

System Software

ESC108A Elements of Computer Science and Engineering
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Objectives

- At the end of this lecture, student will be able to
 - identify *system software*, including *software libraries*, *operating system* and *utility software*
 - Identify *application software*
 - explain the nature and purpose of an *operating system*

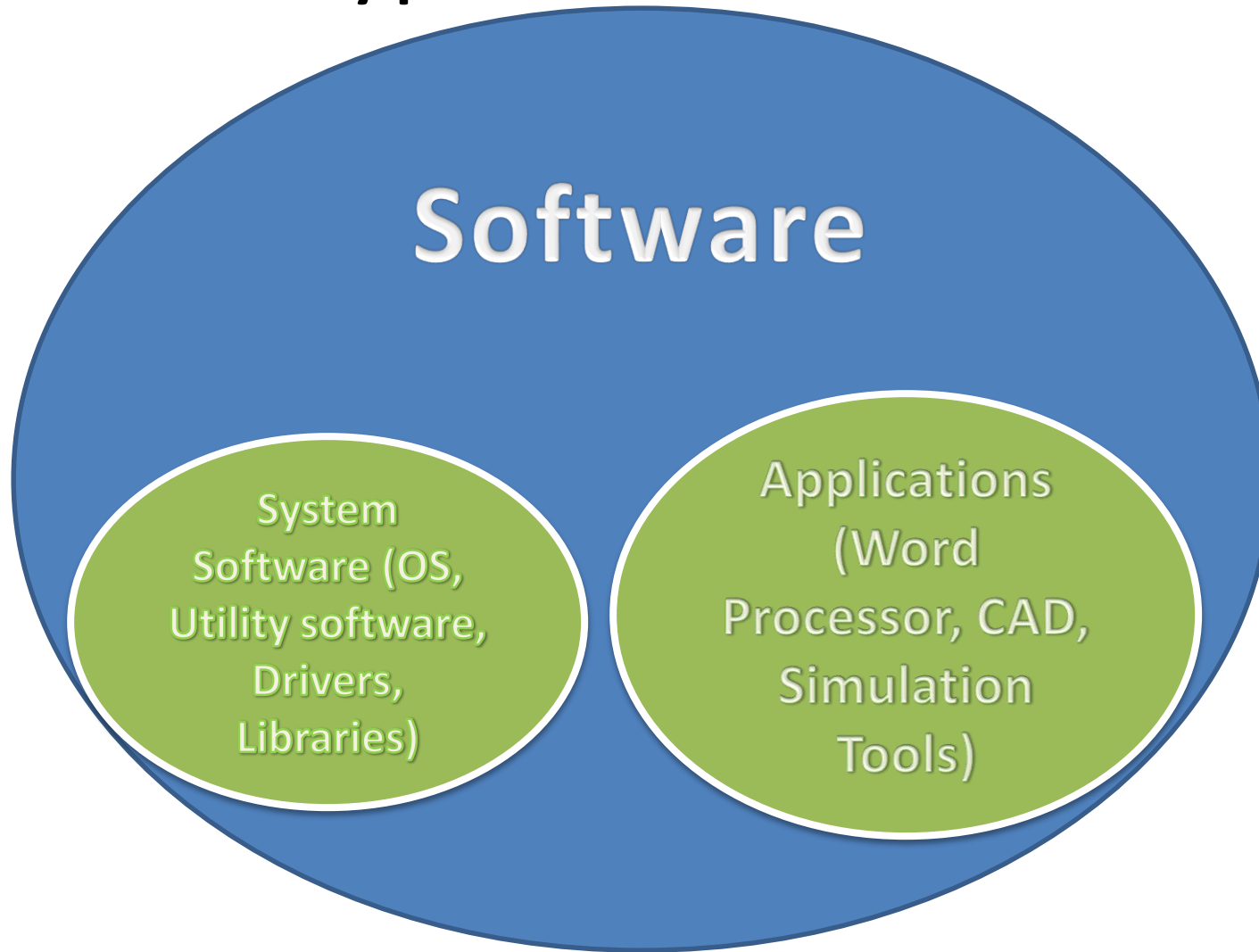


Contents

- Application software
- System software
- Operating system
- Utility software
- Software libraries



Types of Software



Application Software

- Any software for me to use?

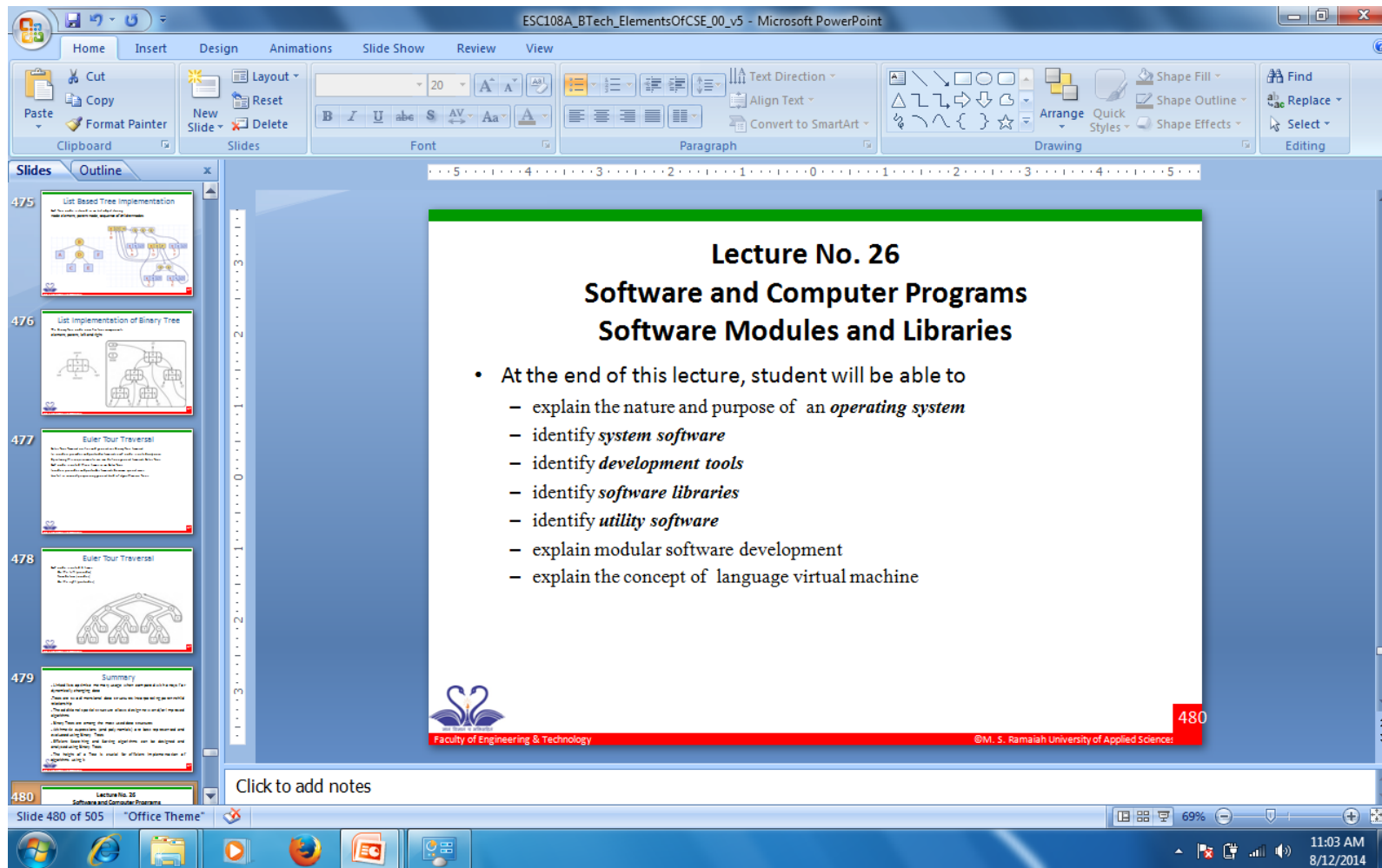


Application Software contd.

- A program or group of programs designed for end users
- Examples
 - Browser
 - Document management software
 - Presentation software
 - Movie players



Application Software - Example



System Software

- Which software provides an environment for the programs to run?



System Software contd.

- Used for managing the computer hardware and provide a platform for applications to execute
- System software consists of low-level programs that interact with computers at a basic level
- Examples
 - Drivers
 - File system libraries
 - Registry
 - Utility software
 - Operating system
 - Runtime Libraries



Operating System

- Why do we need it?

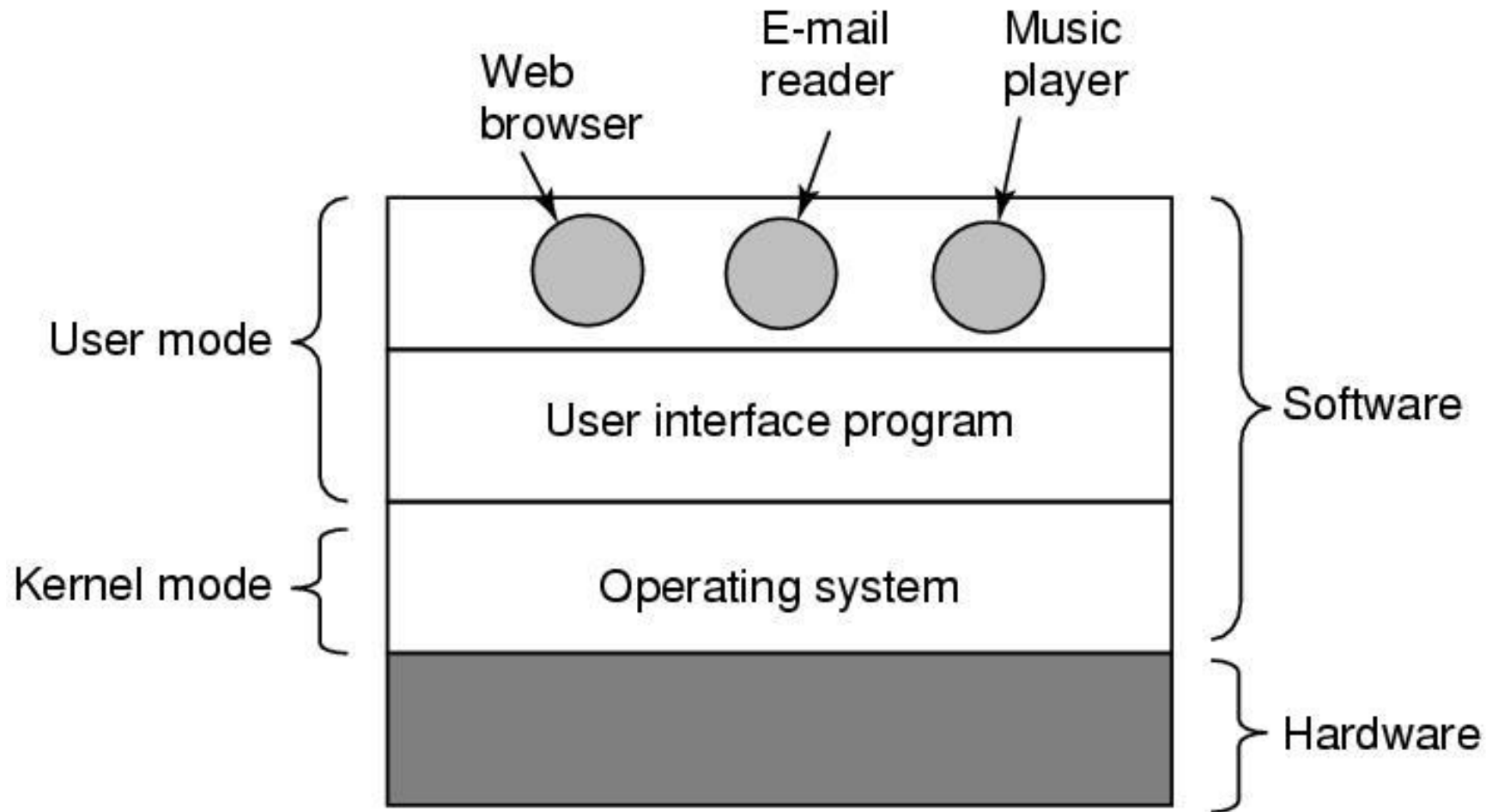


Operating System

- A place to run programs
- Gives an interface to user
- Manages hardware using “Drivers”
- An OS is a program that acts an **intermediary** between the user of a computer and computer hardware
- Example
 - DOS, Linux, Windows



Where does the OS fit in?

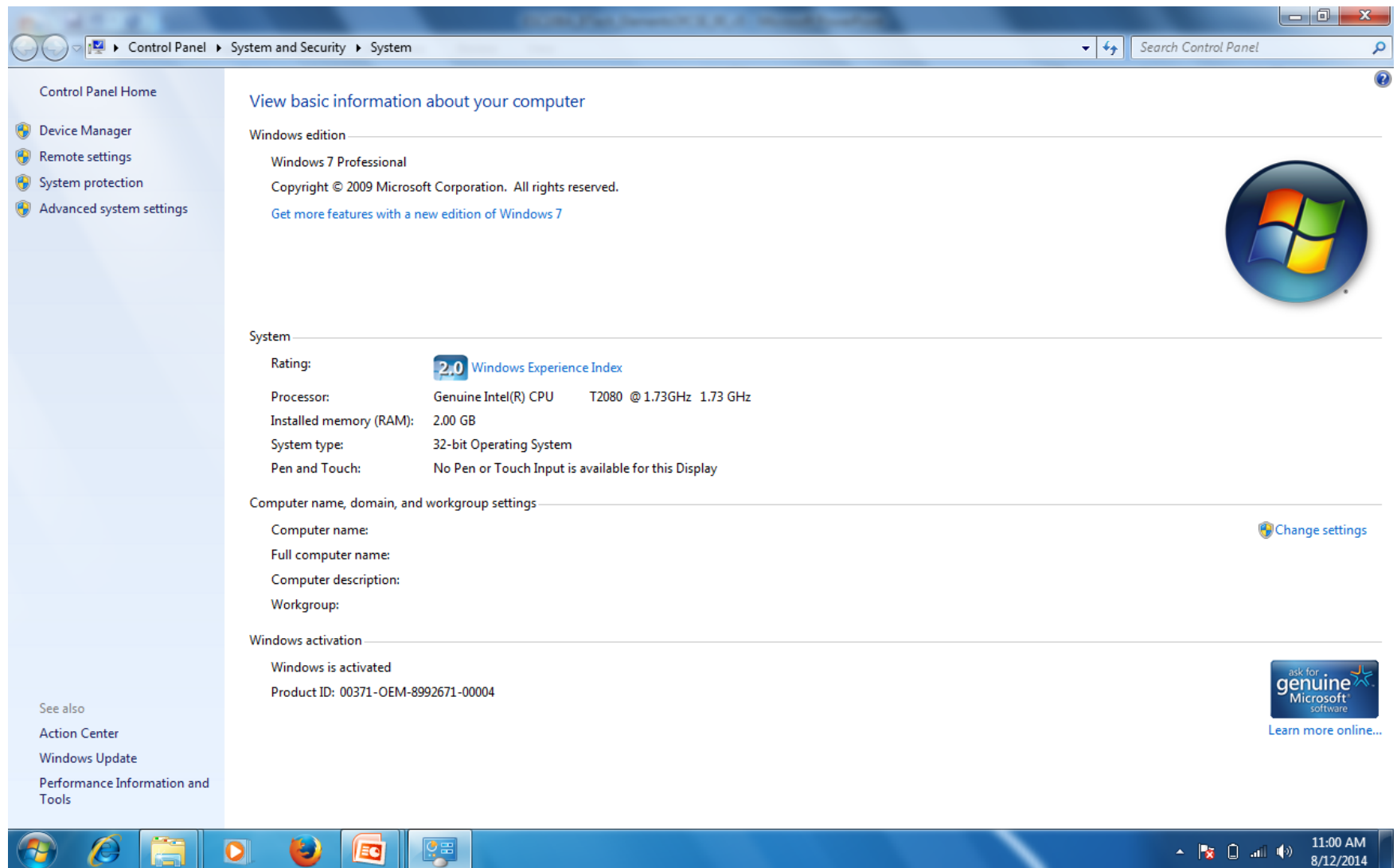


Services Provided by an OS

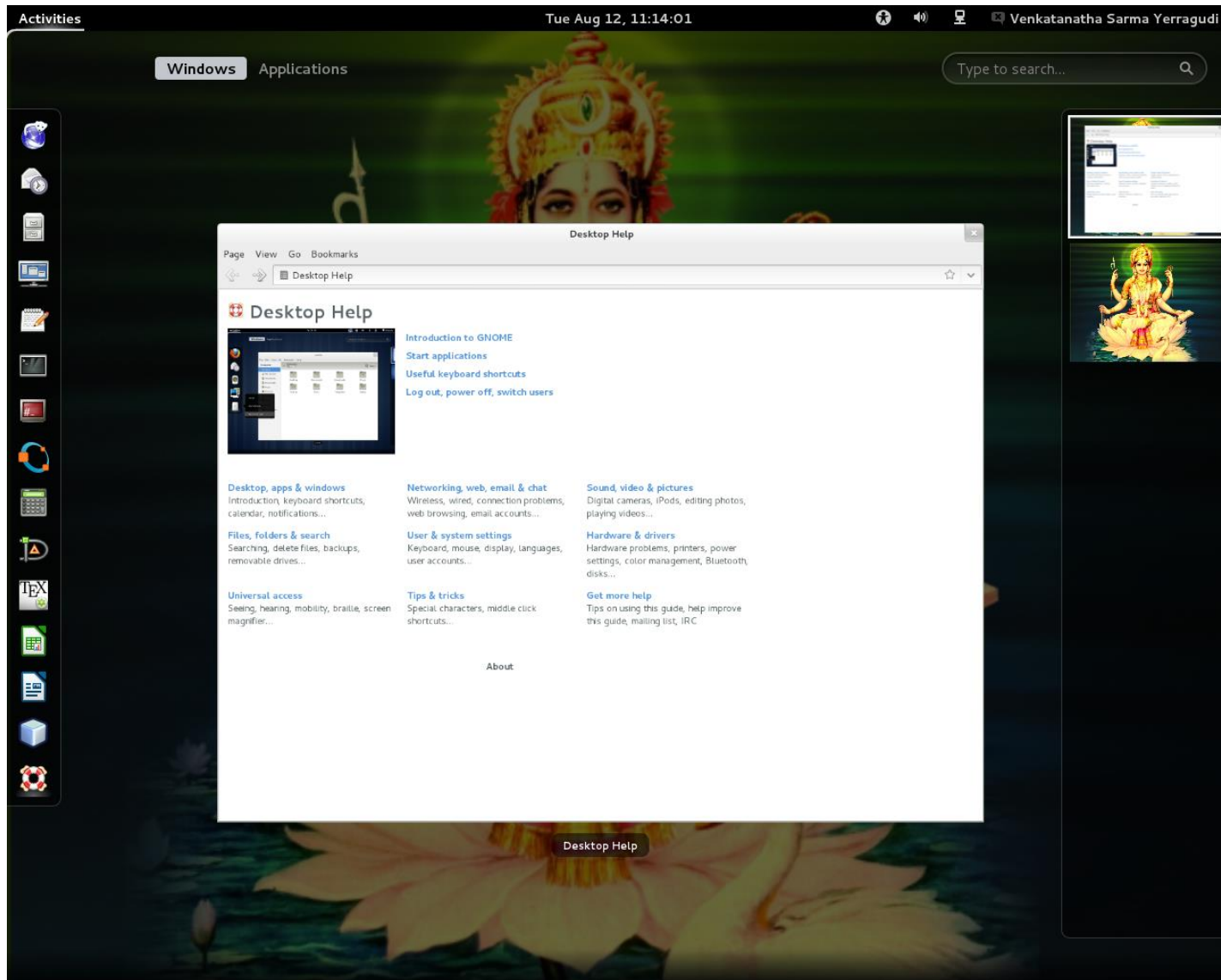
- Memory management
 - Allocating memory to running programs and deallocation
- Processor management
 - Processing jobs, job scheduling
- Device management
 - Deals with specific input and output units
- File management
 - Deals with where the files are stores, their status and memory locations



Operating System - Example



Operating System - Example



Utility Software

- Is there any software that I can use to make my system run faster?

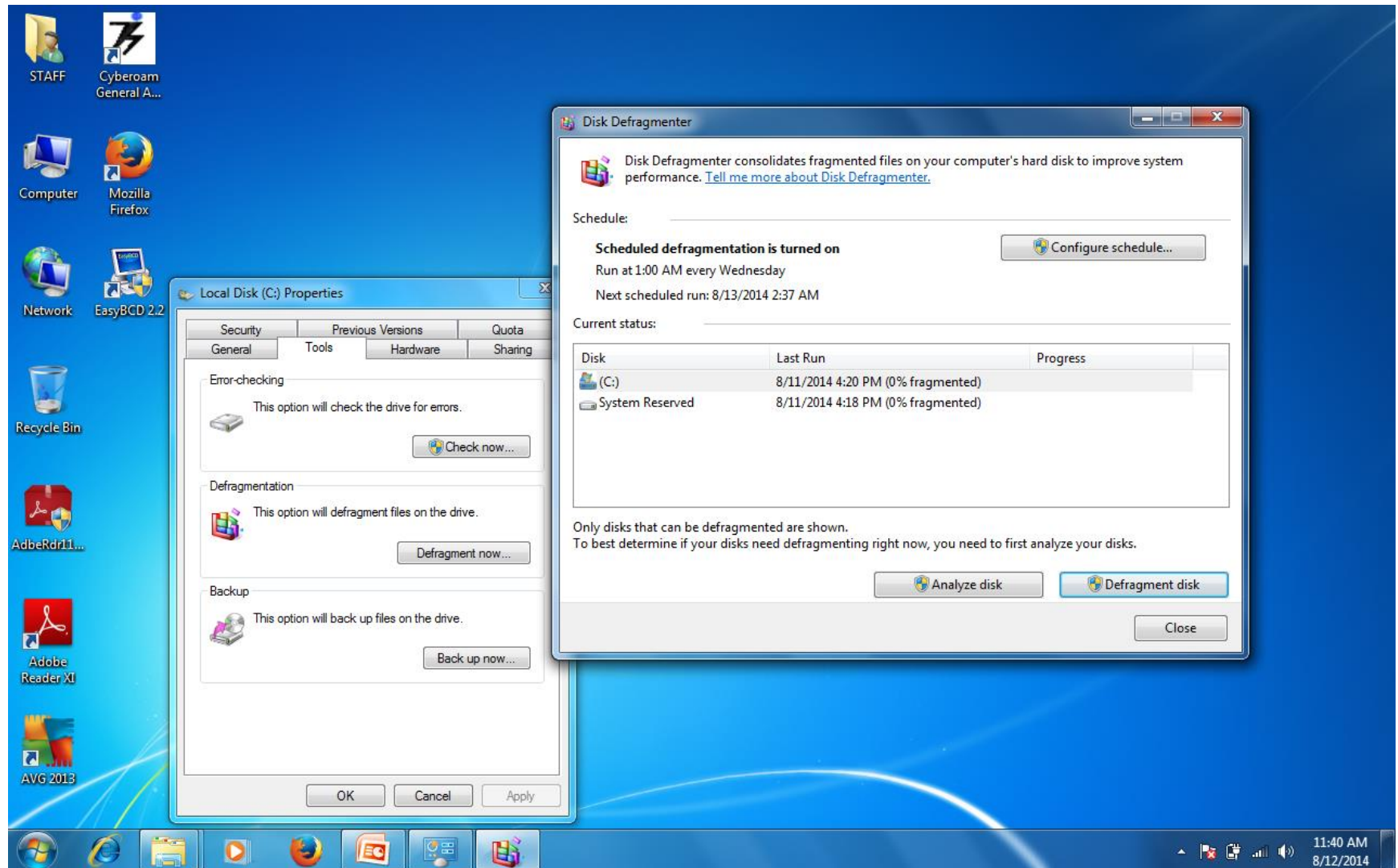


Utility Software

- Software that is used to analyse, configure, optimise and maintain the computer system
 - Disk and File System management Tools
 - Antivirus
 - Firewall
- Also a System Software



Utility Software - Example



Software Libraries

- Who defined printf?

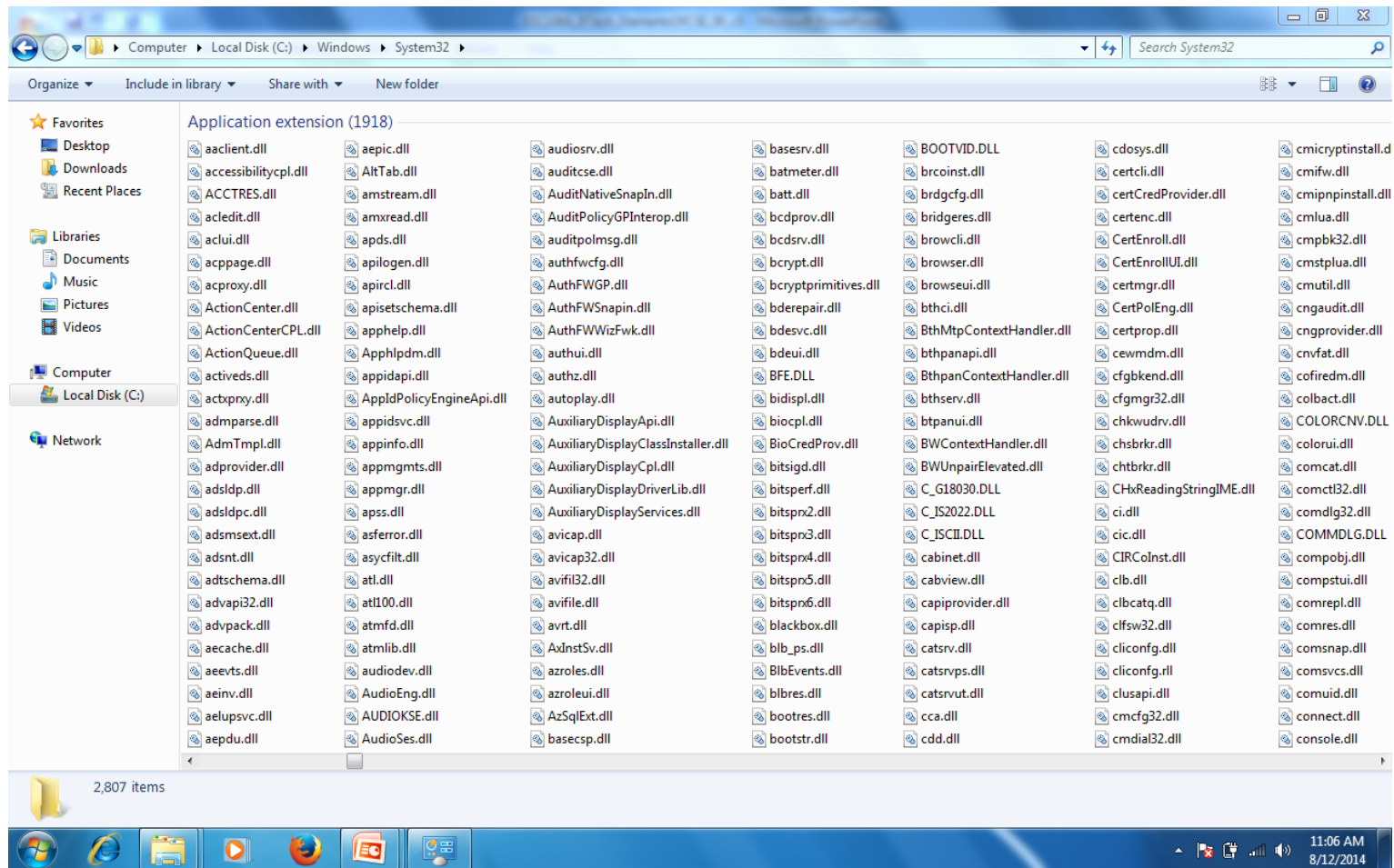


Software Libraries

- Provide functions
 - Used by many executables
 - Reduces code, increases reuse
 - DLLs in Windows
 - SO in Linux



Software Libraries - Example



Summary

- Computer software is divided in to two types: System software and Application Software
- Application software are the software used by the user
- System software manages the computer system and provides platform for applications to execute

