

Computer assembly

1. Final task assignment

NAME : _____

POSTE : _____

MODULE 1

1 - Prepare to disassemble a computer.

You will disassemble a computer following safe procedures and using appropriate tools. Be extremely careful and follow all safety procedures.

Recommended tools

Flathead screwdrivers	Thermal paste
Phillips screwdrivers	Cable ties
Torx screwdriver	Table for storing computer parts
Cutting pliers	Cloth

Step 1: Turn off the computer.

Step 2: Open the computer case.

2 & 3 - Remove the components and answer questions about components.

Step 1: Remove the HDD hard disk.

Note the capacity in GB and the data transfer standard? _____

Step 2: Remove the SSD hard disk.

Note the capacity in GB and the data transfer standard? _____

Step 3: Remove the memory module.

Note the type of RAM installed on the motherboard? _____

Step 4: Remove the graphics card.

Indicate the 3 video output ports? _____

Step 5: Remove the power supply.

Note the power rating and tree secondary voltages? _____

Step 6: Remove the CPU + FAN assembly.

Step 7: Remove the motherboard.

Indicate the expansion ports? _____

4 - Remove the front panel and internal cables.

5 - Clean, store and finalize.

6 & 7 - Assemble internal components and answer questions about components.

Step 1: Install the old SSD hard drive.

Step 2: Install the new SSD hard drive.

Note the capacity in GB ? _____

Step 3: Install the 2 memory modules.

Note the name of the manufacturer and the total value of the installed RAMs?

Step 4: Install the CPU + FAN.

Step 5: Install the motherboard.

Step 6: Install the graphics card.

Indicate the dedicated memory? _____

Step 7: Install the network card.

Indicate the theoretical flow? _____

Step 8: Install the power supply.

8 - Install the front panel and connect the internal cables.

9 - Connect the external cables.

10 - Check the POST.

MODULE 2

Resource Requirements

- A computer with a blank unpartitioned NVMe M.2 SSD hard drive
- Windows 10 on USB drive
- UBUNTU 22 on USB drive
- VirtualBox on USB drive
- 2 monitors
- A switch
- A printer
- A NAS server (192.168.1.250)
- A Web server (192.168.1.250)

11 - Start the installation with the USB drive.

12 - Install Windows 10 in English language.

Step 1: configure initial settings.

Select Windows10 Professional to continue the installation.

Step 2: collect information.

Do not enter the product key in the Enter Product Key window to activate Windows.

Read the License Agreement and confirm **I accept the terms of the license agreement.**

Choose to install Windows only (advanced).

To install Windows, **choose the total capacity of the SSD.**

Step 3: basic setup.

Check the region and select **Yes.**

Check the keyboard layout and click **Yes.**

Click Ignore if you do not add a second keyboard layout.

Step 4: configure the network.

Select **Configure for personal use.**

Step 5: Set up the Administrator account.

Set up a local account to access the computer. Do not create a Microsoft account.

Enter the **METZ-X** user name.

Create the password **Abilympics2023** and confirm the password when prompted.

Answer all security questions with AZER or QWER and click **Next** to continue.

Step 6: configure services.

Do not allow the use of Cortana and select the privacy settings.

Click on **No or Limited** for the different services proposed next.

Step 7: finalize the installation.

The Desktop appears and you are connected to Windows for the first time.

Step 8: Partition the SATA SSD drive.

Create two partitions about 50% of the total capacity of the SSD.

Rename the partitions : Personal and Shared.

13 - Install the drivers and software.

Install the drivers of mother card and LibreOffice from the USB drive.

14 - Configure the network A.

Step 1: configure your network card.

Configure your card in static mode.

IP address: 192.168.1.X / 24

Step 2: Access the web server : 192.168.1.250:7000

Access the web server and note the messages on the site page.

Step 3: Access the NAS server with Users account, mdp : Assembly2023!

Go to the Printer folder. Download the drivers for Windows.

Go to the Graphics card folder. Download the drivers.

Step 4: Install the printer and the Graphics card drivers.

Step 5: Print a test page.

Indicate on the test page: NAME, First name, Country, Station X and the messages of the site page.

15 - Prepare the computer for virtualization.

Step 1: start the installation with the USB drive.

Step 2: install VirtualBox.

Download, run VirtualBox and accept the default installation settings.

Also install the VirtualBox plug-in.

Step 3: create a virtual computer.

Download an Ubuntu Linux image. Click on **Oracle VM VirtualBox**.

Increase the **RAM to 8GB**, use **2 cores** and **40GB** of storage.

Use the default settings for all subsequent steps.

16 - Install Ubuntu on a virtual computer in English language.

Step 1: mount the image.

Step 2: install the operating system.

You are not connected to the Internet, you will continue the configuration and activation of the network later. Select **Erase disk and install Ubuntu**.

Use **METZ2023-X** in the **Your Name** field and **Abilympics2023** as the password.

Once the installation is complete, the desktop appears and you are connected to Ubuntu for the first time.

17 - Configure the network A.

Step 1: configure your network card.

Configure your card in static mode and in "Access by bridge" mode.

IP address: 192.168.1.X / 24

Step 2: Go to the NAS server.

Go to the Printer folder. Download the printer drivers for Linux.

Step 3: Install a printer.

Install the printer drivers.

Step 4: Print a test page.

Indicate on the test page: NAME, First name, Country, station X.

18 - Configure the screens.

Configure screen 1 for Windows in Full HD.

Configure screen 2 for Ubuntu in Full HD.

2. Allocated time: 4 hours

The contest duration is 4 hours.

Module 1: 1 hour 30 minutes.

Module 2: 2 hours 30 minutes.

3. Requirements

- ✓ All computers will be provided with an AZERTY keyboard. However, before the beginning of the contest, the contestants will be able to install their own keyboard.
- ✓ At the beginning of each task, the jury will collect all communication devices (smartphone, connected watch, digital tablet...) which will be restituted at the end of each task.
- ✓ Any contestant caught cheating, talking to someone from the public or using communication device will suffer a penalty of 5 points for the first transgression. A second transgression will lead to an exclusion from the contest.
- ✓ Contestants must respect safety requirements. Any incident will be immediately notified.
- ✓ Contestants will notify the jury upon finishing the task.

4. Procedure

Day - 1 (March 23rd): On the day before the competition, contestants will be welcomed by members of the jury. A briefing about the organization of the competition and the safety rules will be arranged. Contestants will draw lots to be assigned to a work station. Due to the large number of registered candidates, the event will be organized in 2 groups. Contestants from the same delegation must compete in the same group. A schedule will be given to each candidate to precisely indicate their intervention times.

The group that is not in competition will have to register to go on an organized trip.

Composition of the groups

Group 1, 7 contestants	Group 2, 7 contestants
Azerbaijan	Finland
Azerbaijan	Finland
Japan	Kazakhstan
Malaysia	Kazakhstan
France	Nigeria
France	Ecuador
Chinese Taipei	Korea

Day 1 (March 24th): Group n°1 will have 4 hours to complete modules.

Day 2 (March 25th): Group n°2 will have 4 hours to complete modules.

5. Scoring criteria

N°	Items to be evaluated	O/S	Scoring scale
Module 1			50
01	Prepare for disassembly <i>Préparer le démontage</i>	O	1
02	Remove the components <i>Retirer les composants</i>	O	14
03	Answer questions about components <i>Réponses aux questions sur les composants (-0,5 points par réponse fausse)</i>	P	3
04	Remove internal cables and screws <i>Retirer les câbles internes et vis</i>	O	2
05	Clean, store and finalize <i>Nettoyer, ranger et finaliser</i>	S	5
06	Assemble the internal components <i>Assembler les composants internes</i>	O	16
07	Answer questions about components <i>Réponses aux questions sur les composants (-0,5 points par réponse fausse)</i>	P	2
08	Connect and attach internal cables <i>Raccorder et attacher les câbles internes</i>	O	4
09	Connect external cables <i>Raccorder les câbles externes</i>	O	2
10	Check the POST <i>Vérifier le POST</i>	O	1
Module 2			50
11	Start the installation with the USB drive <i>Lancer l'installation avec la clé USB</i>	O	3
12	Installation of the Operating System 1 <i>Installation des systèmes d'exploitation 1</i>	O	8
13	Installation of the drivers <i>Installation des pilotes</i>	O	4
14	Configuration of the network 1 <i>Configuration du réseau 1</i>	O	8
15	Install virtualisation software <i>Installer logiciel virtualisation</i>	O	8
16	Installation of the Operating System 2 <i>Installation des systèmes d'exploitation 2</i>	O	5
17	Configure Network 2 <i>Configurer Réseau 2</i>	O	10
18	Configuration of the screens <i>Configuration les écrans</i>	O	4
TOTAL POINTS			100