A)SAFETY MEASURES FOR COMPUTER HARDWARE INSTALLATION.

A) Wear proper apparel.
B) Unplug all computer equipment and peripherals before opening any covering cases.
C) Keep your work area clean and well lit.
D) Check for damaged parts.
E) Do not force components into computer ports.
F) Use an anti-static wrist strap or discharge yourself by touching a grounded metal object such as a computer casing.
G) Replace all cases or coverings after inspections or installations.
H) Check all circuits and installations with the instructor before power is applied.
I) Retain all screws during disassembly in containers such as film canisters for proper reassembly.
J) Electronic components should never become hot. Hot components means that there is a problem with the circuit. Disconnect any power immediately.

The most important safety rule of all: **Always Be Careful! (ABC)**

B)INTRODUCTION OF COMPUTER HARDWARE.

1.The Motherboard

What it is: All components of a computer communicate through a circuit board called the motherboard.

What it does: Think of the motherboard as the glue that holds everything else together.

2. The Central Processing Unit (CPU)

What it is: The CPU is often called the "brain" of a computer, thanks to its direct plug connection to the motherboard, and communication with all of the computer's other components.

What it does: Whenever you write a line of code (in Python, Java, C++, or any other programming language), it's broken down into assembly language—which is a language that the processor can understand. It fetches, decodes, and executes these instructions.

3. The Graphics Proccess Unit

What it is: these graphic cards make it possible for computers to generate high-end visuals like those found in the many different types of video games.

What it does: Graphics cards often communicate directly with the display monitor, means if the GPU is high so the display in monitor is also high generate visuals.

4. Random Access Memory (RAM)

What it is: RAM, also known as volatile memory, stores data regarding frequently accessed programs and processes. (It's called volatile memory because it gets erased every time the computer restarts.)

What it does: RAM helps programs and games start up and close quickly.

5.Storage

What it is: All computers need somewhere to store their data. Modern computers either use a Hard Disk Drive (HDD) or Solid State Drive (SSD).

What it does: HDD are made of an actual disk onto which data is stored. The disk is read by a mechanical arm.

SSD have no moving parts and are faster than a hard disk drive (HDD), because no time is spent waiting for a mechanical arm to find data on a physical location on the disk.

BRAND COMPUTER THAT AVAILABLE IN THE MARKETPLACE

1.Lenovo

It is one of the most trusted and **best pc** brands in the global arena.

2. HP Corporation

HP is reliable brands in the computer industry because of new features, latest designs, and ground-breaking technology.

3. Dell Corporation

Dell it self ranks at first position in terms of technology and transporter of PC monitors across the globe.

4. Apple Corporation

One of the best pc brands in recent times is Apple. The company reach “Most Valuable Brand in World” award several times.

5. **Acer Corporation**

Acer is known as the best computer brand as it pays special emphasis on quality, durability, reliability, and value to its customers.

C)STEP BY STEP INSTRUCTION ON COMPUTER HARDWARE SET UP

STEP 1; PROCURING PART

First you will need the hardware parts of computer such as motherboard, CPU, computer casing and others.

STEP 2; GATHER TOOLS AND SUPPLIES

the tools you will need is screwdriver, wirecutter, grounding strap and others.

STEP 3; OPEN THE CASE

Open the computer case by removing the side panels. If the panel is removed sliding it back then lifting it away from the case.

STEP 4; INSTALL MOTHERBOARD

Follow these steps to install the motherboard in the case:

1. Install the I/O bezel plate into the opening in the back of the case. It pushes in from the inside.
2. Install standoffs in the case. The standoffs screw into the motherboard mounting holes. Check the screw hole locations on the motherboard for exact placement.
3. Lower the motherboard into the case and align with the I/O bezel.

STEP 5; INSTALL HARD DISK DRIVE OR SOLID STATE DRIVE

To mount the drive:

1. Find a 3.5" drive bay to install the drive in.
2. Slide the drive into place until the screw holes on the sides are lined up with the holes in the case.

STEP 6; INSTALL OPTICAL DRIVE

To install the drive:

1. Slide the drive into the drive bay until the screw holes are lined up and the front of the drive is flush with the front of the case. Make sure that it is orientated correctly.

STEP 7; INSTALL THE CPU

It is installed on the corner of the motherboard. To install the CPU:

1. Find the corner marking that designates pin 1 of the CPU. On this AMD brand processor, the corner is marked with an arrow. Consult the manufacturer's documentation for specific information about your processor.
2. Find the corresponding marking on the CPU socket and insert the CPU so that the markings are lined up.
3. Push the rod down to lock the processor in place.

STEP 8; INSTALL RANDOM ACCESS MEMORY (RAM)

1. Set the RAM board in the socket. Check to see that the notch in the board is in the correct location. If it is not, turn it around 180º.
2. Press firmly on both ends of the board to set it into the socket. Make sure the tabs lock into place.

STEP 9; INSTALL THE CPU FAN

To install the fan:

1. Place thermal compound to the CPU following the instructions provided with the compound.
2. Set the fan assembly on the CPU with mounting tabs aligned.
3. Pull the locking rod down on the fan assembly to lock into place.
4. Connect the fan assembly's power connector to the motherboard. Consult the manual to determine proper placement.

STEP 10; INSTALL CASE FAN

To install the case fan:

1. Align the mounting holes by holding the fan to the mounting pad on the inside of the case. The fan needs to be mounted so that it blows air out of the case.

STEP 11; INSTALL POWER SUPPLY

1. Align the mounting holes in the case and power supply.

STEP 12; CONNECT CABLES

- Every device that has been installed needs power. The motherboard has two power connections, and there are two connectors specifically for SATA devices. The other connectors will run fans and other non-SATA devices.
- Data cables connect drives and front panel devices to the motherboard. Please consult the motherboard documentation for the exact placement of connectors.

STEP 13; WRAP UP

Now that the components are completely installed, the last thing to do is to reinstall the side panels on the case. The computer is now ready to be turned on and to have software loaded on it.

STEP 14; TESTING

After building a computer system, it needs to be tested. The most basic test is to switch the system on to check it starts without errors. The other tests will be the ones you selected when planning the hardware installation

D)INTRODUCTION OF WINDOWS 10 OPERATING SYSTEM

Hardware requirements for Windows 10[176][305]

Component	Minimum	Recommended
Processor	1 GHz clock rate IA-32 or x86-64 architecture with support for PAE, NX and SSE2 x86-64 CPUs must also support CMPXCHG16B, PrefetchW and LAHF/SAHF instructions.	
Memory (RAM)	**IA-32 edition:** 1 GB **x86-64 edition:** 2 GB	4 GB
Graphics card	DirectX 9 graphics device WDDM 1.0 or higher driver	WDDM 1.3 or higher driver
Display	800×600 pixels	N/A
Input device	Keyboard and mouse	Multi-touch display
Storage space	32 GB	N/A

Additional requirements for optional functionality[176]

Feature	Requirements
Device encryption	Trusted Platform Module (TPM) 2.0 and InstantGo

E)STEP BY STEP EXPLANATION ON WINDOWS 10 INSTALLATION

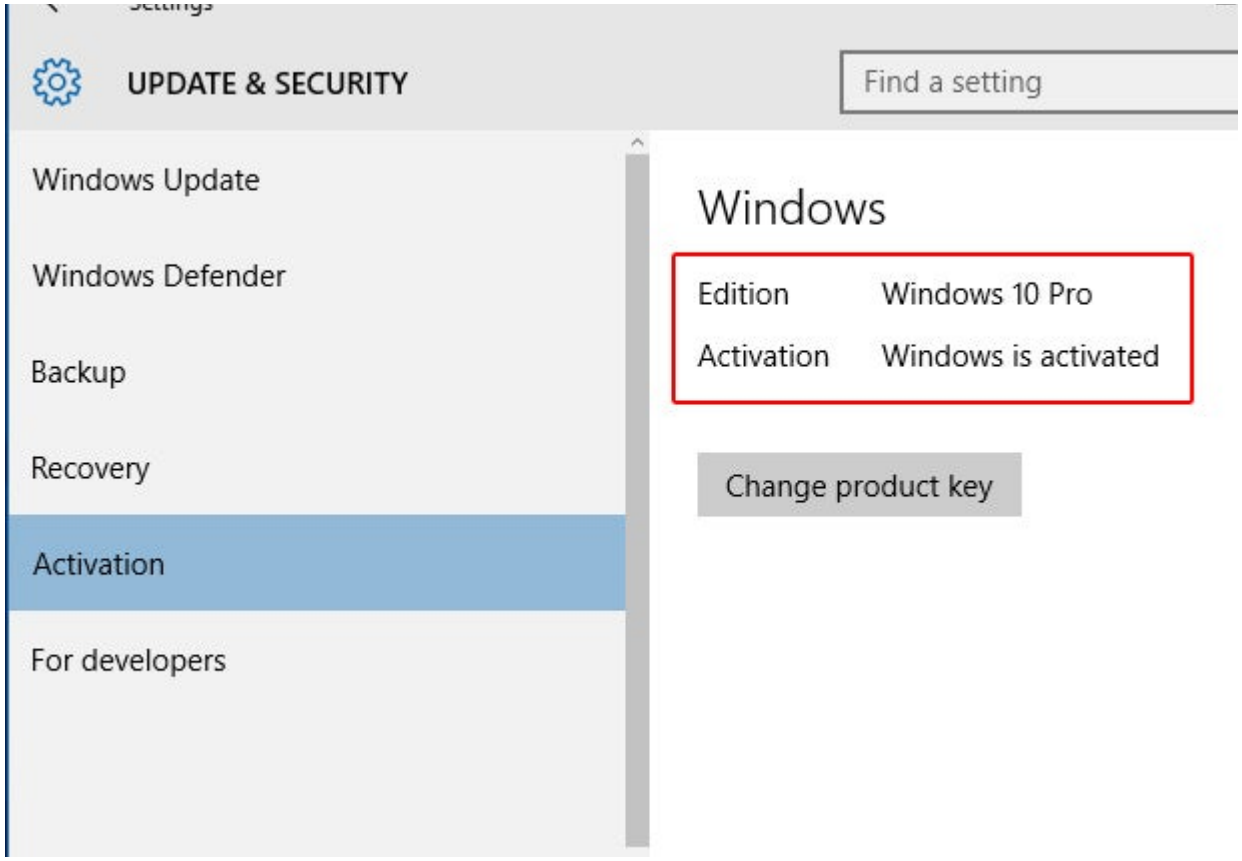
BOIS CONFIGURATION (basic input/output system)

How to Enter the BIOS on a Windows 10 PC;

1. **Navigate to settings.** You can get there by clicking the gear icon on the Start menu.
2. **Select Update & security.**
3. **Select Recovery** from the left menu.
4. **Click Restart Now** under Advanced startup. The computer will reboot to a special menu.
5. **Click Troubleshoot.**
6. **Click Advanced options.**
7. **Select UEFI Firmware Settings.** If you don't see this icon, then press Startup Settings, instead. When your PC is restarting, tap F1 (or F2) to access the BIOS.
8. **Click Restart.**

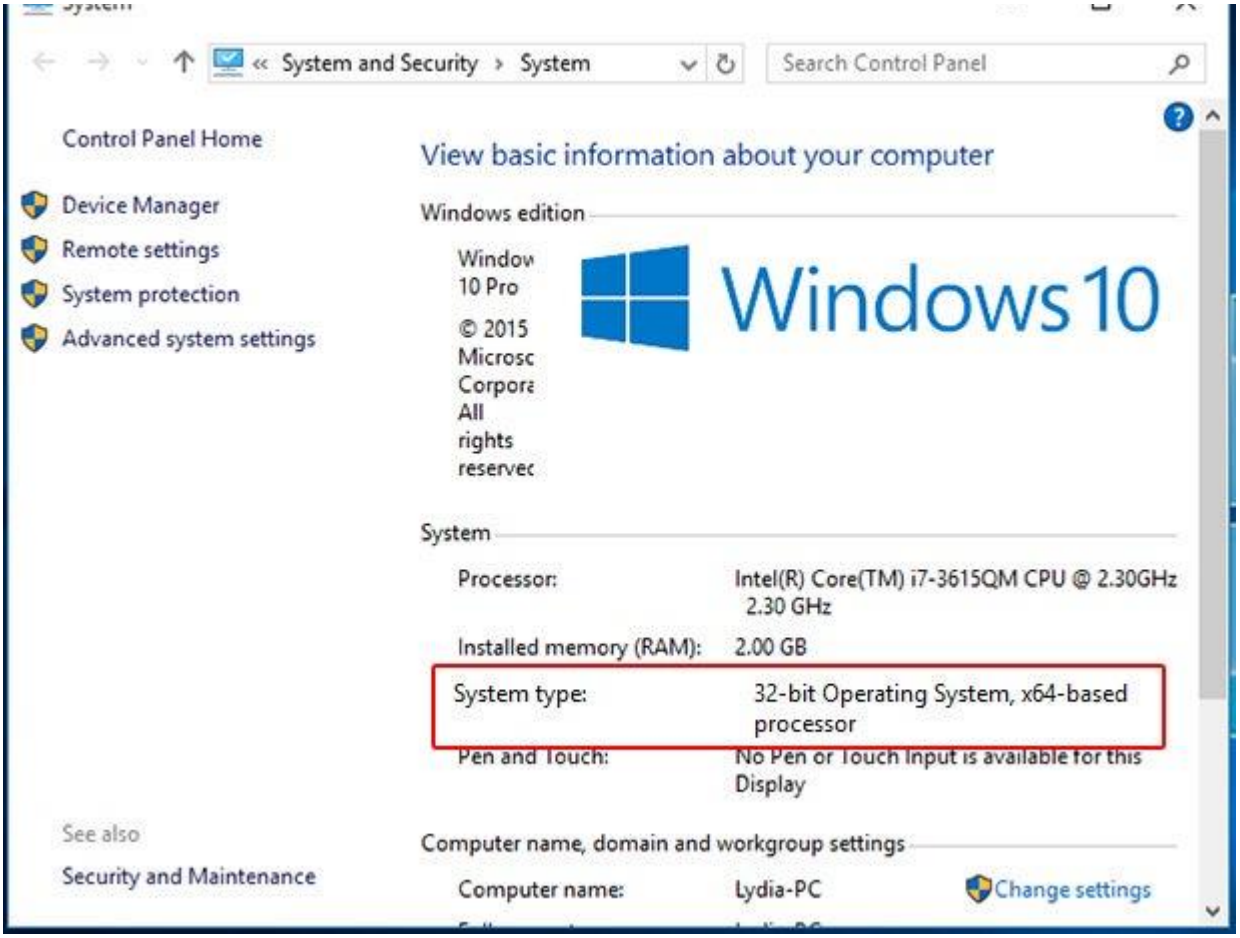
Your system will restart and take you to the BIOS.

Step 1: Upgrade to Windows 10



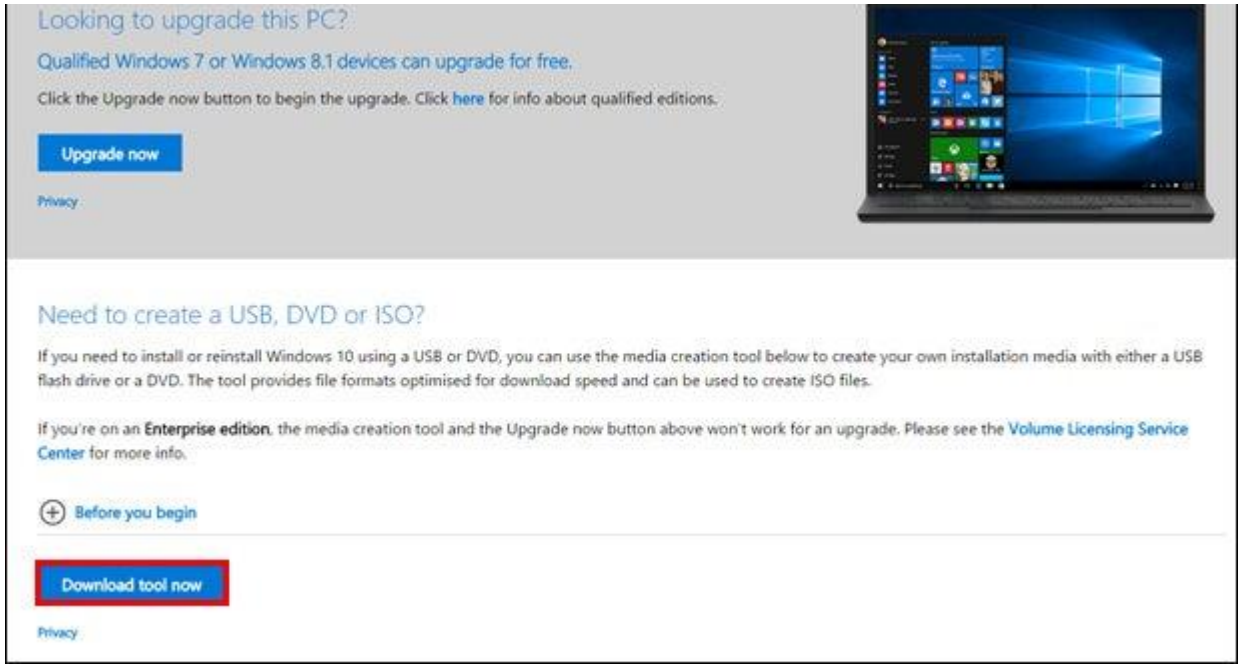
Confirm that Windows 10 has been activated by going to Settings > Update & security > Activation. If you don’t see the activation windows, you must not proceed and you’ll need to wait until Windows 10 activates.

Step 2: Upgrade to Windows 10



Next, search 'System' and choose the first option to see whether you’re using the 32-bit or 64-bit version of Windows.

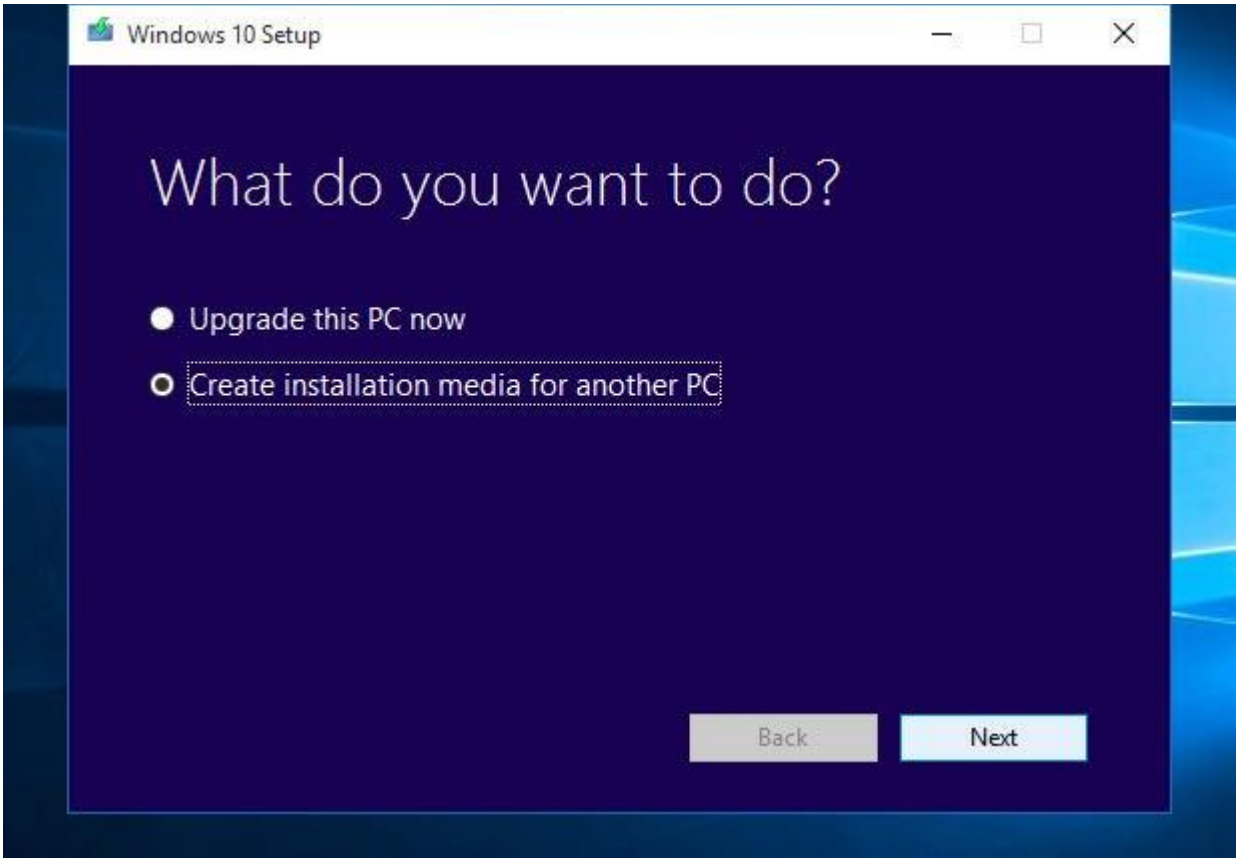
Step 3: Download the Windows 10 Media Creation Tool



The Windows 10 download is around 2.5GB and will need to be copied to a blank DVD or a USB flash drive for the installation,

Go to the Microsoft official website and click Download tool now. This just downloads a small setup tool.

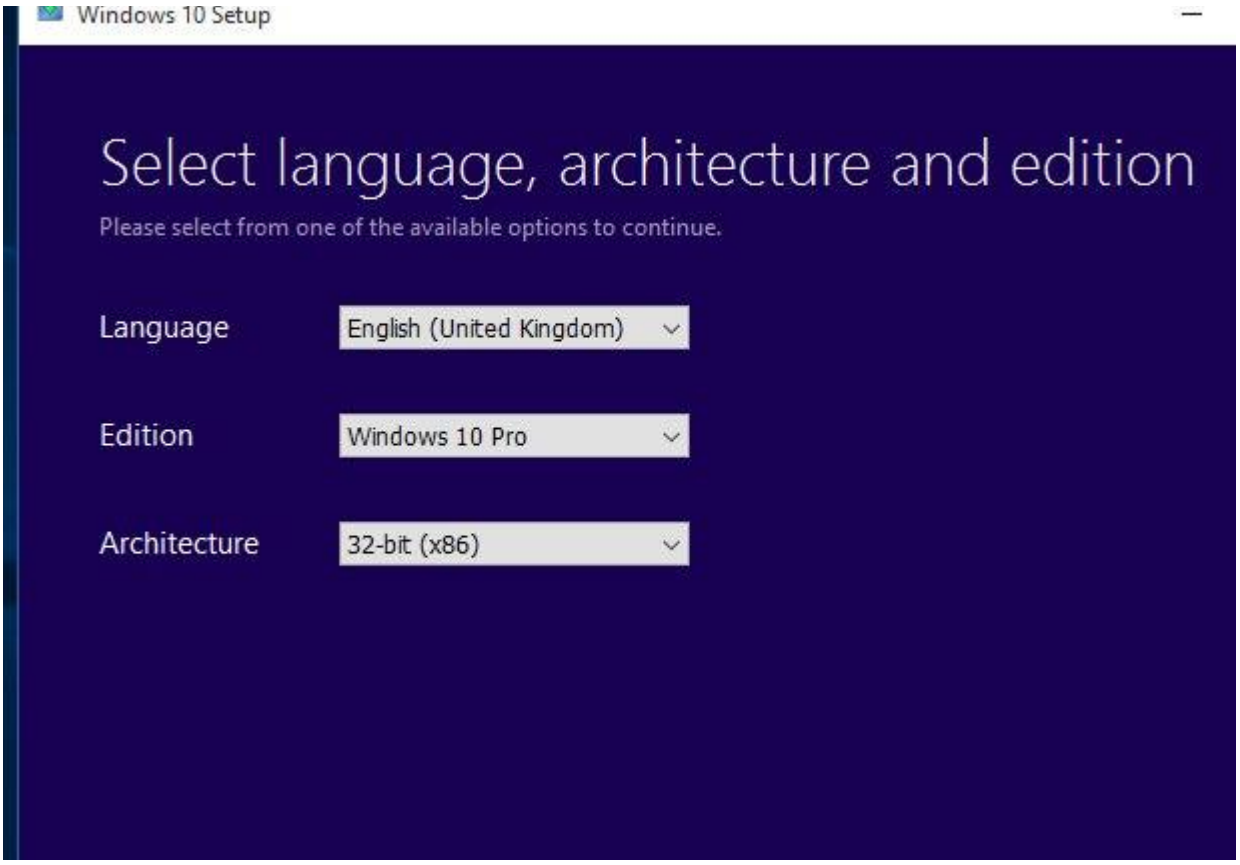
Step 4: Run the Windows 10 Media Creation Tool



When the download has finished, plug in your USB flash drive or insert a blank DVD in your PC. Find the downloaded MediaCreationTool.exe file in your Downloads folder and run it.

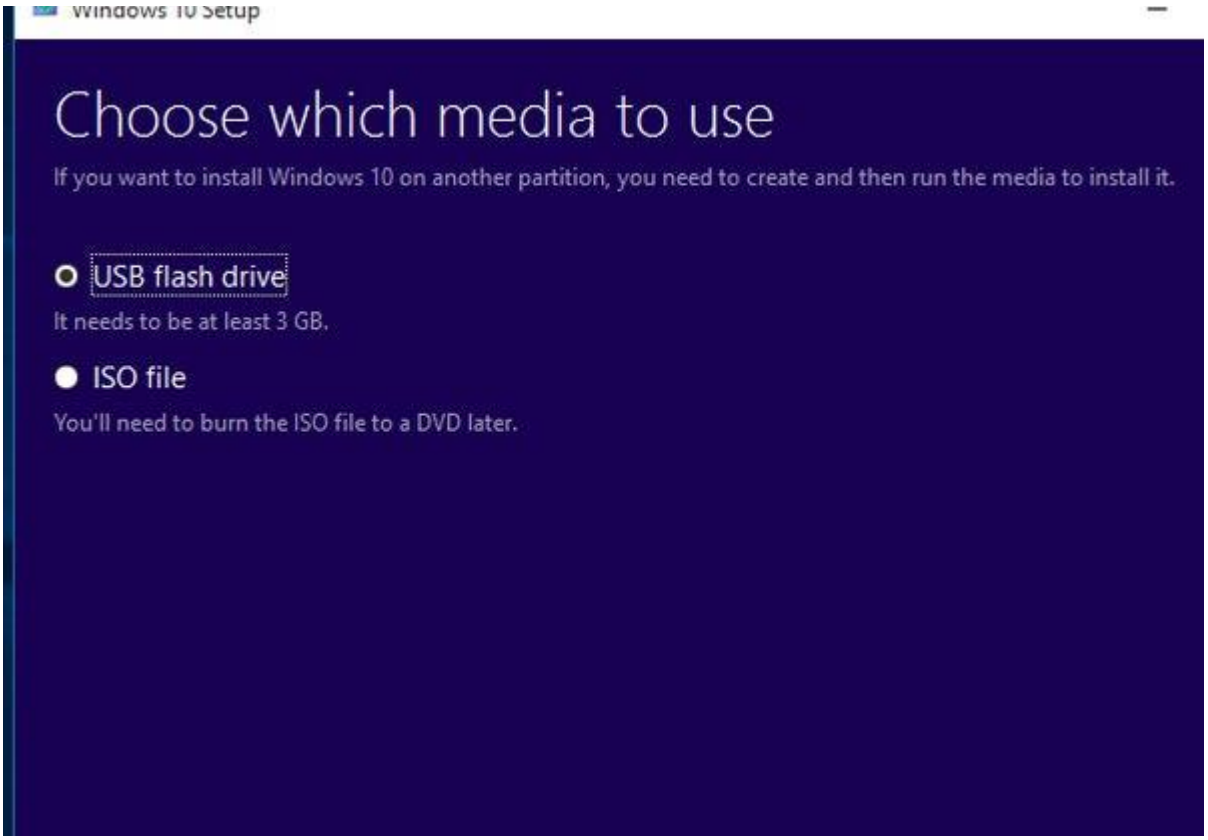
When the Windows 10 Setup appears, select the Create installation media for another PC option and click the Next button.

Step 5: Choose Your Windows 10 Version



On the next screen, choose the Language, Edition and Architecture to match your current version of Windows 10. Click Next to continue.

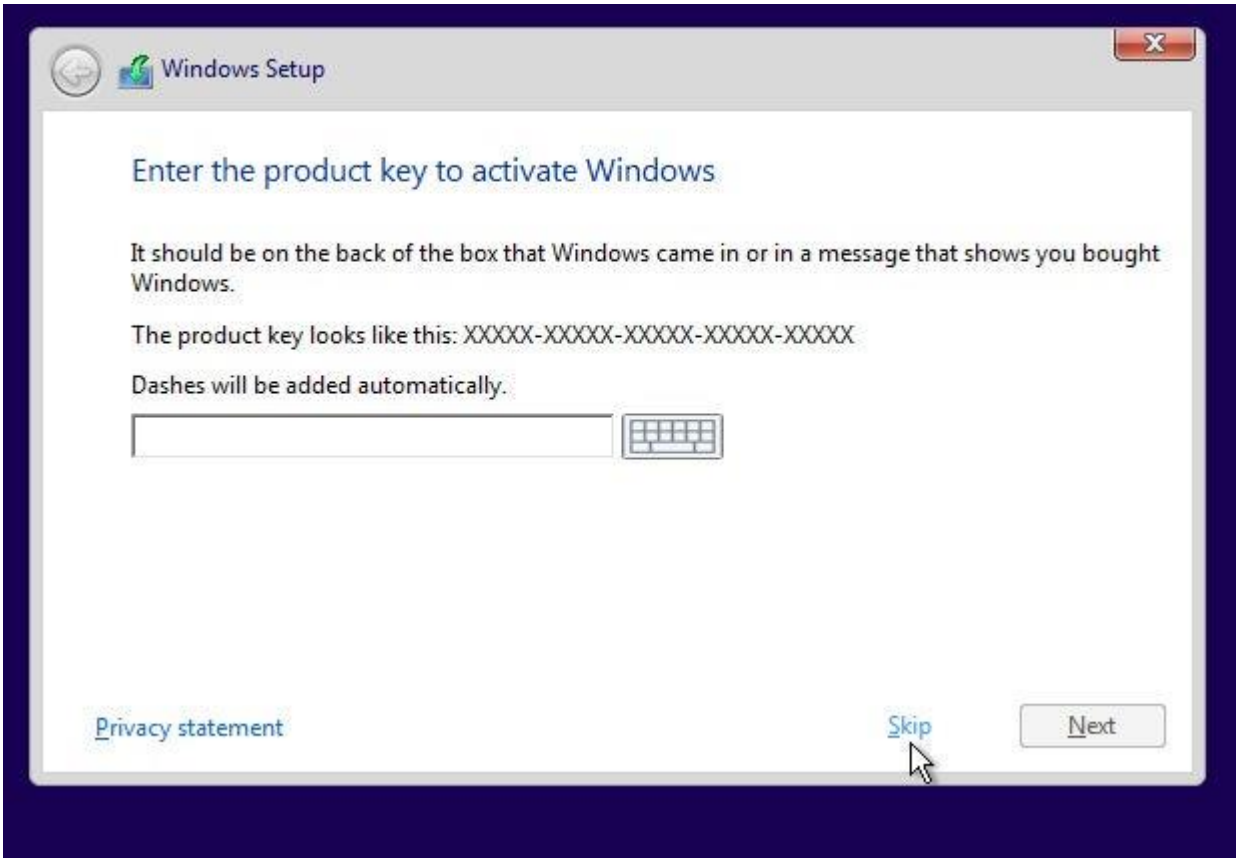
Step 6: Choose a Storage Device and Start the Download



Select the device you're going to use for the Windows 10 installation — USB or ISO and Click Next.

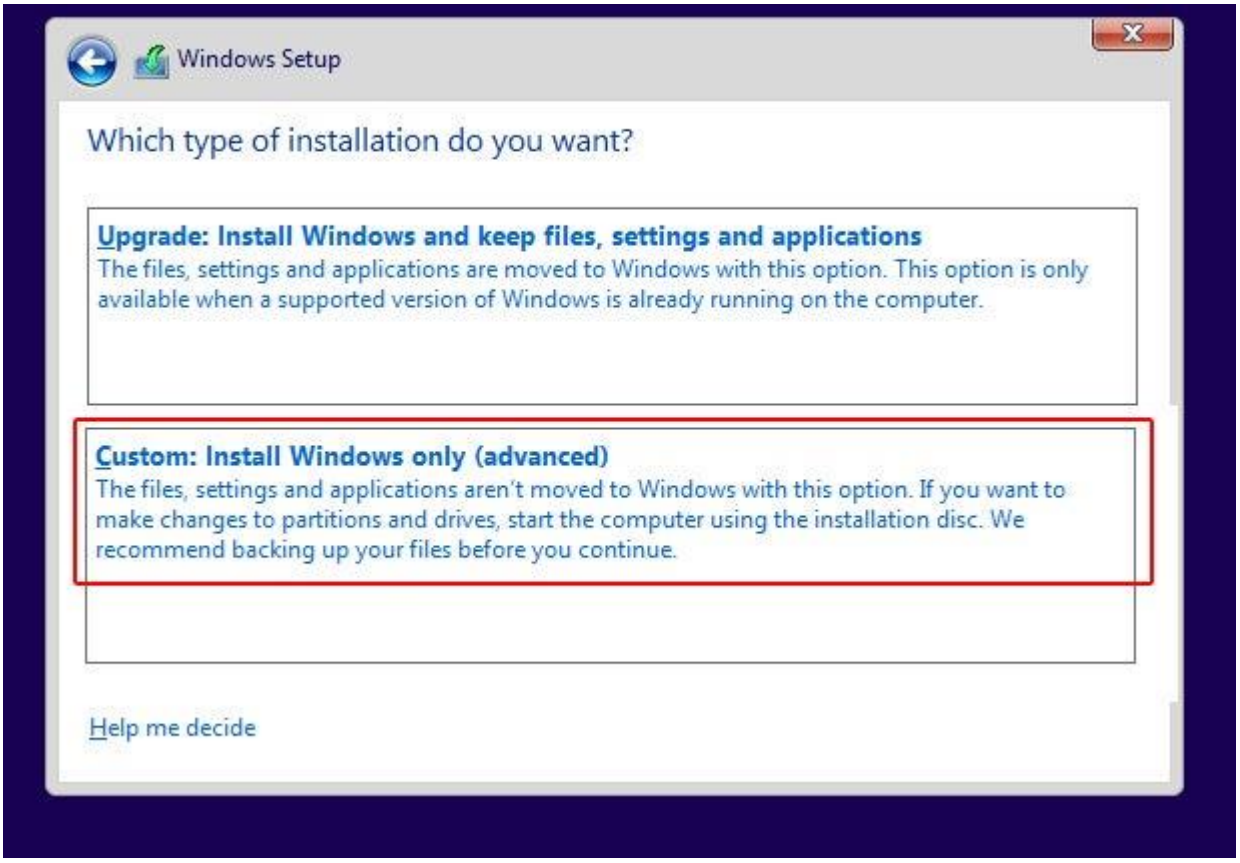
Click Next and the 4GB download will begin.
If you created a DVD ISO file, you'll now need to burn the file to a DVD before you can use it to boot your PC. Else you can boot using the USB flash drive.

Step 7: Begin the Windows 10 Installation



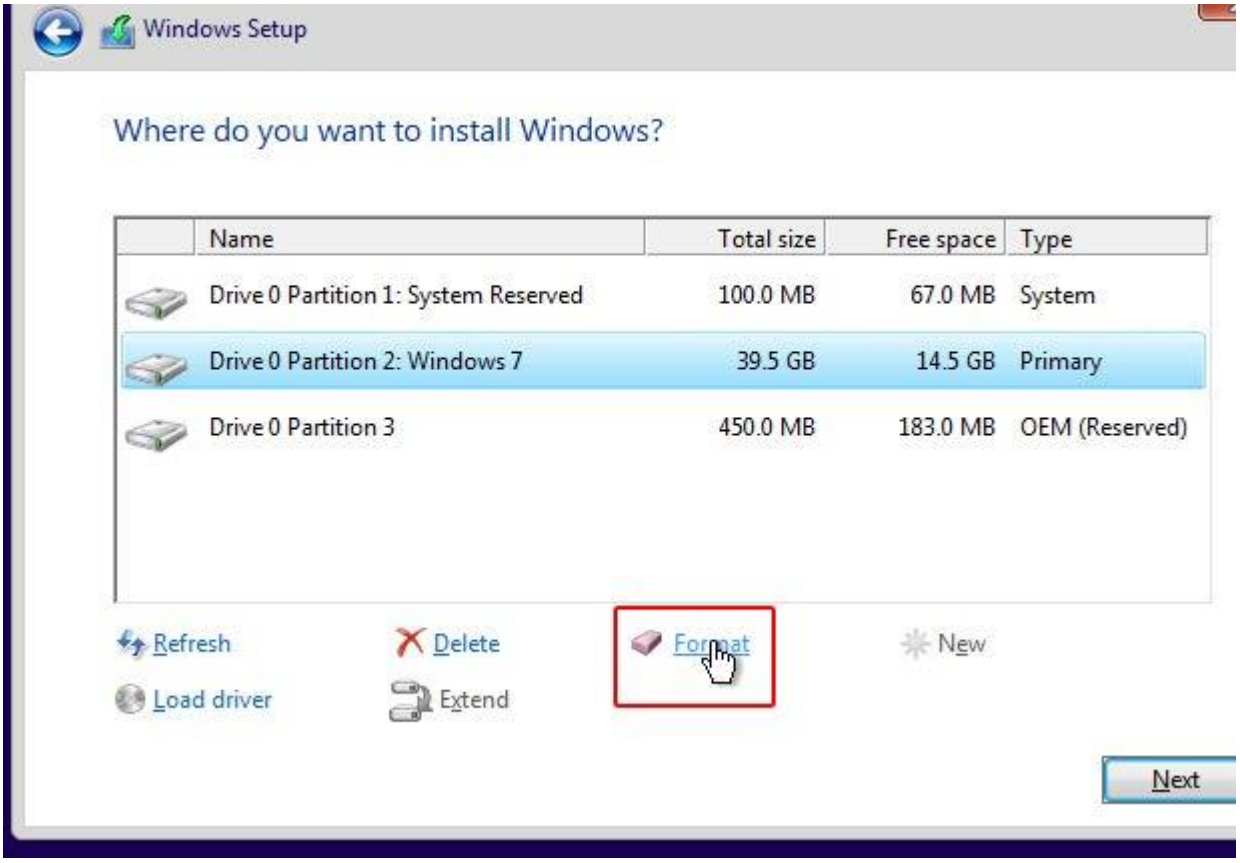
After you boot your PC using the Windows 10 DVD or USB flash drive, choose the Install now and then Skip the request for a product key. As long as you've already upgraded this PC to Windows 10, you won't need a product key.

Step 8: Perform a Custom Install



When prompted, choose the Custom: Install Windows only and This will erase everything on your existing Windows 10 drive so be sure you've backed up everything you want to keep before going any further.

Step 9: Choose Where to Install



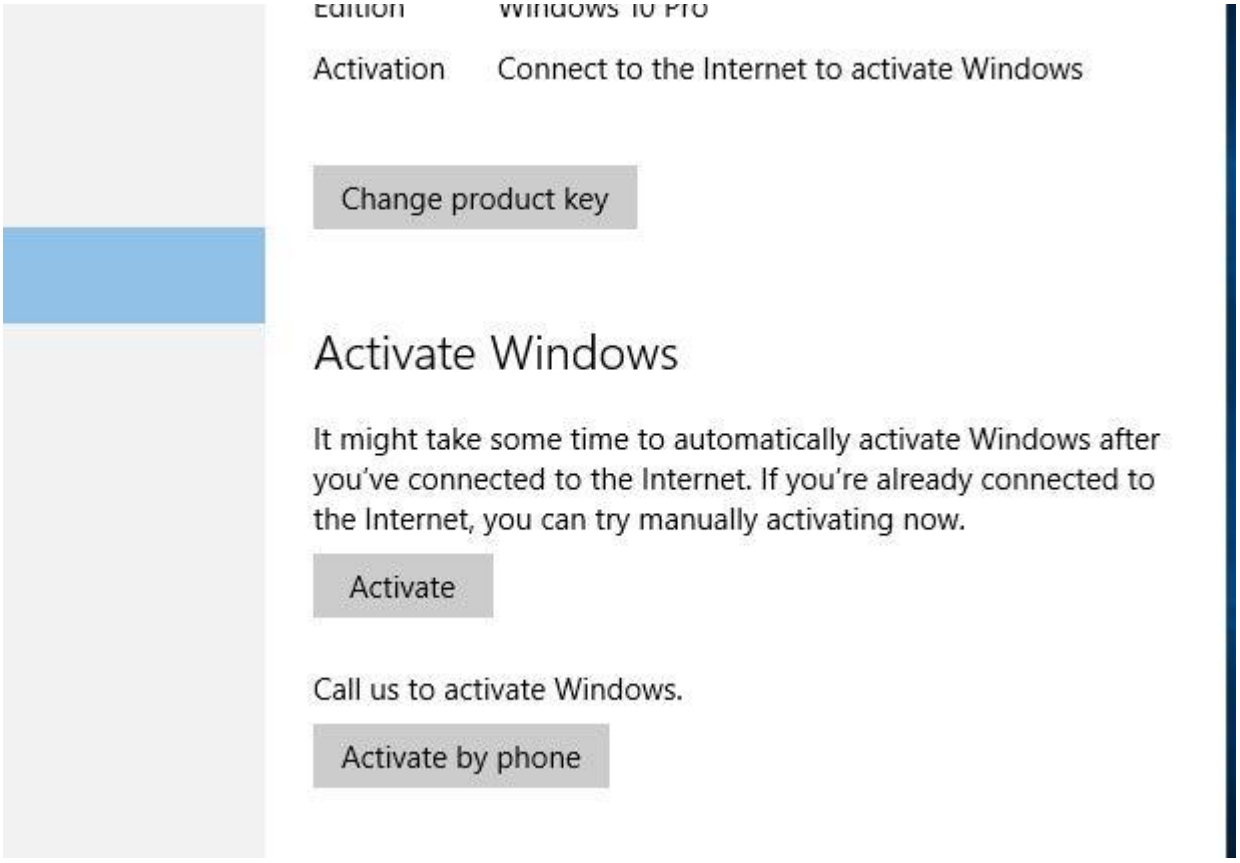
Select the drive partition you want to install Windows 10 on. If you're not sure which partition to use, seek help before going any further.

If you're happy to continue, click the Format option and click OK on the warning dialog box that appears. When the drive format is complete, click Next.

Step 10: Complete the Set Up

The Windows 10 installation will now start. When it's almost complete, you'll be asked for a product key again, so click the Do this later option and finish the rest of the set up.

Step 11: Confirm That Windows 10 Has Activated



Once Windows 10 is installed, repeat Step 1 to check that it has been activated — you may need to click the Activate button.

If activation won't complete successfully, you'll need to contact Microsoft, explain what's happened and ask for an activation code.

F)CLOSING/REFLECTION

That's all from me, I hope you all understand what that im going to present and im sorry if I have a misunderstanding or misscomunication in my presentation. So my reflection here is whether you want to study or you just want some new knowledge about this computing you may have to follow the step that's given to you. Its because you can understand that much more quickly that how thing working in you computer and you will be easier to understand about the process and steps.