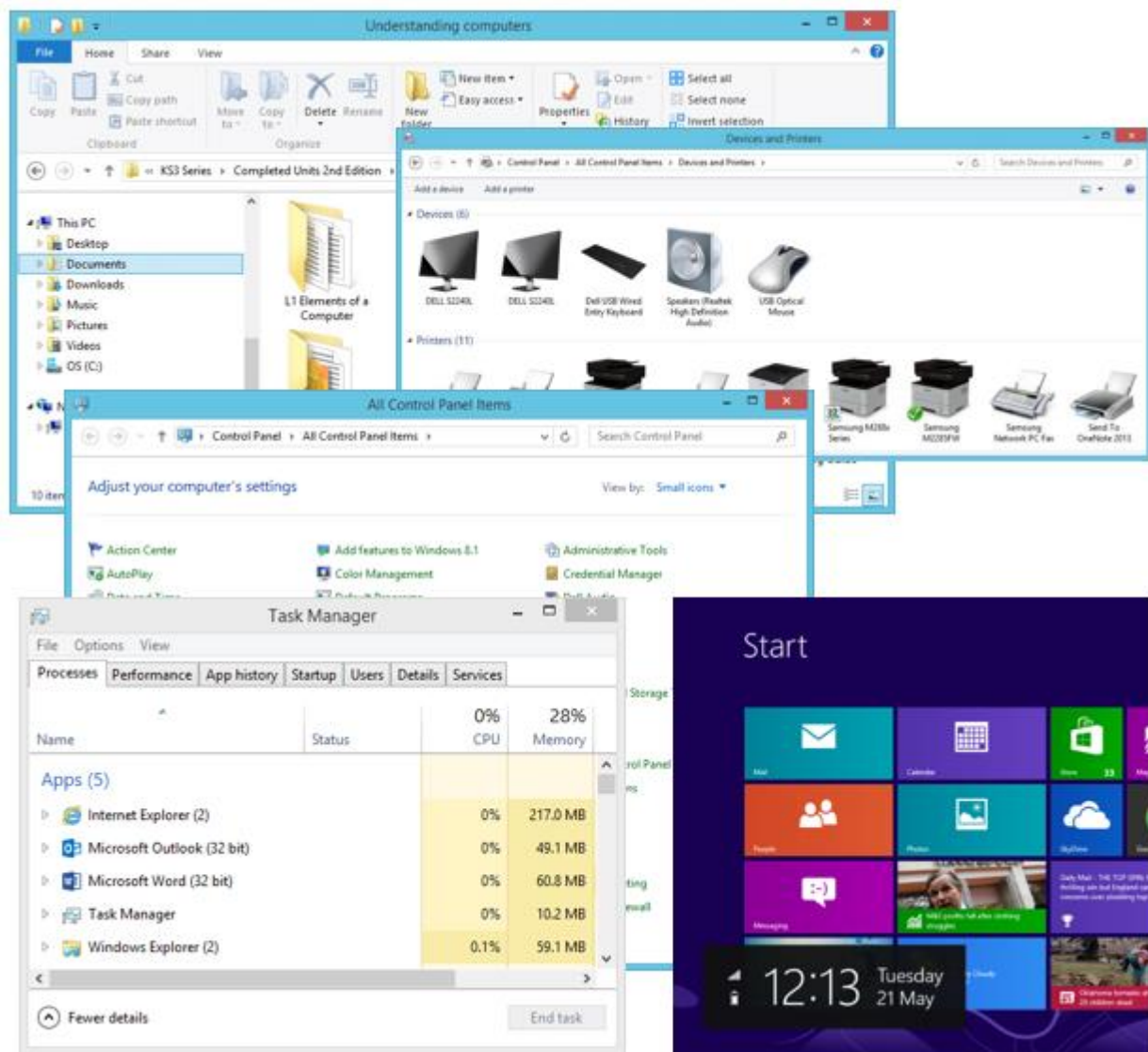# Worksheet 2: Application and system software

## Task 1

1.   What does an operating system do?



Write down things you think an operating system does. Use these screen shots from Microsoft Windows and your own experience to help you.

2.  What is the difference between system software and application software?

    _____

    _____

    _____

3.  Tick the box that corresponds to the correct group of software, stating whether it is either application or system software.

| | Application software | System software |
|---|---|---|
| **Windows 10** | | |
| **Excel spreadsheet software** | | |
| **Android** | | |
| **Python IDE** | | |
| **Firewall software** | | |
| **iOS** | | |
| **Chrome browser** | | |
| **Word processor** | | |
| **FIFA football game** | | |
| **Till software for Tesco** | | |
| **Linux** | | |
| **Air traffic control** | | |

## Task 2

4.  An Operating System (OS) handles the management of processors, memory, I/O devices, applications and security. Give examples of how the OS does this.

| Aspect | How the OS manages this |
|---|---|
| **Processor** | |
| **Memory** | |
| **I/O Devices** | |
| **Applications** | |
| **Security** | |

## Task 3

5. The grid below represents locations (sectors) on a hard disk where files can be stored. Each one is 512 bytes each so a file will occupy several sectors. Files 1 to 5 are shown on the hard disk diagram in grey. We are going to simulate storing some more files on this disk.

   (a) File 6 needs 11 sectors of disk space, write it to the disk

   (b) File 7 needs 8 sectors of disk space, write it to the disk

|   |   | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 2 | 2 | 2 | 2 |   |   |   | 3 | 3 | 3 |
| 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
|   |   |   |   | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 5 | 5 | 5 | 5 | 5 | 5 | 5 |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |

   (c) What did you have to do to fit the last file onto the disk?

   _____

   (d) Why does this make it slower to read this file?

   _____

   _____

   (e) What does the disk defragmenter do?

   _____

   _____

   (f) Show what the disk will look like after the disk defragmenter has run.

|   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|
|   |   |   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |   |   |

## Task 4

6.  Choose from the list below to fill in the name of the utility program being described in each row of the table. (You may not use all the names, and some may be used more than once.)

**automatic backup, automatic update, anti-spyware, anti-virus, compression, disk defragmenter file management, file repair, file transfer, firewall, spyware**

| | |
|---|---|
| | Prevents harmful programs being installed and important files being changed. |
| | Prevents unauthorised access to computers or a LAN. |
| | Optimises the use of the hard disk space by collecting together the separate parts of each file in one location on the disk. |
| | Controls what sites computers on the LAN can access. |
| | Reduces the size of a file so that it can be sent as an email attachment. |
| | Regularly checks on the internet for patches or newer versions of software and installs it. |
| | Scans a damaged file and extracts the maximum data from it to create a new, usable file. |
| | Saves a copy of all files that have been changed since the last time the utility was run. |
| | Allows the user to create a logical view of how their files are organised using folders.  Allows the user to move files within folders, copy, paste, name and delete files. |
| | Detects programs that secretly record what you are doing on your computer, and prevents them from installing themselves. |