different applications are released every day, but many of their essential functions are the same. A code library offers developers a shortcut. Rather than write all code from scratch, you can simply borrow the existing code that others have written and spend more time refining unique parts of your app. “



Code Libraries, What they Say

<https://www.pcmag.com/encyclopedia/term/57725/code-library>, has this simply to say about what a code library really is. “A set of routines for a particular operating system. Depending on the environment, code libraries may be source code, in an intermediate language or in executable

form.” I had not thought about the code library could be used for different operating systems as well. You could have a library for Android, that pulls in all your android programming needs, as well as one for iOS. Normally I have programmed in windows, so all

you need is the re-usable code for windows modules. But, with this new knowledge I can also use operating system modules and keep the main program the same.

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What I think of Artificial Intelligence

Artificial intelligence(AI) is an interest of mine, the idea of creating intelligence out of a sequence of code, and hopefully make that learn, think, adapt, and interpret for itself without further input from coding. Like my definition of AI, <https://searchenterpriseai.techtarget.com/definition/AI-Artificial-Intelligence>, states that “AI (artificial intelligence) is the simulation of human intelligence processes by machines, especially computer systems. These processes include learning (the acquisition of information and rules for using the information), reasoning (using the rules to reach approximate or definite conclusions) and self-correction. Particular applications of AI include expert systems, speech recognition and machine vision.”



Artificial Intelligence, What smart people say

Britannica encyclopedia, <https://www.britannica.com/technology/artificial-intelligence>, defines artificial intelligence as: “**Artificial intelligence (AI)**, the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience. Since the development of the digital

computer in the 1940s, it has been demonstrated that computers can be programmed to carry out very complex tasks—as, for example, discovering proofs for mathematical theorems or playing chess—with great proficiency. Still, despite continuing advances in computer processing speed and memory capacity, there are as yet no programs that can match human flexibility over wider domains or in tasks requiring much everyday knowledge. On the other hand, some programs have attained the performance levels of human experts and professionals in performing certain specific tasks, so that artificial intelli-

gence in this limited sense is found in applications as diverse as medical diagnosis, computer search engines, and voice or handwriting recognition”

Game Development

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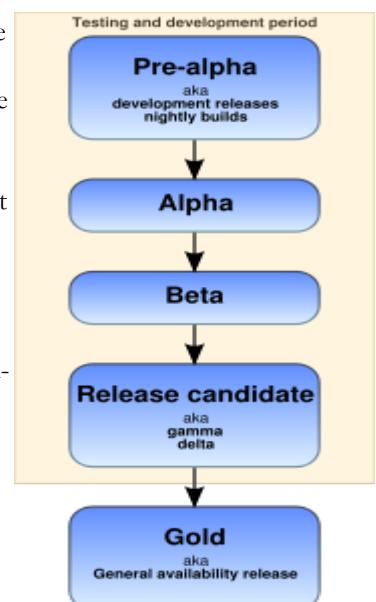
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What I think of Software Releases

In any software release you have varying stages of when or how the software will be released. Alpha/Beta/Gold/Final, and Release are the basic categories of these stages. The first stage of development is the pre-alpha, this is where the code is pretty buggy still, nightly builds are done, and tested. The alpha stage is still pretty loaded with bugs and testing, but getting close to public testing, quite a few games pick a select few people in the public sector to help in the testing and initial bug squashing. In the beta phase we see more people from the public sector brought in to hammer out any other bugs, change features, test the load on the server, if this is not a stand alone game, or application, as well as testing the application on their device to make sure there are no memory leaks, or needing any further programming tweaks for device specific hardware. After the beta, the program is getting closer to release. The release candidate stage see most of the code in completion for basic functionality, most of the bugs, or undocumented features have been resolved, and spelling errors have been changed. When the release candidate has been tested thoroughly we go on to the final phase of testing, the gold release. In the gold release the development company is ready for release to the general public. This stage is the final stage of development, after this, all there is to do, maintenance, further development of new content, and minor bug fixes that didn't get taken care of on the previous stages. <https://techterms.com/definition/>

goldenmaster, explains this well.



Software Releases, the official rendition

<http://gameindustryre-sub.blogspot.com/2010/05/alpha-beta-and-gold-master.html>, states in basic terms the three levels of testing in the game industry.

“**Alpha** is the stage after which all the foundations of the design are layed down and the key features are completed. At

this stage the game should look like a basic form of it's finished product. Alpha is used as a base to work and implement improvements to during the next stage. “, “**Beta** is the second major milestone in development. During the Beta testing bugs/glitches are corrected and the code should be completed. There should be no more changes at Beta stage to

the key elements of the game, as the game should be near finalisation at this point. “, and “**Gold Master** stage is the complete game, and should contain no bugs, and the game should ideally be ready for manufacturing.”

Game Development

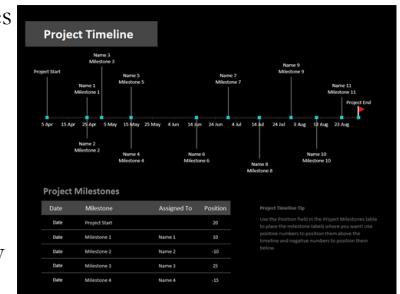
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My Idea of Milestones

Milestones are a way of scheduling certain developmental stages need to be taken care of. Such as, the artwork needs to be completed by a certain date or timeline. Program development is separated in several phases, in these phases you have differing milestone set on a schedule that need to be taken care of in order to deliver the product in a timely manner. Using a milestone schedule can reduce cost of the project, maintain the product will be delivered on time, as well as hold accountability of each department to see the product schedule adhered to.



<https://www.teammantt.com/blog/the-how-and-why-of-using-milestones-in-your-project-plan>, has a great definition of this, “A milestone is a marker in a project that signifies a change or stage in development. Milestones are powerful components of a project plan because they show key events and map forward movement. They act as signposts through the course of your project, as they help to ensure that you’re staying on track.”.

Milestones, The definitive rendition

The business dictionary defines milestones having two definitions, “1. General: Sub-objectives or stages into which a program or project is divided for monitoring and measurement of work performance. 2. Project management: Scheduled event that indicates the completion of a major delivera-

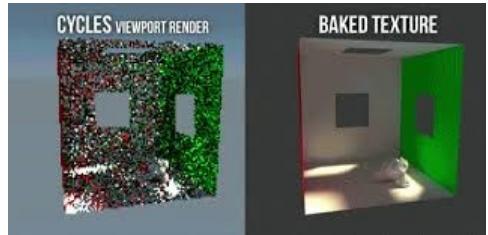
ble event (or a set thereof) of a project. Milestones are measurable and observable and serve as progress markers (flags) but, by definition, are independent of time (have zero durations) therefore no work or consumption of resources is associated with them.”

Read more: <http://www.businessdictionary.com/definition/milestone.html>

Computer Animation

The idea of baking

Not being a computer animator I have not heard this work much in my travels. So much to my enjoyment, I had to look it up and read a couple of articles on what this is, how you do it, and why you would want to use the term ‘baking’ in computer animation. In the blender forum,



<https://blender.stackexchange.com/questions/14416/what-does-baking-mean>, the article states there are two type of baking, also which I didn't know, “There are a couple different kinds of baking.

Texture baking

Baking could mean that you calculate specified data, and save it to a texture, which then you use in your material.

The purpose of baking is to save in render times, because Blender recalculates all shadows, lighting and what not, every single frame, which results in a lot of time wasted time for long animations.

However, render baking should only be used on objects which don't move, or aren't affected by other moving objects (except for the camera), otherwise the viewer will notice that shadows are moving when they shouldn't be, or are not moving when they should, breaking the illusion of realism.

Physics baking

Baking can also mean pre-calculating physics simulations such as Cloth or Rigid Body. For this Blender saves them to a file, which then loads when rendering or playing back the animation so that the physics don't have to be recalculated every time.”

Baking, the official techspeak

There is a great article by cgcookie, <https://cgcookie.com/articles/big-idea-baking>, on the big idea of baking, what it is, and the idea behind it. There are initially three types of baking, texture, animation/simulation, and Light. Texture baking is the most com-

mon and often used since most animations have static background and art. Animation and simulation baking, which take a keyframed character, and consolidating the data into a simplified form. Light baking, is a bit more geared for the game industry,

this has two kinds of lights that can be baked, static, and dynamic. “Static lights are stationary and can be excluded from dynamic calculation to save game resources “,

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What is this thing we call Rendering

<https://techterms.com/definition/rendering> defines three types of rendering, that of graphics, video, and audio. "Rendering is the process of generating a final digital product from a specific type of input. The term usually applies to graphics and video, but it can refer to audio as well." The report continues to define graphics rendering as "3D graphics are rendered from basic three-dimensional models called wireframes. A wireframe defines the shape of the model, but nothing else. The rendering process adds surfaces, textures, and lighting to the model, giving it a realistic appearance. For example, a 3D drawing application or a CAD program may allow you to add different colors, textures, and lighting sources to a 3D model. The rendering process applies these settings to the object.", it defines the video rendering process as, "3D animations and other types of video that contain CGI often need to be rendered before viewing the final product. This includes the rendering of both 3D models and video effects, such as filters and transitions. Video clips typically contain 24 to 60 frames per second (fps), and each frame must be rendered before or during the export process. High-resolution videos or movies can take several minutes or even several hours to render. The rendering time depends on several factors including the resolution, frame rate, length of the video, and processing power.", and defines audio rendering as, "Like video effects, audio effects can also be rendered. For example, a DAW application may include effects like reverb, chorus, and auto-tune. The CPU may be able to render these effects in real-time, but if too many tracks with multiple effects are being played back at once, the computer may not be able to render the effects in

real-time. If this happens, the effects can be pre-rendered, or applied to the original audio track. All effects are rendered when the final mix is exported or "bounced" as an audio file.



Rendering, from professionals point

<https://www.techopedia.com/definition/9163/rendering> defines rendering as: "Rendering is the process involved in the generation of a two-dimensional or three-dimensional image from a model by means of application programs. Rendering is mostly used in architectural designs, video games, and animated movies, simulators, TV special effects and design visualization. The techniques and features used vary according to the project. Rendering helps increase efficiency and reduce cost in design."

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Mood Book/Mood Board, what is it?

This is another one of those wonderful learning experience things, since I am not in graphics design, I have no clue as to what this is. In my mind, it is a white board, or book that one creates sketches on future projects, or current projects that they can and quite possibly will use in the future. Boy was I wrong, a mood board according to <https://www.techopedia.com/definition/31851/mood-board>, “A mood board is a collage or composition of images, visuals and other objects, often created for the purposes of design or presentation. Mood boards can help designers to figure out how to create unified styles or themes for a design project.” I was under the completely wrong idea as to what a mood board was, and am thankful for this information to know.



Mood Book/Mood Board, What is really is.

I just read an interesting article from <https://creativemarket.com/blog/mood-boards-why-and-how-to-create-them>, about why and how we would create a mood board. “It is a collection of colors, images, fonts and textures that would perfectly define what the project is about. Ever get that feeling that your client just isn’t getting what you’re trying to explain about the design you’re trying to put together? That’s what your mood board is for. It’s that perfect tool that could help you and your client agree on design aspects that would put the entire puzzle together.” They even give an excellent example on how to make one, “Here are a few tips left to help you along the way: Find inspiration out in the world, not just on your computer. · Take pictures, lots of pictures. · Focus on a larger image and build the rest of the board around it. · Watch how your audience reacts, it could help you come up with a concept next time. Have fun with it!”

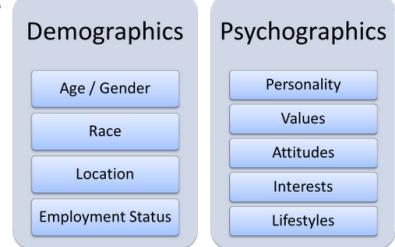
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What the heck is psychographics

This one completely had me stumped. Another reason to enjoy this assignment. I had never heard the term psychographics before this assignment. But I was looking through the differences between the two, demographics is the hard facts such as age, gender, race, location, while psychographics are soft facts such as attitudes, personality, interests, lifestyle, and values.

The Huffington Post has an awesome report on what psychographics is: https://www.huffingtonpost.com/entry/what-are-psychographics_us_594be378e4b07cdb1933c05b, “Psychographic studies examine and classify people according to their attitudes, aspirations, and other psychological criteria. It involves asking specific groups of consumers

questions about their activities, interests, preferences, and opinions. Researchers can then blend the results with other datasets—such as demographic or geographic information—in order to develop a more nuanced portrait of the group.” They continue with this statement, “Psychographics shouldn’t be confused with demographics. For example, a data-point like “Age” or “Gender” belongs under the umbrella of demographics, whereas something like “Values” or “Concerns” would fall under psychographics. “



Psychographics, the real deal

The business dictionary, has the following definition on its site, <http://www.businessdictionary.com/definition/psychographics.html>, “Analysis of consumer lifestyles to create a detailed customer profile. Market researchers conduct psychographic research by asking consumers to agree or disagree with activities, interests, and opinions statements. Results of this exercise are combined with geographic (place of work or residence) and demographic (age, education, occupation, etc.) characteristics to develop a more ‘lifelike’ portrait of the targeted consumer segment.“. So now I understand the idea and uses of psychographics. I put it in perspective in my head of demographics are the ‘hard’ facts, and psychographics are to ‘soft’ facts, if you put the two together you have a better understanding of your audience, whether writing applications, or gams.

Web Design and Development

My Comprehension of Markup (HTML, and CSS)

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I not being a web designer also didn't know the correct definition when it came to markup. I was under the impression that markup was a process in design where you could change certain text or colors. Essentially I was correct, but not totally. <https://whatis.techtarget.com/definition/markup>, "Markup refers to the sequence of characters or other symbols that you insert at certain places in a text or word processing file to indicate how the file should look when it is printed or displayed or to describe the document's logical structure. The markup indicators are often called "tags.", it does go on to say, "Markup can be inserted by the document creator directly by typing the symbols in, by using an editor and selecting prepackaged markup symbols (to save keystrokes), or by using a more sophisticated editor that lets you create the document as you want it to appear (this is called a WYSIWYG editor). "

```
<h1>Why markup matters</h1>
<p>This is a <em>paragraph</em>. You may be reading this paragraph on any of the following:</p>
<ul>
  <li><a href="http://tumblr.com">Tumblr</a>
  dashboard</li>
  <li>RSS reader</li>
  <li>Browser</li>
</ul>
```

Markup (HTML, and CSS), the pros tell it

For this definition, we see markup language is used to change the visual aspect of the text so it can be shown on a webpage. Since there are so many different browser out there you have to have a standard in which to show effects and values of given text on an html web page. Techterms.com (<https://techterms.com/definition/html>) defines Markup(HTML) as: "Stands for "Hypertext Markup Language." HTML is the language used to create webpages. "Hypertext" refers to the hyperlinks that an HTML page may contain. "Markup language" refers to the way tags are used to define the page layout and elements within the page. "In my humble opinion, to me the markup language uses a special character in order to change the view, or look of the text.

References

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Khaliq, Azzief	None specified, but by reading the article one can assume December 29, 2013	Android Fragmentation: The Story So Far	https://www.hongkiat.com/blog/android-fragmentation/
Byers, Josh	March 16, 2012	A Beginner's Guide to Mobile Responsive Design	https://www.studiopress.com/beginners-guide-responsive-design/
Rouse , Margaret	January, 2012	responsive design	https://whatis.techtarget.com/definition/responsive-design
None Given	None Given	Android - XML Parser	https://www.tutorialspoint.com/android/
None Given	None Given	Parse XML data	https://developer.android.com/training/basics/network-ops/xml
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