Nowadays most of us interface with a computer on a daily basis but have you ever wondered how do we do that? What helps us interact with this programmed electronic machine? Well, I have, so let me explain this to you:

It is all about so-called input/output (or I/O) devices. They make it possible for the computer to interact with the outside world by moving data into and out of its system. Keyboard, mouse, microphone are the most frequent and widely used input devices – that’s what brings data into the system. Then it gets interpreted by specific programmed instructions on its own and gives us an output in an understandable for us - humans – way. For these reasons such output devices as, e.g., monitor, printer and speaker exist.

Both – input and output devices – are directly connected to an electronic module inside the systems unit called a device controller that keeps inside the instructions mentioned above. For instance, the speakers of a multimedia computer system are directly connected to a device controller called an audio card, which in turn is connected to the rest of the system.

Sometimes secondary memory devices like the hard disk are called I/O devices (because they move data in and out of the main memory.) But what exactly counts as an I/O device depends on context.

To a user, a I/O device is something outside of the system box. To a programmer, everything outside of the processor and main memory might look like I/O devices. To an engineer working on the design of a processor, everything outside of the processor is an I/O device.

By this point we got to know the I/O devices that are not automatic and therefore are not able to work without a human user.

But I find it also important to mention such input devices as sensors. Sensors are designed to measure different environment features and convert the obtained data to digital signals.

Since sensors can sense almost any factor of our surroundings, it is not difficult to guess the types of it:

These are light, temperature, pressure, magnetism, moisture and humidity, acidity and motion.

After a sensor detects the needed feature, the indicated data gets sent into the processor, without a need of involving a person.

Sensors are widely used to, for example, detect temperature, water, air condition, to monitor certain chemical substances on factories or simply to get if there’s a need to light a room.

Hopefully, knowing what is behind I/O devices, made you notice that they have become an essential part of a daily routine of all of us. Thank you!