**PC Maintenance and Repair - Computer Build**

**Part 1 - The Case**

1. Remove the side panels of the Case
2. Ground yourself - remove motherboard from its wrapper
3. Figure out which standoffs in the case line up with your motherboard.
4. Place the standoffs on the case in the locations matching your motherboard. (not needed in our build, case already has standoffs)
5. Install power supply - line up with the big hold on the back of the case
6. Install hard drive - remove the hard drive bay from the case, attach the hard drive to the bay, add back to the case, make sure the correct end is facing up.
7. install optical drive (not needed in our build)
8. install the rear I/O panel

**Part 2 - Install components on Motherboard**

1. Remove CPU from the box
2. Gently unlock CPU arm on motherboard socket
3. Line up the triangle corner of CPU with triangle corner of socket. It should drop into place without any force.
4. Lock the CPU arm.
5. Install RAM. Be sure to use the same colored DIMM slots, if more than one stick is used.
6. Apply thermal paste to bottom of heat sink
7. Place heat sink onto CPU.
8. Attach screws to the motherboard mounting bracket to secure heat sink. Slide the heat sink around once screws are started to spread the thermal paste.
9. Tighten screws in criss-cross fashion (1-3-2-4)
10. Connect Fan to heat sink.
11. Connect fan power to CPU Fan power connector on motherboard.

**Part 3 - Install Motherboard into Case**

1. Line up motherboard with rear I/O panel, so the components are showing through the backside.
2. Line up the motherboard with standoffs on bottom of case.
3. Place 1 motherboard screw on each end to secure the motherboard to your case.
4. Install remainder of your screws. Tighten, but don't over tighten.

**Part 4 - Connect System Wires**

1. Connect your Power Switch, Reset, HDD, USB, Front speaker cables from Case to appropriate spot on motherboard.
2. Route wire with good cable management.
3. Install the internal case speaker to the motherboard. (may or may not be included with case)
4. Connect SATA cables to motherboard, then to Hard drive and optical drive.

**Part 5 - Install Graphics Card**

1. Remove the bracket(s) on PCIe expansion slots on back of case so the port side of the graphics card is accessible.
2. Install the video card in the PCIe slot closest to the CPU.
3. Gently press it into the slot until it is fully seated into the expansion slot.
4. Use a screw to secure the graphics card to the expansion slot bracket.

**Part 6 - Connect Power Supply**

1. Route the SATA power cables to the hard drive and optical drive.
2. Connect the case fans either through the motherboard or with power connectors from the power supply.
3. Connect the PCI-e power supply connector to the graphics card. Some more powerful graphics cards may require two of them.
4. Connect the motherboard 24-PIN power connector.
5. Connect the CPU (4-pin or 8-pin) power connector.

**Part 7 - Boot System for First Time**

1. Plug the monitor, keyboard and mouse into the appropriate ports on your computer.
2. Plug the computer into a wall outlet.
3. Power on your computer for the first time.
4. Listen for internal PC speaker to beep once, which indicates a successful boot. More than 1 beep indicates issues which your motherboard documentation can help you identify.
5. Press <del> during POST to enter BIOS.
6. Tweak your BIOS settings. Install operating system disk into the optical drive. F10 to save and exit.
7. Install Windows.
8. Drivers should be autodetected for most common components, else use installation or website to install them.
9. Install benchmark software and overclock to maximize performance.