

## Differences between operating systems and application software

Operating systems and application software differ in what they do. Operating systems manage system resources; application software performs specific tasks.

Operating systems	Application software
Create files.	Play music.
Manage folders.	Draw a flowchart.
Keep documents secure.	Produce a document.
Allocate memory to different jobs.	Send a document via fax.
Manage the CPU to ensure that jobs are processed.	Request and display web pages.
Provide users with an easy-to-use interface.	Insert a chart in a presentation.

**Table 1.6** Different types of tasks performed by operating systems and application programs

## Care when working with computers

### Caring for computer hardware

Computer systems, like any other electronic equipment, need special care and attention in order to perform properly and safely. Keeping your computer clean can do a lot for your system. Sticky keyboards make it difficult to type, dirty monitors can make it difficult to read what is on the screen, and paper fragments inside a printer may cause paper jams.

Modern laptops run fast microprocessors that can generate a lot of heat. The heat is mainly vented out of the bottom of the laptop but ventilation effectiveness is reduced when the laptop is placed on a solid surface or on your lap. A hot laptop can suffer from reliability problems and a system that overheats can fail. The accumulation of heat can crash your laptop processor and hard drive.

Some ways of caring for computer peripherals are:

- Cover hardware devices (scanner, printer and monitor) when not in use.
- Use a soft, damp cloth to clean the screen of the monitor on a regular basis.
- Eat or drink only in areas away from where the equipment is located.
- Use compressed air, not suction, to remove dust and small fragments from keyboards and printers.
- Use a silicone keyboard overlay – this keeps crumbs and liquids out (but you shouldn't really eat or drink at the computer desk).
- Keep the sensing mechanism of your mouse clean – the ball in a mechanical mouse, the 'eye' of an optical mouse.
- Use power protection devices such as surge protectors and uninterruptible power supplies to protect computer systems from the damaging effects of power surges and blackouts.
- Ensure that the air vents are never blocked and perhaps use a cooling pad underneath your laptop.

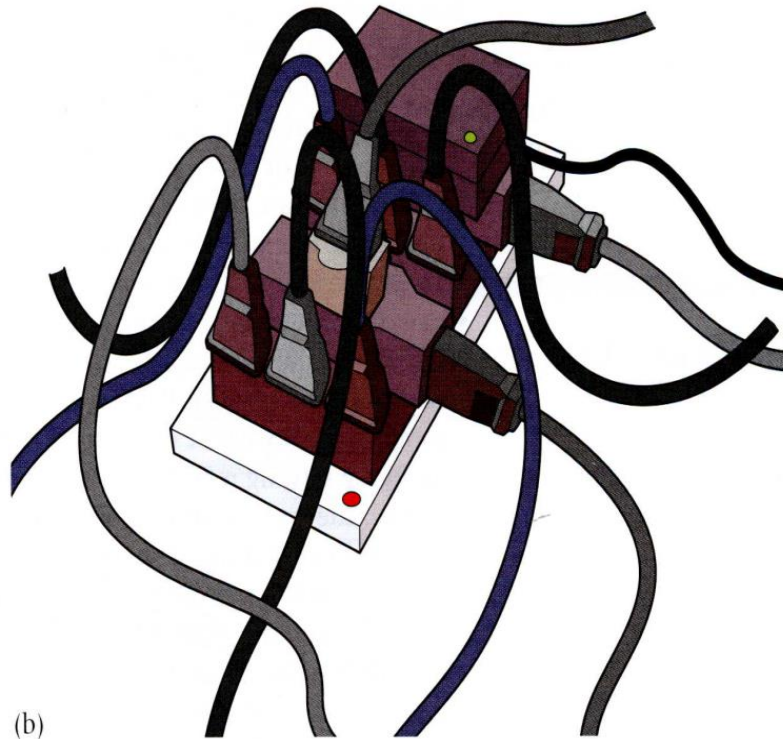
### Activity 7

Visit [www.OfficeDepot.com](http://www.OfficeDepot.com) and go to Technology > Computer Accessories > Security, Tools & Cleaning. Assuming that you have US\$50.00 to spend, which three items would you purchase and why? Copy and complete the following table in your notebook.

Product description	Price	Reason

## Caring for your working environment

Without a healthy, capable user, a computer would sit idle. It is therefore important that the working environment be kept safe. An unsafe environment is one where an accident is waiting to happen.



**Figure 1.18** (a) Messy wires and (b) an overloaded electrical outlet are two common hazards in the working environment

Some tips for keeping the work environment safe include:

- Use suitable furniture that is capable of bearing the weight of the equipment.
- Keep cables neatly arranged and out of walkways to avoid trip hazards.
- Do not overload electrical outlets to avoid fire hazards.
- Do not place items on the equipment – they may block the air vents.

## Taking care of yourself – the computer user

Some tips for taking care of yourself include:

- Ensure that your chair and desk are the correct height.
- Avoid extended use of the equipment – take regular breaks.
- Ensure that the lighting is adequate.

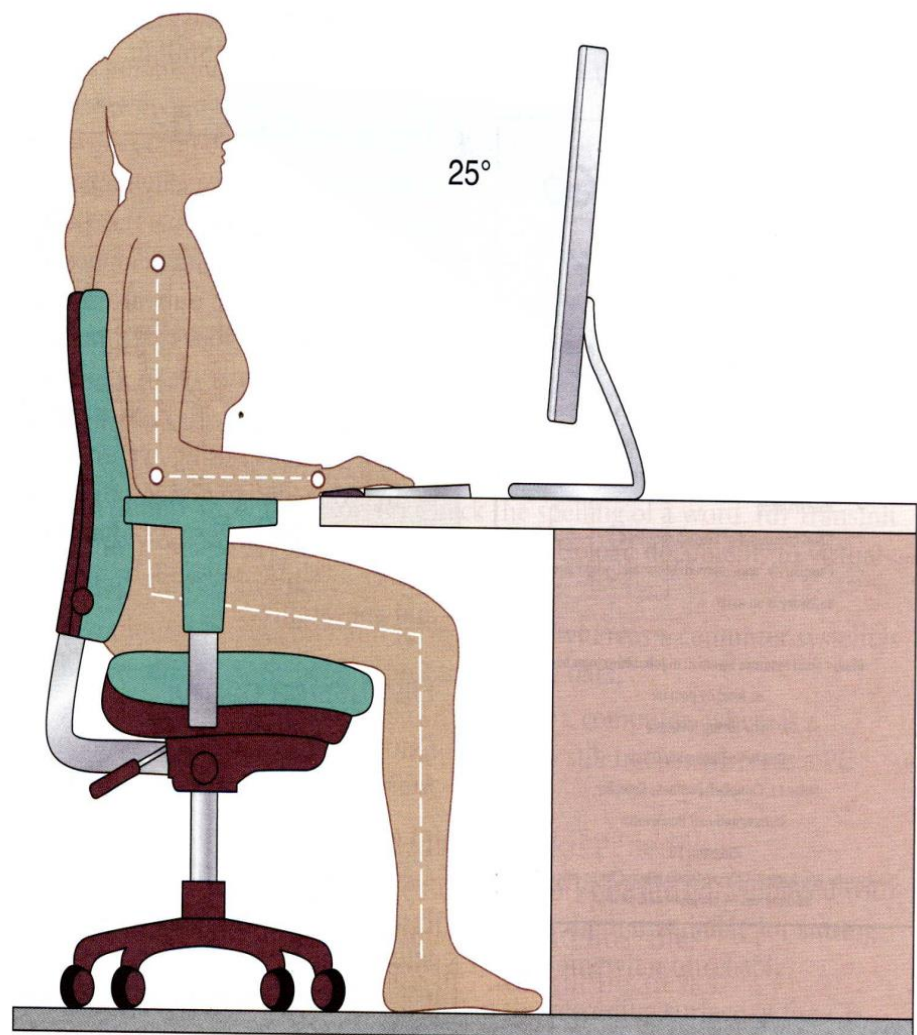
Improper furniture, bad posture and extended use may all contribute to repetitive strain injury (RSI), a condition caused by overusing the hands to perform a repetitive task, in this case typing and clicking the mouse. Back pain and eyestrain are two other health problems caused by misusing computers in the ways indicated above.

The heat from some laptops can be enough to cause superficial skin burns, even through clothing! A medical journal reported the case of a healthy 50-year-old scientist, fully dressed in trousers and underpants, who burned his genital area after placing his laptop on his lap for an hour. While using the laptop he occasionally felt the heat and a burning feeling on his lap and thighs. Two days later he had blisters that then developed into infected wounds. In addition to a hot laptop being uncomfortable to use, it has been proven to reduce fertility in men.

Visit <http://ergo.human.cornell.edu/ergoguide.html> for ergonomic guidelines for arranging a computer workstation.



Ergonomics weblink



**Figure 1.19** Keyboards can increase risk of injury. This good typing position reduces risk of muscle fatigue and injury.