|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| UNIVERSITAS SEBELAS MARET | | | Kode MK | : | 0955122001 |
| Fakultas | : | MIPA | Mata Kuliah | : | Praktikum Pengantar TI |
| Program Studi | : | D3 Teknik Informatika | Tahun Ajaran | : | 2019 / 2020 |
|  |  |  | Semester | : | Ganjil / 1 |
|  |  |  | Dosen | : | Taufiqurrakhman NH, S.Kom., M.Cs. |
|  |  |  |  |  |  |
|  |  |  | Metode PBM | : | Tugas Praktikum |
|  |  |  | Kelompok / Individu | : | Kelompok |

|  |  |  |
| --- | --- | --- |
| Judul Tugas | : | **Tugas Teori Pengantar TI ke 2 - Kelompok – PC ASSEMBLY** |
|  |  |  |
| Kelas | : | D |
| No Kelompok | : | 4 |

|  |  |  |  |
| --- | --- | --- | --- |
| NO | NIM | NAMA | NILAI |
| 1. | M3119073 | Raihan Aditya Putra |  |
| 2. | M3119083 | Surya Bintara |  |
| 3. | M3119084 | Syadza Tsuraya Eden |  |
| 4. | M3119086 | Willy Indrayana Komara |  |
| 5. | M3119087 | Windhi Nur Safitri |  |

# TUGAS PRAKTIKUM PENGANTAR TI KE – 3 PC ASSEMBLY

* Buat spesifikasi komputer rakitan dengan dana **maksimal 8 juta rupiah** (Termasuk monitor, keyboard dan mouse. Printer, speaker dan aksesoris-aksesoris komputer yang lain tidak dimasukkan)
* Pastikan spesifikasi komputer kelompok anda mempunyai **kompatibilitas dan keseimbangan semaksimal mungkin dalam berbagai halnya**
* Berikan **penjelasan setiap komponennya dan keterangan berdasar dari toko mana harga komponen** tersebut (komponen-komponen boleh dari toko yang berbeda-beda)
* Buat argumen mengenai kompatibilitas dan keseimbangan spesifikasi komputer kelompok anda

* Spesifikasi komputer rakitan **antar kelompok baik dari kelas yang sama maupun yang berbeda**, seharusnya **tidak mungkin sama**
* Setiap kelas boleh mengambil alokasi waktu praktikum kelas sebanyak 1 kali untuk mengerjakan tugas, dengan pemberitahuan kepada dosen yang bersangkutan paling lambat 1 hari sebelum praktikum dilaksanakan

* Tugas **dikerjakan pada template / form tugas ini** secara langsung
* **Dilarang copy paste edit hasil pekerjaan kelompok lain**, baik kelas yang sama maupun yang berbeda
* Apabila ada kesamaan, **tugas yang diterima adalah yang terlebih dahulu mengumpulkan** (berdasarkan tanggal & waktu pengumpulan di google classroom)

**CATATAN TAMBAHAN :**

* File-file tugas yang dikumpulkan

o form tugas (.docx); yang juga berisi sumber informasi, spesifikasi dan harga tiap komponen

* File diberi nama file dengan format **2019-2020-PC-ASSEMBLY-kelas- kelompok.docx**
* Format penulisan tidak boleh keliru, termasuk nama / nomer kelompok
* Pengurangan nilai diberikan apabila terdapat kesalahan format penulisan file tugas • File tugas dikumpulkan di google classroom

* Nama / nomer dan daftar anggota kelompok dapat dilihat pada file didalam salah satu topic di course
* Apabila ada ketidak samaan daftar dan atau anggota kelompok, dimohon untuk segera menghubungi dosen yang bersangkutan

* Batas waktu pengumpulan tugas ini dapat dilihat di google classroom
* Tanda tangan pada presensi sebagai bukti pengumpulan tugas dapat dilakukan secara langsung menghadap ke dosen atau dapat dilakukan pada waktu praktikum selanjutnya setelah pengumpulan

# LEMBAR JAWAB 1 PRAKTIKUM PENGANTAR TI KE – 2 PC ASSEMBLY

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **NO** | **KOMPONEN** | **NAMA KOMPONEN** | | **SUMBER** | **HARGA** |
| **GAMBAR KOMPONEN** | | **SPESIFIKASI KOMPONEN** | | |
|  | 1 | | | | |
| **1.** | Motherboard | **GIGABYTE B365 M Aorus Elite Motherboard** | |  | **Rp 1.675.000**  **(Sumber :Bhinneka.com)** |
|  | | **Prosesor**   * Support for 9th and 8th Generation Intel® Core™ i9 processors/Intel® Core™ i7 processors/Intel® Core™ i5 processors/Intel® Core™ i3 processors/Intel® Pentium® processors/Intel® Celeron® processors in the LGA1151 package * L3 cache varies with CPU   **Chipset**   * Intel® B365 Express Chipset   **Memori**   * 4 x DDR4 DIMM sockets supporting up to 64 GB of system memory * Dual channel memory architecture * Support for DDR4 2666/2400/2133 MHz memory modules * Support for ECC Un-buffered DIMM 1Rx8/2Rx8 memory modules (operate in non-ECC mode) * Support for non-ECC Un-buffered DIMM 1Rx8/2Rx8/1Rx16 memory modules * Support for Extreme Memory Profile (XMP) memory modules * To support 2666 MHz or XMP memory, you must install a 9th or 8th Generation Intel® Core™ i9/i7/i5 processor.   **Kartu Grafis Terintegrasi**   * Integrated Graphics Processor-Intel® HD Graphics support: * 1 x DVI-D port, supporting a maximum resolution of 1920x1200@60 Hz * The DVI-D port does not support D-Sub connection by adapter. * 1 x DisplayPort, supporting a maximum resolution of 4096x2304@60 Hz * Support for DisplayPort 1.2 version, HDCP 2.2, and HDR. * 1 x HDMI port, supporting a maximum resolution of 4096x2160@30 Hz * Support for HDMI 1.4 version and HDCP 2.2. * Support for up to 3 displays at the same time * Maximum shared memory of 1 GB   **Audio**   * Realtek® ALC892 codec * High Definition Audio * 2/4/5.1/7.1-channel * Support for S/PDIF Out   **LAN**   * Intel® GbE LAN chip (10/100/1000 Mbit) * Slot Tambahan * 1 x PCI Express x16 slot, running at x16 (PCIEX16) * For optimum performance, if only one PCI Express graphics card is to be installed, be sure to install it in the PCIEX16 slot. * 1 x PCI Express x16 slot, running at x4 (PCIEX4) * 1 x PCI Express x1 slot * (All of the PCI Express slots conform to PCI Express 3.0 standard.) * 1 x M.2 Socket 1 connector for the wireless communication module (M2\_WIFI)   **Teknologi Multi Grafis**   * Support for AMD Quad-GPU CrossFire™ and 2-Way AMD CrossFire™ technologies   **Antarmuka Penyimpanan**   * Chipset: * 1 x M.2 connector (Socket 3, M key, type 2242/2260/2280/22110 PCIe x4/x2 SSD support) (M2Q) * 1 x M.2 connector (Socket 3, M key, type 2242/2260/2280 SATA and PCIe x4/x2 SSD support) (M2A) * 6 x SATA 6Gb/s connectors * Support for RAID 0, RAID 1, RAID 5, and RAID 10 * Refer to "1-7 Internal Connectors," for the installation notices for the M.2 and SATA connectors. * Intel® Optane™ Memory Ready   **USB**   * Chipset: * 1 x USB Type-C™ port on the back panel, with USB 3.1 Gen 1 support * 5 x USB 3.1 Gen 1 ports (3 ports on the back panel, 2 ports available through the internal USB header) * 6 x USB 2.0/1.1 ports (2 ports on the back panel, 4 ports available through the internal USB headers)   **Konektor I/O Internal**   * 1 x 24-pin ATX main power connector * 1 x 8-pin ATX 12V power connector * 1 x CPU fan header * 3 x system fan headers * 2 x addressable LED strip headers * 2 x addressable LED strip power select jumpers * 2 x RGB LED strip headers * 6 x SATA 6Gb/s connectors * 2 x M.2 Socket 3 connectors * 1 x front panel header * 1 x front panel audio header * 1 x S/PDIF Out header * 1 x USB 3.1 Gen 1 header * 2 x USB 2.0/1.1 headers * 1 x Trusted Platform Module (TPM) header (2x6 pin, for the GC-TPM2.0\_S module only) * 1 x serial port header * 1 x Clear CMOS jumper   **Konektor Panel Belakang**   * 1 x PS/2 keyboard/mouse port * 1 x DVI-D port * 1 x DisplayPort * 1 x HDMI port * 1 x USB Type-C™ port, with USB 3.1 Gen 1 support * 3 x USB 3.1 Gen 1 ports * 2 x USB 2.0/1.1 ports * 1 x RJ-45 port * 6 x audio jacks   **Pengontrol I/O**   * iTE® I/O Controller Chip   **Pengawasan Hardware**   * Voltage detection * Temperature detection * Fan speed detection * Overheating warning * Fan fail warning * Fan speed control   \* Whether the fan speed control function is supported will depend on the cooler you install.  **BIOS**   * 2 x 128 Mbit flash * Use of licensed AMI UEFI BIOS * Support for DualBIOS™ * PnP 1.0a, DMI 2.7, WfM 2.0, SM BIOS 2.7, ACPI 5.0   **Fitur Unik**   * Support for APP Center   \* Available applications in APP Center may vary by motherboard model. Supported functions of each application may also vary depending on motherboard specifications.   * 3D OSD * @BIOS * AutoGreen * Cloud Station * EasyTune * Easy RAID * Fast Boot * Game Boost * ON/OFF Charge * Platform Power Management * RGB Fusion * Smart Backup * Smart Keyboard * Smart TimeLock * Smart HUD * Smart Survey * System Information Viewer * USB Blocker * Support for Q-Flash * Support for Xpress Install   **Paket Sofware**   * Norton® Internet Security (OEM version) * cFosSpeed   **Sistem Operasi**   * Support for Windows 10 64-bit   **Form Factor**   * Micro ATX Form Factor; 24.4cm x 24.4cmForm Factor : M-ATX | | |
|  |  | |  | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 2. | Processor | **Intel Core i3 9100F 9th Gen Coffeelake-S 4 Cores up to 4.2 GHz Turbo** |  | | **Rp 1.200.000 (Sumber : tokopedia.com)** |
|  | | Product Collection : 9th Generation Intel Core i3 Processors  Code Name : Products formerly Coffee Lake  Vertical Segment : Desktop  Processor Number : i3-9100F  Lithography : 14 nm  Performance :  # of Cores : 4  # of Threads : 4  Processor Base Frequency : 3.60 GHz  Max Turbo Frequency : 4.20 GHz  Cache : 6 MB SmartCache  Bus Speed : 8 GT/s DMI3  TDP : 65 W  Memory Specifications :  Max Memory Size (dependent on memory type) : 64 GB  Memory Types : DDR4-2400  Max # of Memory Channels : 2  Max Memory Bandwidth : 37.5 GB/s  ECC Memory Supported : Yes | | |
| 3. | **Random Access Memories** | **TEAM Elite + Memory PC 8GB DDR4 PC4-19200** | |  | **Rp. 890.000 (Sumber : Bhinneka.com)** |
|  | | * 8GB DDR4 * 2400 MHz * PC4-19200 * Chipset Samsung * Red heatspreader | |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 5. | VGA | ASRock - Phantom Gaming D Radeon RX570 4G | |  | Rp.1.780.000,00  (Sumber: nanokomputer.com) |
|  | | Graphics Engine  - AMD Radeon RX 570  Bus Standard  - PCI Express x16 Gen3  DirectX  - 12  OpenGL  - OpenGL 4.5  Memory  - GDDR5 4GB  Engine Clock  - 1244 MHz  Stream Processors  - 2048  Memory Clock  - 7000 MHz  Memory Bus  - 256-bit  Resolution  - Digital Max Resolution: 8K (7680 x 4320)  Interface  - 1 x Dual-link DVI-D  - 1 x HDMI 2.0  - 3 x DisplayPort 1.4  HDCP  - Yes  Multi-view  - 5  Recommended PSU  - 500W  Power Connector  - 1 x 6-pin  Accessories  - 1 x Support CD  - 1 x Quick Installation Guide  Dimensions  - 236.2 x 127.5 x 41.91 mm | |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 6. | | **Hardisk** | | HGST Travelstar 500GB 1W10013 | | | | | | |  | | Rp 572.000 (Sumber : Bhinneka.com) | |
|  | | | | | | Second generation 7mm z-height design  Up to 500GB of capacity on a single disk  Advanced Format, industry standard 4K sector size  512-byte emulation  Low power consumption  Industry-standard SATA 6Gb/s interface  Halogen-free for eco-friendly design  Self-encrypting models for data security  Enhanced-availability (EA) models for applications needing around-the-clock access in lower-transaction environments | | | | |  | |
| 6. | | **SSD** | | HIKVISION SSD 128GB SATA 2.5 Inch | | | | | | |  | | Rp 295.000 (Sumber : Bhinneka.com) | |
|  | | | | | | SSD (Solid State Drive) - Penyimpanan tanpa komponen mekanis Kapasitas Penyimpanan : 128GB Kecepatan Tulis : 480 MB/s Kecepatan Baca : 560 MB/s Interface : SATA 6Gb/s Form Factor : 2.5 inch Nand Flash : 3D TLC Garansi : 3 Years (Local Official Distributor Warranty) NAND FLASH : 3D TLC MTBF : 1,000,000 hours | | | | |  | |
| 7. | **CASING** | | | | | Simbadda Sim-V 3128 Non PSU | | | | | |  | Rp. 150.000 (Sumber : elektronik123.com) | |
|  | | | | | | | | Casing komputer Merk simbada Seri Sim-V Non Power supply | | | |  | |
| 8. | | | Power Supply | | **Digital Alliance Power Supply Gaming 500W 80+ Bronze** | | | | |  | | | | Rp 490.000 (Sumber : Bhinneka.com) |
|  | | | | **AC INPUT**  Model ATX 500W 80+ Bronze  Voltage 220V  Current 5A  Frequency 50Hz  **DC OUTPUT**  Yellow +12V (20A)  Red +5V (20A)  Orange +3.3V (20A)  Blue -12V (0.5A)  Purple +5Vsb (2.0A)  **POWER CONNECTOR**  Main Power (24 pin) 1  ATX 12V (4+4 pin) 1  PCI-E (6+2 pin) 1  Sata (4 pin) 4  Peripheral (4 pin) 2 | | | | | | | |
| 9. | | | Monitor | | Nathans Wide 15.6 | | | | |  | | | | Rp. Rp 648.000 (Sumber : Pricebook.co.id) |
|  | | | | * 15.6 Inch Wide LED Monitor * Resolution : 1368 x 768 * Response Time : 11 ms * Brightness : 220 cd/m2 * Input Connector : VGA * Horizontal View : 90 degrees | | | | | | | |
| 10. | | | Keyboard + Mouse | | REXUS Gaming Mouse and Keyboard Warfaction VR2 | | | | |  | | | | Rp. 193.000,00 (Sumber : Bhinneka.com) |
|  | | | | * Gaming keyboard & mouse * 2.4Ghz Wireless * Menjangkau hingga 10 meter tanpa sambungan kabel * Tombol spasi super sangat sesuai untuk gaming | | | | | | | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  | |  |
|  | **Total Harga :** | | **Rp. 7.893.000,00** | |
|  | **Budget :** | | **Rp 8.000.000** | |
|  | **Sisa :** | | Rp 107.000,00 | |

# LEMBAR JAWAB 2 PRAKTIKUM PENGANTAR TI KE – 2 PC ASSEMBLY

|  |  |
| --- | --- |
| Argumen mengenai kompatibilitas dan keseimbangan spesifikasi komputer kelompok anda : | |
| 1. | Komponen Motherboard kompatibel dengan prosesor, vga, dan komponen lain. |
| 2. | Diprediksi tidak akan ada masalah karena semua komponen internal mendukung |
| 3. | Frekuensi dan konfigurasi RAM sesuai dengan spesifikasi Prosesor dan Motherboard yang digunakan. |
| 4. | Storage yang digunakan dapat sepenuhnya bekerja dengan baik diakrenakan kompatibel dengan motherboard yang bisa mendukung hingga 6 koneksi SATA |
| 5. | Telah diuji dengan <https://pc-builds.com/calculator/> tingkat bottleneck hanya 1,16%Di |
| 6. | Telah diuji dengan [https://pcpartpicker.com](https://pcpartpicker.com/) dan tidak menunjukan isu kompabilitas yang berarti. Pada input device yang dilakukan tidak semua perangkat tersedia pada katalog pcpartpicker.com terutama perangkat lokal yang belum terkenal, sehingga menginputkan perangkat lain yang serupa spesifikasi nya untuk diujikan. |
|  | |

# LAMPIRAN PRAKTIKUM PENGANTAR TI KE – 2 PC ASSEMBLY

|  |  |
| --- | --- |
| Sumber-sumber informasi ( screenshot halaman web / foto brosur / dll ) : | |
| 1. |  |
| 2. |  |
| 3. |  |

|  |  |
| --- | --- |
| 4. |  |
| 5. |  |

|  |  |
| --- | --- |
| 6. |  |

|  |  |
| --- | --- |
| 7. |  |

|  |  |
| --- | --- |
| 8. |  |

|  |  |
| --- | --- |
| 9. |  |

|  |  |
| --- | --- |
| 10. |  |