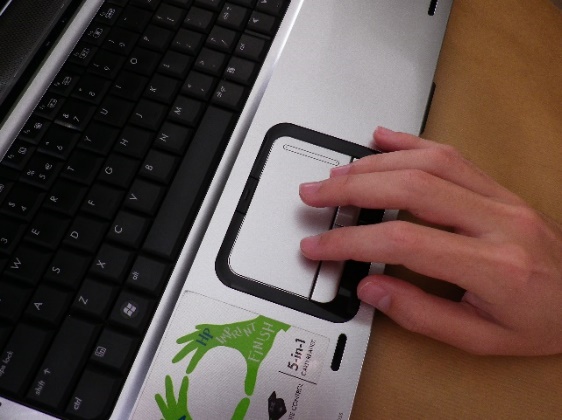
**Input and Output devices of smartphones, tablets and computers**

**Input devices**

The most common input devices are the ones used in mobile devices such as smartphones and tablets (there are more of these devices than there are desktop and laptop computers in the world).

These devices have a ***touch screen***. This is a screen that displays output but also includes technology that makes it sensitive to touch. This means that you can touch icons to start Apps, use gestures (such as pinch and push to zoom in and out) and even type in information using a keyboard that pops up on the display.

They also have ***cameras*** – one facing away from the user to take photos and videos of the world around you (many people use the camera to capture images of documents) and one facing the user which is used for ‘selfies’ (photographs of ourself) and video calls.

Finally they have ***microphones*** which are used for making phone calls, video calls, recording voice memos and even to control / give instructions to the device.

Some desktop computers and laptops also have touchscreens, but most rely on a ***physical keyboard*** to let the user type in data and a pointing device such as a ***mouse*** or ***touchpad*** to move a cursor around on the screen and interact with the GUI (Graphical User Interface) of the computer.

Although many desktop and laptop computers may include a built in camera for making video calls, the camera can’t easily be used to take pictures of documents, so these types of computers use a ***scanner*** to capture pictures of documents, books, photos, etc.

**Output devices**

Mobile devices use their ***touch screen*** as their main form of output, but they also rely heavily on ***speakers*** (for alert sounds, phone calls and playing media such as music). Users can also connect ***headphones*** for a more private listening experience.

Finally they also provide haptic feedback – that is they vibrate as an alert when the sound is turned off or to add effects to games, etc.

Desktop and laptops rely on more ***conventional screens***. Laptops have a built in screen whilst desktops mostly need a separate screen. Laptops have connections that allow you to use an extra external screen if you need to.

Visual output is also provided by ***projectors*** that can be sued to show a large image to a room full of people.

Finally, computing devices can use ***printers*** to create output on paper that can be viewed and shared even when the computer is not around. ***3D printers*** can be used to make real three dimensional objects – anything from toys to tools, from bridges to medical implants.