DA1311 – Computing Fundamentals

Assignment 02



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Index No: 226083A

Assignment

Question 1:

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| **Specification** | **What each specification means..** | |
| Display | Outputs the information in visual form | |
| Processor (CPU) | Cores | If we have more than one core, we can divide one task into several parts and let each core work on one part of the task. Thus, having more cores means that we can speed up execution |
| Clock speed / CPU frequency | This indicates the number of cycles a CPU performs per second. The CPU can perform more quickly with a higher number of cycles. |
| Random Access Memory (RAM) | Provides the device with the memory it needs to run multiple applications at once | |
| Cache Memory | Data and instructions that are frequently requested are stored in cache memory so that the CPU can access them without delay when needed | |
| Operating System (OS) | The primary program (system software) that manages all of a computer's hardware and other software | |
| Battery | The source of electric power which allows us to use the device as long as it is charged | |
| Secondary Storage | This is where we store all our files such as videos, images and documents which are non-volatile | |

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| **Device Name** | **Display** | **Processor** | **RAM** | **Cache Memory** | **Operating System** | **Battery** | **Secondary Storage** | **As a mobile device..** |
| Apple iPad 10.2’’  (9th  generation) | Size: 10.2 inches  Resolution:  2160 × 1620 pixels | A13 Bionic chip  No of cores: 6 cores  Types of cores: 2x2.65 GHz Lightning cores + 4x1.8 GHz Thunder  Clock speed:  2.65 GHz | Size: 3GB  Type: LPDDR4X SDRAM | L1 128 KB + 128 KB    L2 8192 KB | iPad OS 15 | Li-Ion,  non-removable 8557 mAh (32.4 Wh) | Internal:  64 GB/ 256GB  Does not have an internal memory card slot | This device is lightweight and compact, which makes it easy to carry around and use for most of our tasks at any time.  Also, the A13 Bionic chip is made to be energy-efficient, which makes us do our tasks much more effectively. |
| Apple iPad Pro 11” (2022) | Size: 11 inches  Resolution:  2388 × 1668 pixels | Apple M2  No of cores: 8 cores  Types of cores:  Four high-performance "Avalanche" cores + four energy-efficient "Blizzard" cores  Clock speed:  3.50 GHz | Size: 8GB/ 16GB  Type: LPDDR4X | High performance cores:  L1 192 KB + 128 KB, L2 16 MB    Energy-efficient cores:  L1 128 KB + 64 KB | iPadOS 16.1 | Li-Po,  7538 mAh (28.65 Wh)  non-removable | Internal:  128 GB/ 256 GB/ 512 GB/ 1024 GB/ 2048 GB  Does not have an internal memory card slot | The Apple M2 processor is known as a faster processor which will allows us to run our programs much faster.  This device is designed light weight and slim so that we are able to use at any time anywhere.  The RAM is more than enough for essential tasks and also for gaming and for editing software. |
| Microsoft Surface Pro 9 | Size: 13 inches  Resolution:  2880 X 1920 pixels | 12th Gen Intel® Core™ i5-1235U processor/  12th Gen Intel® Core™ i7-1255U processor  No of cores: 10 cores  Clock speed:  4.40 GHz/ 4.70 GHz | Size: 8GB/ 16GB/ 32GB  Type: LPDDR5 RAM | L3 12MB | Windows 11 Home | Up to 15.5 hours of typical device usage  (47.7 Wh) | Internal:  128 GB/ 256 GB/ 512 GB/ 1TB  Type: SSD | A great device for those who require the portability of a tablet and the power of a laptop in a single device.  The long-lasting battery also enables you to work for longer periods of time without needing to recharge. |
| Samsung Galaxy Tab S8+ | Size: 12.4 inches  Resolution:  1752 × 2800 pixels | Qualcomm SM8450 snapdragon 8 Gen 1 (4nm)  No of cores: 8 cores  Types of cores:  1 × Cortex-X2 +  3 × Cortex-A710 +  4 × Cortex-A510  Clock speed:  1 × 3 GHz/  3 × 2.5 GHz/  4 × 1.8 GHz | Size:  8GB/  12 GB/ 16 GB | L2 1MB  L3 6MB | Android 12 | Li-Po, 10090 mAh,  non-removable  (37 Wh) | Internal:  128 GB/ 256 GB/ 512 GB/  Storage can be expanded up to 256 GB with the use of a micro SD card | This device is designed slim with an excellent display panel.  Multitasks better than other Android tablets.  Long lasting battery life which allows you to work on your projects for longer. |
| Apple iPad Mini 6 | Size: 8.3 inches  Resolution:  1488 × 2266 pixels | Apple A15 Bionic chip  No of cores: 6 cores  Types of cores:  2 performance cores + 4 efficiency cores  Clock speed:  2.93 GHz | Size: 4GB  Type:  LPDDR5 | L2 12MB  L2 4MB | iPadOS 16 | * Built-in 19.3-watt-hour rechargeable lithium-polymer battery | Internal:  64 GB/ 256 GB/  Does not have an internal memory card slot | This can be used for a variety of activities, including web browsing, reading e-books, watching movies, playing games, and using a selection of productivity apps using the strong A15 Bionic chip.  Compared to most smartphones, it has a larger screen, which is advantageous for tasks requiring additional screen space. |
| Amazon Fire HD 10 | Size: 10.1 inches  Resolution:  1920 × 1200 pixels | Mediatek MT8183 Helio P60T  No of cores: 8 cores  Clock speed:  2 GHz | Size:  3 GB | Detail is not available | Android 9 (Pie),  Fire OS 7 | Li-Ion,  non-removable,  12-hour battery | Internal:  32 GB/  64 GB  Storage can be expanded up to 1024 GB with the use of a micro SD card | Has a faster processor considering the price of the device.  The RAM is sufficient for day to day essential tasks |
| Samsung Galaxy Tab A8 | Size: 10.5 inches  Resolution:  1200 × 1920 pixels | Unisoc Tiger T618 (12nm)  No of cores: 8 cores  Clock speed:  2 GHz | Size:  2GB/  3GB/  4GB | L3 1 MB | Android 11 | Li-Po,  7040 mAh,  non-removable | Internal:  32 GB/  64 GB/  128 GB  Storage can be expanded up to 1024 GB with the use of a micro SDXC card | Has a solid performance thanks to the processor.  Wide display is great for video streaming  Furthermore, this device’s battery has a long battery life |

Question 2:

Before choosing a device, we have to consider about our organization’s requirements. Mainly, when we buy a device we consider the device’s performance.

Therefore, considering all the given devices I think that Samsung Galaxy Tab S8+ is more than enough for us to complete our day to day essential tasks.

Display : 12.4 inches with 1752 × 2800 resolution

Processor: Qualcomm SM8450 snapdragon 8 Gen 1 (4nm) with 8 cores. CPU frequency from 1.8 GHz up to 3 GHz

RAM: 8 GB/ 12 GB/ 16 GB

Battery: 10090 mAh

Secondary Storage : 128 GB/ 256 GB/ 512 GB 🡪 Expandable with the use of micro SD card

* Has a wider screen with higher resolution than most of the devices.
* The processor will allow us to execute our processes more quickly as it has the second-most cores comparatively and a higher CPU frequency.
* The RAM sizes are more than sufficient for most of our tasks.
* The battery of this device has a long battery life, which will allow us to use it for longer periods of time anywhere, anytime.
* The secondary storage with the option of a microSD card will allow us to save more of our documents, videos, images, etc. on the same device.

**References [Accessed all in May 2023]**

Device 1: Apple iPad 10.2’’ (9th generation)

<https://www.apple.com/ipad-10.2/>

<https://www.gsmarena.com/apple_ipad_10_2_(2021)-11106.php>

Device 2: Apple iPad Pro 11’’ (2022)

<https://support.apple.com/kb/SP882?locale=en_US>

<https://www.gsmarena.com/apple_ipad_pro_11_(2022)-11940.php>

<https://www.devicespecifications.com/en/model/c7075ae0>

Device 3: Microsoft Surface Pro 9

<https://www.microsoft.com/en-us/d/surface-pro-9/93vkd8np4fvk?activetab=pivot:fulltechspecstab#tab145ea0bb9-3f2d-4972-9c84-6ec8264c05eb>

<https://en.wikipedia.org/wiki/Surface_Pro_9>

<https://www.intel.com/content/www/us/en/products/details/processors/core.html>

<https://techmart.lk/microsoft-surface-pro-9-12th-gen-intel-core-i5-8gb-ram-128gb-ssd-in-sri-lanka.html>

Device 4: Samsung Galaxy Tab S8+

<https://www.samsung.com/levant/tablets/galaxy-tab-s/galaxy-tab-s8-plus-5g-graphite-128gb-sm-x806bzaamea/>

<https://www.gsmarena.com/samsung_galaxy_tab_s8+-11342.php>

<https://nanoreview.net/en/soc/qualcomm-snapdragon-8-gen-1>

Device 5: Apple iPad Mini 6

<https://www.apple.com/ipad-mini/specs/>

<https://www.devicespecifications.com/en/model/0754574e>

<https://www.gsmarena.com/apple_ipad_mini_(2021)-11105.php>

Device 6: Amazon Fire HD 10

<https://www.amazon.com/Fire-HD-10-tablet/dp/B08BX7FV5L>

<https://www.gsmarena.com/amazon_fire_hd_10_(2021)-10881.php>

Device 7: Samsung Galaxy Tab A8

<https://www.samsung.com/us/tablets/tab-a8/compare/?device-1=galaxy-tab-a8&device-2=galaxy-tab-s8%2B&device-3=undefined>

<https://www.gsmarena.com/samsung_galaxy_tab_a8_10_5_(2021)-11265.php>