**Part A**

**I**

**A**

**B**

**C**

**D**

**E**

**F**

**G**

**Objective** : Name and decribe each component



**H**

|  |  |  |
| --- | --- | --- |
| Download [**http://tinyurl.com/CW208-CAG-SIM**](http://tinyurl.com/CW208-CAG-SIM) PC Build Simulator.  Go through steps of building a PC, as you complete the simulation find and describe in detail components A to I. To run simulator first install <http://www.swffileplayer.com/> and open ***RootMovie.swf*** using SWF player. Alternatively install [Macromedia Flashplayer](https://fpdownload.macromedia.com/pub/flashplayer/updaters/32/flashplayer_32_sa.exe) . Ideally use a simulator as listed in class. | | |
| Label | Name each component | Description |
| A | Wireless NIC | Connect Computer to a network |
| B | Video Adapter | Provide video capabilities |
| C | Heat Sink | Forces air through heat sink |
| D | Power Supply | A power supply provides the needed voltage to power the various electronic circuits that make up the PC. |
| E | Optic Drive | Reads digital video disks |
| F | Floppy Disk | Reads and writes memory to floppy disk |
| G | Hard Drive Disk | Reads and writes memory to fixed disk |
| H | SATA Cable | Connect SATA Drives to motherboard |
| I | Motherboard | The main printed circuit board in a computer |

**Part B**

**Objective**

Compare a pre-assembled system and the components that could be assembled to build a comparable system. After completing this practical, you should be able to:

1. Identify the components of a pre-assembled system
2. Locate prices for components needed to assemble a comparable system
3. Compare the cost of a pre-assembled system and a self-assembled system.

If you can’t find exact match for components, find the closest possible substitute. Use the Internet and available computer-related publications as your sources for information. Examples of websites for computer parts [www.komplett.ie](http://www.komplett.ie), [www.dell.ie](http://www.dell.ie), [www.custompc.ie](http://www.custompc.ie) [www.amazon.de](http://www.amazon.de)

MAKE SURE TO INCLUDE VALID LINKS TO WEB REFERENCES

|  |  |  |
| --- | --- | --- |
|  | **Pre-Assembled Computer Package** | **Computer Package**  **Components** |
| **CPU** | [AMD Ryzen™ 5 5600X (6-Core, 35MB Total Cache, Max Boost Clock of 4.6GHz)](https://www.amazon.co.uk/AMD-Ryzen-5600X-Processor-Cache/dp/B08166SLDF)-319 euro | [Intel Core i7-10700K (base clock: 3.80 GHz; socket: LGA1200; 125 watt)](https://www.amazon.de/-/en/Intel-Core-i7-10700K-base-clock/dp/B0883P8CNM/ref=sr_1_5?dchild=1&keywords=Intel+Core+i7&qid=1635346439&sr=8-5) – 321 euro |
| **Storage / Memory** | | |
| |  | | --- | |  | | RAM | | Hard Drive | |  | | |  | | --- | |  | | [8GB, 1x8GB, DDR4, 3200MHz, XMP](https://www.amazon.com/HyperX-3200MHz-Desktop-Memory-HX432C16FB3A/dp/B07WJJFV9Z)- 83 euro | |  | | [256GB M.2 PCIe NVMe SSD](https://www.amazon.co.uk/Integral-256GB-Internal-2000MB-1200MB/dp/B07YBMCK92/ref=sr_1_1_sspa?adgrpid=62017913647&dchild=1&gclid=EAIaIQobChMI4K7Qj-nq8wIVKQwGAB3qXAK5EAAYASAAEgKFR_D_BwE&hvadid=291335095439&hvdev=c&hvlocphy=1007846&hvnetw=g&hvqmt=e&hvrand=15746656201191762078&hvtargid=kwd-356241787355&hydadcr=2658_1761517&keywords=256gb%2Bnvme%2Bm2&qid=1635345609&sr=8-1-spons&spLa=ZW5jcnlwdGVkUXVhbGlmaWVyPUFHS0YyM1FXSExYTkwmZW5jcnlwdGVkSWQ9QTEwNDAzMzIzUFdJRkk5QjNQWE5YJmVuY3J5cHRlZEFkSWQ9QTAzOTgyNTAxSENBM1oxSUVQOUZCJndpZGdldE5hbWU9c3BfYXRmJmFjdGlvbj1jbGlja1JlZGlyZWN0JmRvTm90TG9nQ2xpY2s9dHJ1ZQ&th=1)-37 euro | | [Corsair Vengeance LPX High Performance Desktop Memory Module, Black](https://www.amazon.de/-/en/Corsair-Vengeance-Performance-Desktop-Memory/dp/B0143UM4TC/ref=sr_1_3?crid=1ZTWP6V7JPFNK&dchild=1&keywords=16%2Bgb%2Bddr4&qid=1635346549&sprefix=16%2Bgb%2B%2Caps%2C146&sr=8-3&th=1) – 67 euro  [Crucial MX500 CT500MX500SSD1 500GB (3D NAND, SATA, 2.5 Inch, Internal SSD)](https://www.amazon.de/-/en/Crucial-MX500-CT500MX500SSD1-500GB-Internal/dp/B0786QNS9B/ref=sr_1_4?crid=1YQQ1GKBHZEM&dchild=1&keywords=SSD+500+GB&qid=1635346607&sprefix=ssd%2Caps%2C156&sr=8-4) – 55 euro |
| **Input/Output** | | |
| |  | | --- | | Keyboard | | Pointing Device | | Monitor | | Speakers | | Network Adapter | |  | |  | | [Alienware 510K Low-profile RGB Mechanical Gaming Keyboard - AW510K (Lunar Light)](https://www.dell.com/en-ie/shop/alienware-low-profile-rgb-mechanical-gaming-keyboard-aw510k-us-int-qwerty/apd/545-bbcl/pc-accessories) – 152 euro  [Alienware 310M Wireless Gaming Mouse - AW310M](https://www.dell.com/en-ie/shop/alienware-wireless-gaming-mouse-aw310m/apd/545-bbco/pc-accessories) – 49 euro  [Dell 27 Gaming Monitor | S2721HGF - 69cm(27") Black](https://www.dell.com/en-ie/shop/dell-27-curved-gaming-monitor-s2721hgf/apd/210-awyy/monitors-monitor-accessories) – 280 euro  [Dell Mobile Adapter Speakerphone- MH3021P](https://www.dell.com/en-ie/work/shop/dell-mobile-adapter-speakerphone-mh3021p/apd/470-aelp/pc-accessories) – 168 euro  [Killer E3100U 2.5 GbE USB-C Ethernet Adapter - Black](https://www.amazon.co.uk/Killer-E3100U-USB-C-Ethernet-Adapter/dp/B08HNJC3R8)- 50 Price | [Rii RK907 Keyboard USB, Wired Keyboard PC, Business Slim Keyboard with Cable for Mac/PC/Tablet/Windows/Android/Microsoft, QWERTZ German Layout](https://www.amazon.de/-/en/Keyboard-Business-Windows-Android-Microsoft/dp/B07VK1P4C9/ref=sr_1_4?crid=1BFGCR7DDEN5L&dchild=1&keywords=keyboard+pc&qid=1635346687&sprefix=keyboard+%2Caps%2C169&sr=8-4) – 14 euro  [Amazon Basics Wireless Computer Mouse with USB Nano Receiver, Red](https://www.amazon.de/Amazon-Basics-Wireless-Computer-Receiver/dp/B01NADN0Q1/ref=sr_1_7_sspa?dchild=1&keywords=Maus&qid=1635346749&sr=8-7-spons&psc=1&spLa=ZW5jcnlwdGVkUXVhbGlmaWVyPUEyWExITE1BVEZFUjNHJmVuY3J5cHRlZElkPUExMDQwMTA2MkJEU0FaVU9OWVlUViZlbmNyeXB0ZWRBZElkPUEwNzg3MDM1M1BNWEtEWDRCSVE1MSZ3aWRnZXROYW1lPXNwX210ZiZhY3Rpb249Y2xpY2tSZWRpcmVjdCZkb05vdExvZ0NsaWNrPXRydWU=) – 14 euro  [Samsung Gaming monitor](https://www.amazon.de/-/en/LC24F396FHRXEN-Samsung-Gaming-monitor/dp/B08WJG41B4/ref=sr_1_4?dchild=1&keywords=monitor&qid=1635346812&sr=8-4) – 130 euro  [Logitech Z200 2.1 speakers with subwoofer, surround sound, 10 watts peak power, 2x 3.5mm inputs, volume control, EU plug, PC / TV / phone / tablet - Midnight Black / Black](https://www.amazon.de/-/en/Logitech-speakers-subwoofer-surround-control/dp/B00EUUXBDE/ref=sr_1_3?crid=7GYR3RAU281C&dchild=1&keywords=boxen&qid=1635346868&sprefix=speaker%2Caps%2C159&sr=8-3)  - 28 euro  [Syncwire USB 3.0 to RJ45 Gigabit Ethernet Adapter - 10/100/1000Mbps LAN Network Adapter for Macbook Ultrabook, Windows 10/ 8.1 / 8/7 / Vista / XP etc. - Black](https://www.amazon.de/-/en/Syncwire-RJ45-Gigabit-Ethernet-Adapter/dp/B074CDL78M/ref=sr_1_3?crid=29XR3J1HRVEYO&dchild=1&keywords=netzwerkadapter+pc&qid=1635346912&sprefix=network+ad%2Caps%2C158&sr=8-3)  - 16 euro  [Syncwire USB 3.0 to RJ45 Gigabit Ethernet Adapter - 10/100/1000Mbps LAN Network Adapter for Macbook Ultrabook, Windows 10/ 8.1 / 8/7 / Vista / XP etc. – Black](https://www.amazon.de/-/en/Syncwire-RJ45-Gigabit-Ethernet-Adapter/dp/B074CDL78M/ref=sr_1_3?crid=9Z0JW47YWLT2&dchild=1&keywords=netzwerkadapter+pc&qid=1635347083&sprefix=network+ada%2Caps%2C149&sr=8-3) – 16 euro |
| **Bundled Software**  (Including Operating System) | [Windows 11 Home, English, Dutch, French, German, Italian](https://www.amazon.com/OEM-Windows-Home-64-Bit-1-Pack/dp/B00ZSI7Y3U/ref=ex_alt_wg_d?_encoding=UTF8&pd_rd_i=B00ZSI7Y3U&psc=1&pd_rd_w=9zNrp&pf_rd_p=4e1b46a8-daf9-4433-b97e-d6df97cf3699&pf_rd_r=0YQZY84H8MC77VAGDS5B&pd_rd_r=48d149a2-0222-49ab-aa4e-f6ae240e5478&pd_rd_wg=Vd4Hz) – 130 euro | [Windows 11 Home, English, Dutch, French, German, Italian](https://www.amazon.com/OEM-Windows-Home-64-Bit-1-Pack/dp/B00ZSI7Y3U/ref=ex_alt_wg_d?_encoding=UTF8&pd_rd_i=B00ZSI7Y3U&psc=1&pd_rd_w=9zNrp&pf_rd_p=4e1b46a8-daf9-4433-b97e-d6df97cf3699&pf_rd_r=0YQZY84H8MC77VAGDS5B&pd_rd_r=48d149a2-0222-49ab-aa4e-f6ae240e5478&pd_rd_wg=Vd4Hz) – 130 euro |
| **Total Cost** | 2028 euro | 791 euro |

**Part C**

**Objective**

You have been asked by a family friend to assist them with a computer purchase. They’re unfamiliar with technology and the terms used and have presented you with two alternatives machine choices. They would like to be able to write word documents, surf internet and play Minecraft © Mojang and Half-Life © Valve Software. They are considering playing Fortnight but are not sure yet, as it depends on machine cost and if they can extract some money from their Bitcoin wallet.

Compare Personal Computer Option A and B in relation to each of the side headings and recommend a system and any alterations.

|  |  |  |
| --- | --- | --- |
|  | Personal Computer  Option A | Personal Computer  Option B |
| CPU | 2.2 GHz Intel Celeron 450 | 3.2 GHz Intel Core i5 |
| Memory |  |  |
| |  | | --- | | Cache | | RAM | | Hard Drive | | CD-ROM/DVD | | |  | | --- | | 512 KB Cache | | 4 GB RAM | | 320 GB Hard Drive | | DVD+/-RW drive | | |  | | --- | | 4 MB Cache | | 8 GB RAM | | 1 TB Hard Drive | | DVD+/-RW drive | |
| Input/Output |  |  |
| |  | | --- | | Keyboard | | Pointing Device | | Screen | | Speakers | | Network Adapter | | |  | | --- | | USB multifunction keyboard | | USB optical mouse | | 20’’ HD flatscreen monitor | | Multimedia Speaker System | | Integrated 10/100/1000 Ethernet | | |  | | --- | | wireless multifunction keyboard | | wireless optical mouse | | 25’’ HD flatscreen monitor | | Dolby Surround Sound Speakers | | Integrated 10/100/1000 Ethernet | |

|  |
| --- |
| **Recommendations** |
| Upgrade your CPU to an intel i3 at least to play Minecraft  Get a RAM memory size of 8 GB to play both Minecraft and Half-Life  Increase your RAM size to 16 GB if you want to play fortnite  When writing word documents, increase your hard drive to 500 GB and use a ssd instead  ------  PC A  Bad CPU – could use i5 instead  Bad RAM – increase to at least 8 GB  Okay Hard drive – switch to SSD and 500 GB  PC B  Wireless keyboard – Unneeded, use usb keyboard instead for low latency  Wireless mouse – Unneeded, use usb mouse instead for low latency |

**Your Recommend System**

|  |  |
| --- | --- |
|  | Personal Computer  Recommendation |
| **CPU** | [4.3 GHz Intel i5](https://www.amazon.com/Intel-i5-10400F-Desktop-Processor-Graphics/dp/B086MHSTWN/ref=sr_1_2?dchild=1&keywords=intel+i5&qid=1635347721&sr=8-2) |
| **Memory** | |
| |  | | --- | |  | | RAM | | Hard Drive | | SSD Drive | | |  | | --- | | [16 GB Ram](https://www.amazon.de/-/en/Corsair-Vengeance-Performance-Desktop-Memory/dp/B0143UM4TC/ref=sr_1_3?crid=1ZTWP6V7JPFNK&dchild=1&keywords=16%2Bgb%2Bddr4&qid=1635346549&sprefix=16%2Bgb%2B%2Caps%2C146&sr=8-3&th=1) | |  | | [1 TB Hard Drive](https://www.amazon.com/Seagate-Portable-External-Hard-Drive/dp/B07CRG7BBH/ref=sr_1_1_sspa?dchild=1&keywords=1tb+g&qid=1635347883&sr=8-1-spons&psc=1&spLa=ZW5jcnlwdGVkUXVhbGlmaWVyPUEyM1lDRUNNQ0cySklMJmVuY3J5cHRlZElkPUEwMDUxMDU3TlFCV0xWNVk2M1pYJmVuY3J5cHRlZEFkSWQ9QTAyNDEwMzQxTTRTWlNYUTNSNkkxJndpZGdldE5hbWU9c3BfYXRmJmFjdGlvbj1jbGlja1JlZGlyZWN0JmRvTm90TG9nQ2xpY2s9dHJ1ZQ==) | | [500 GB SSD](https://www.amazon.de/-/en/Crucial-MX500-CT500MX500SSD1-500GB-Internal/dp/B0786QNS9B/ref=sr_1_4?crid=1YQQ1GKBHZEM&dchild=1&keywords=SSD+500+GB&qid=1635346607&sprefix=ssd%2Caps%2C156&sr=8-4) | |
| **Input/Output** | |
| |  | | --- | | Keyboard | | Pointing Device | | Screen | | Speakers | | Network Adapter  GPU | | |  | | --- | | [USB Keyboard](https://www.amazon.de/-/en/Keyboard-Business-Windows-Android-Microsoft/dp/B07VK1P4C9/ref=sr_1_4?crid=1BFGCR7DDEN5L&dchild=1&keywords=keyboard+pc&qid=1635346687&sprefix=keyboard+%2Caps%2C169&sr=8-4)  [USB Mouse](https://www.amazon.de/Amazon-Basics-Wireless-Computer-Receiver/dp/B01NADN0Q1/ref=sr_1_7_sspa?dchild=1&keywords=Maus&qid=1635346749&sr=8-7-spons&psc=1&spLa=ZW5jcnlwdGVkUXVhbGlmaWVyPUEyWExITE1BVEZFUjNHJmVuY3J5cHRlZElkPUExMDQwMTA2MkJEU0FaVU9OWVlUViZlbmNyeXB0ZWRBZElkPUEwNzg3MDM1M1BNWEtEWDRCSVE1MSZ3aWRnZXROYW1lPXNwX210ZiZhY3Rpb249Y2xpY2tSZWRpcmVjdCZkb05vdExvZ0NsaWNrPXRydWU=)  [20'' 75Hz Monitor](https://www.amazon.com/Sceptre-Monitor-1600x900-Speakers-Metallic/dp/B078HMK7S3/ref=sr_1_6?dchild=1&keywords=monitor&qid=1635347972&sr=8-6&th=1) | | [Surround Sound Speakers](https://www.amazon.de/-/en/Logitech-speakers-subwoofer-surround-control/dp/B00EUUXBDE/ref=sr_1_3?crid=7GYR3RAU281C&dchild=1&keywords=boxen&qid=1635346868&sprefix=speaker%2Caps%2C159&sr=8-3&th=1) | | [USB Network Adapter](https://www.amazon.com/TP-Link-wireless-network-Adapter-SoftAP/dp/B008IFXQFU/ref=sr_1_4?crid=3RYQ6Y5IIBU24&dchild=1&keywords=network+adapter&qid=1635348256&sprefix=network+adapter%2Caps%2C238&sr=8-4)  [GT 1030 2GB](https://www.amazon.com/MAXSUN-GEFORCE-GT-1030-Graphics/dp/B08RD5VMNN/ref=sr_1_4?dchild=1&keywords=GPU&qid=1635348298&sr=8-4) | |  | |  | |

Hand up this practical report at the end of session and ensure it has been checked

|  |  |  |  |
| --- | --- | --- | --- |
| **Student Name** |  | **Student Number** |  |
| **Date** |  | **Checked** |  |
| **Group** | **A / B** |  |  |