Team U+1F60E
Maximillian Shen with sidekick Snormax
River Strumwasser with sidekick Billiam
Daniel Yu with sidekick SIR Koalus
IntroCS pd5
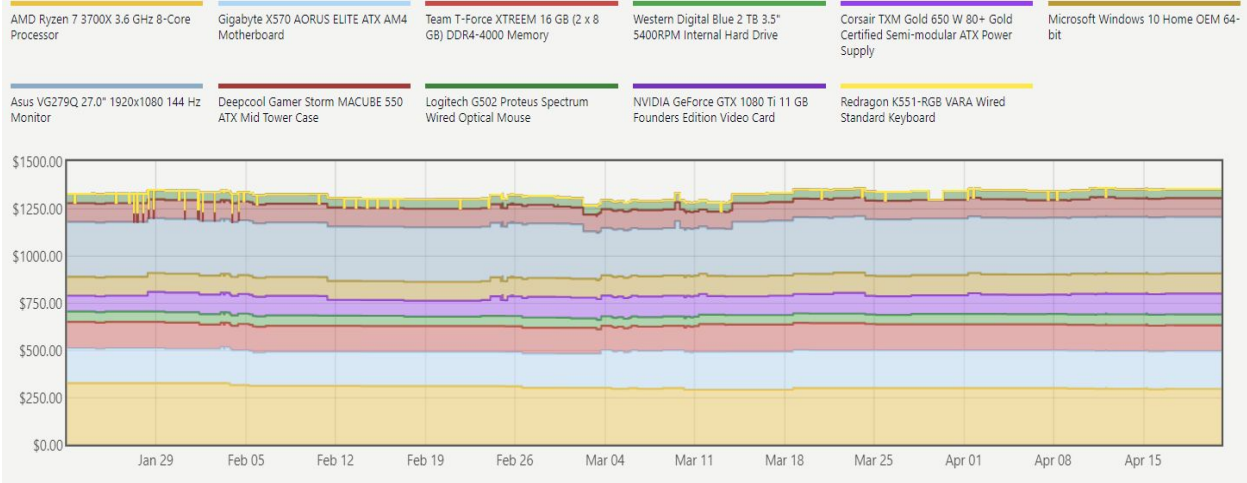L1 -- On Wednesdays We Wear Pink
2020-04-08

GENERAL

As an architect, the application that Tyrone will use the most is AutoCAD 2020. Since AutoCAD 2020 is a software designed to create realistic 3D models, the main aspects that we will focus on are the graphics, RAM, and storage. AutoCAD relies on its visuals to give the user accurate measurements and aesthetics, making the graphics card incredibly important in building this computer. Since Tyrone will most likely be working on numerous projects, he will need access to a larger storage than most computers, and since AutoCAD will be running for a while, a decent RAM is critical in an architect's computer. The specs and the keyboard and mouse make it a great gaming computer as well.

PITCH

Since we have all taken drafting as a class before and have used the Application AutoCAD rather extensively, we are familiar with how the application functions and it's many different tools. Using AutoCAD on school computers, which probably do not have the highest quality hardware, seemed to always be a gamble. Much of the time, AutoCAD would function normally, with little lag. However, that was not always the case; an overwhelming majority of students have had at least one bad experience with it; their work glitches and deletes itself, AutoCAD can't handle lots of computations, and in students trying to fix that issue, they add in many extra components, or the tools on AutoCAD simply did not do what they were supposed to do. By building a computer in which we have tailored specifically for the use of AutoCAD, many of the problems mentioned above will disappear, or at least happen significantly less.

The computer we have designed for Tyrone has handpicked parts that each allow for a specific aspect of the AutoCAD based computer. These reasons are listed below, along with the model name and an image. As this machine is custom-built and its parts are of higher quality and are more expensive than a normal computer, it will cost more than the expected price of an average computer. However, the cost of our computer does not exceed Tyrone's budget, meaning that Tyrone may buy a few other softwares he wishes to utilize. We purposefully kept the price somewhat below the max budget to save money and account for price fluctuations of the parts. This way it's a more reliable build that's possible in case one part's price suddenly goes up, something no other build does. For example the [Asus VG279Q 27.0" 1920x1080 144 Hz Monitor](#), not even the most expensive part saw its price drop sixty dollars over a three month period. Most parts experience between $20-30 of fluctuation. Our build accounts for that.

Part List Price History

AMD Ryzen 7 3700X 3.6 GHz 8-Core Processor | Gigabyte X570 AORUS ELITE ATX AM4 Motherboard | Team T-Force XTREEM 16 GB (2 x 8 GB) DDR4-4000 Memory | Western Digital Blue 2 TB 3.5" 5400RPM Internal Hard Drive | Corsair TXM Gold 650 W 80+ Gold Certified Semi-modular ATX Power Supply | Microsoft Windows 10 Home OEM 64-bit

Asus VG279Q 27.0" 1920x1080 144 Hz Monitor | Deepcool Gamer Storm MACUBE 550 ATX Mid Tower Case | Logitech G502 Proteus Spectrum Wired Optical Mouse | NVIDIA GeForce GTX 1080 Ti 11 GB Founders Edition Video Card | Redragon K551-RGB VARA Wired Standard Keyboard

$1500.00
$1250.00
$1000.00
$750.00
$500.00
$250.00
$0.00

Jan 29 Feb 05 Feb 12 Feb 19 Feb 26 Mar 04 Mar 11 Mar 18 Mar 25 Apr 01 Apr 08 Apr 15

This graph shows the price fluctuation of all of the components of the build except the graphics card. The build cost goes up or down approximately a hundred dollars multiple times over the course of just a few months. A safety net of extra money is clearly necessary in case Tyrone decides to purchase his computer at a high-cost period.

Tyrone will also find that this computer is able to run any of these applications with ease, being able to smoothly produce incredibly realistic models with no lag. According to Easy Render, a collective of thousands of 3D artists, our Video Card choice, the NVIDIA GeForce GTX 1080 Ti 11 GB Founders Edition Video Card is possibly the best of all graphic cards for realistic architectural rendering. It produces extremely high quality images at high frame rates and low temperatures, with 11GB of memory for lots of complex graphics being able to be produced at once.

The thing we can't stress enough though is the overall seamlessness and compatibility of the build for an architect. From similarly-designed peripherals to the best video card to our low cost to intricacies like the monitor size, our build provides everything Tyrone will need.

INFO

We used ZalorCrenshi's CAD Build as a base for us to work off of when we created our build, as its compatibility with CAD would help us design our AutoCAD-2020-based computer. The link to their build is https://pcpartpicker.com/b/VZnH99.

We've also used a list of AutoCAD System Requirements referenced from Autodesk to guide our part choices. http://www.designmaster.biz/support/autocad-system-requiremen.html is the link to the website. For AutoCAD 2020, the PC needs an Operating System of Microsoft Windows 10 (64-bit only), 8.1 (64-bit only), or 7 SP1 (64-bit only). The Processor must be 2.5 GHz (3+ GHz recommended). It must have at least 8 GB (16GB recommended) of RAM. It must

have 6.0 GB of disk space for the program, and more for its files. The display must be 1920 x 1080 resolution with True Color.

BUILD

The link to our build on PC Part Picker is https://pcpartpicker.com/list/cNvLYH.

Item Type	Item Name	Cost
CPU	AMD Ryzen 7 3700X 3.6 GHz 8-Core Processor	$294.14
	The core clock for this CPU is 3.6 GHz, which is the recommended amount of 3+ for AutoCAD 2020. It also has an integrated CPU cooler. It has a 4.9 star rating out of 1000+ reviewers, which proves its reliability for many situations.	
Motherboard	Gigabyte X570 AORUS ELITE ATX AM4 Motherboard	$199.00
	This motherboard uses DDR4 memory, which accesses memory extremely quickly. It also has integrated Ethernet for a Network setup. It also has effective fan cooling systems for overdrive, effective when dealing with large-scale projects in AutoCAD 2020.	
RAM	Team T-Force XTREEM 16 GB (2 x 8 GB) DDR4-4000 Memory	$137.99
	This memory chip can hold 16GB of RAM, which is recommended for AutoCAD 2020. Its speed is DDR4-4000, which is much more than necessary, not only providing fast use of AutoCAD, but proves itself able to handle surges in necessary data.	
HDD	Western Digital Blue 2 TB 3.5" 5400RPM Internal Hard Drive	$57.49
	The 2TB of storage provided by this disk is more than enough to store all necessary projects saved for designing with AutoCAD, and the 6GB it takes to install the program.	
PSU	Corsair TXM Gold 650 W 80+ Gold Certified Semi-modular ATX Power Supply	$122.84
	This power supply unit can provide 650W, which covers the parts running an estimated 424W, and surges of excessive use requiring more power. Its rated gold, which proves it's a good unit, and its semi-modular, so it can be adjusted without needing a full manual setup with lots of chords.	
Case	Deepcool Gamer Storm MACUBE 550 ATX Mid Tower Case	$99.99
	This case is compatible with other ATX forms throughout the build. The design of the case is very sleek and matches the generally black theme, and its volume can fit the parts selected.	

OS	[Microsoft Windows 10 Home OEM 64-bit](#)	$109.99
	It's a 64-bit microsoft system, which is not only a powerful system, but also the best choice for AutoCAD 2020, as listed.	
Graphics	[NVIDIA GeForce GTX 1080 Ti 11 GB Founders Edition Video Card](#)	$1289.99
	This graphics card is one of the best you can get. It produces extremely high quality images at high frame rates and low temperatures. Its massive 11GB of memory makes it able to handle extremely complex graphics at extremely fast rates. Its GDDR5X memory lets it perform very quickly. Its quick, efficient, effective and like one of the reviewers said- " Expensive but the best".	
Monitor	[Asus VG279Q 27.0" 1920x1080 144 Hz Monitor](#)	$299.00
	This monitor's dimensions are 1920x1080, which is what AutoCAD 2020 needs to run. It has true color IPS. It also comes with a Built-In speaker, so no extra speaker parts are necessary. Great for display and big enough for programming complex blueprints.	
Keyboard	[Redragon K551-RGB VARA Wired Standard Keyboard](#)	$49.99
	This keyboard is inexpensive, yet still a great system. The keys are illuminated, and it's wired for symplicity. The main purpose of it is to provide functionality for the computer, and reviewers say the keys are easy to press. Complete with an average user rating of 5 stars.	
Mouse	[Logitech G502 Proteus Spectrum Wired Optical Mouse](#)	$69.98
	This mouse has very high ratings, proving that it works well for many people, and it's wired, so it needs no extra setup of a bluetooth system. Overall great usability.	
Total Build Cost		**$2717.55**