Types of application software:

Communication Database Graphics Financial

Publishing Spreadsheet Reference Word Processing

Main Purpose – how the software will be used

Functional Characteristics (15) – what it is capable of

Factors affecting the **choice** of software:

Compatibility

Processor and Operating System, Available Memory, Peripherals, Backing Storage, (File Formats)

Functionality

Cost

Factors affecting the **installation** of software:

CPU

OS

Peripherals

OS Configuration

Availability of RAM

Free Disc Space

Customisations

Productivity Ease of use Preferences

OS Customisations

Application Customisations

Menus, Toolbars, Keyboard, Dictionaries, Colours, etc

Legal requirements

Freeware

Demonstration Software

Shareware

Commercial Software

Single User/Volume/Network/Site License

Documentation

Installation/Tutorial/Reference Guide

On-line Help

Reference Guide/Wizards/Training

Advanced Features

Filing, Editing, Automation, Communication, Formatting, Proofing, OLE

Evaluating and **Comparing** software:

Cost

Compatibility

Processor and Operating System, Available Memory, Peripherals, Backing Storage, (File Formats)

Functionality

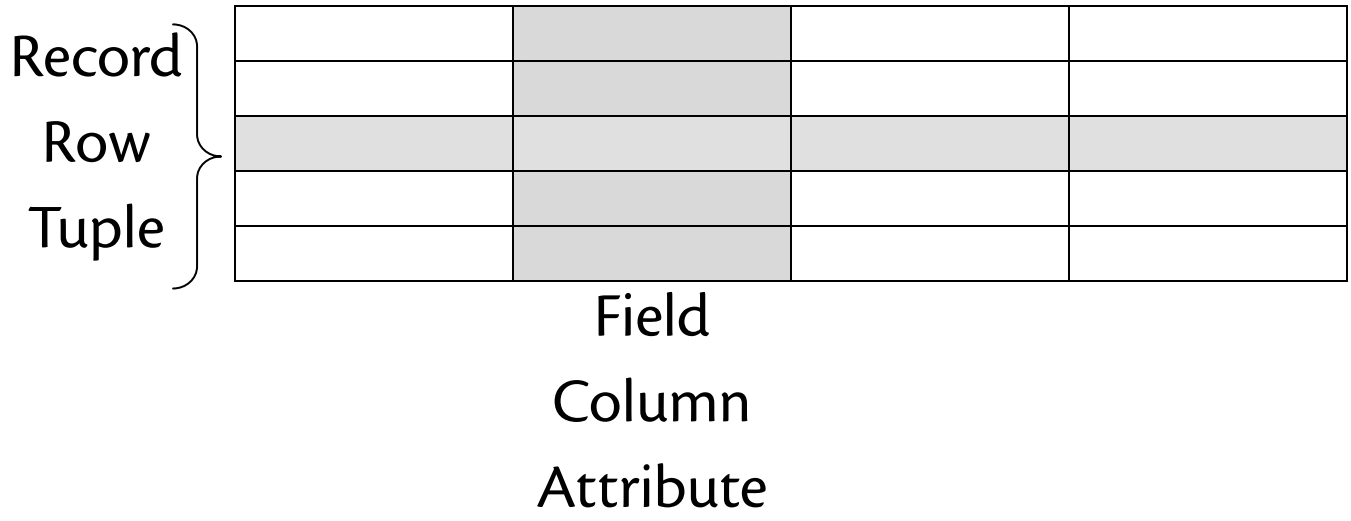
Ease of use (including user interface)

Speed

Contemporary developments

Speech-to-text	Embedded Hyperlinks	Embedded AI
Ease of use	Functionality	Productivity
Ethical redundancy of typists	**Legal** illegal content on Internet	**Social** poor spelling and grammar

File/Table/Relation



Relational Database

Should be Normalised, so improves integrity of data

Data is split into smaller tables, linked by relationships

Reports/queries on the data are very flexible

Validity Checks

Range, Presence, Restricted Choice/Existing Value

Normalising

1NF – Removes repeating groups

2NF – Removes partial dependencies on the primary key

3NF – Removes dependencies on non-key fields

Data

Raw facts and figures, appears unstructured

Information

Data given structure and context.
Meaningful, has value and cost.

Planning

A **plan** is created to meet certain **objectives**, defined by the **mission**. Plans must comply with **policies**.

Strategic – 3-5 years; little detail, wide scope

Tactical – 1-5 years; more detailed, limited scope

Operational – 1 day to 1 year; high detail, low scope

Control

Compare expected performance with actual measured results; effect input to make output more desirable.
Needed to respond to unexpected events.

Strategic – linked to planning, perhaps change plan

Operational – main function, results often quantifiable

Feedback – Single/Double Loop

Decision Making

Creating alternative options and selecting the best one

Intelligence → Design → Choice → Review

Programmed – Operational level, automated responses

Non-programmed – Higher management, non-routine

Certainty, Risk, Uncertainty

Education

Learning from past or present to improve future results

Characteristics of Information

Accessibility, Accuracy, Appropriateness, Completeness, Conciseness, Cost, Legality, Presentation, Structure, Timeliness, Value

External

Information from **outwith** the organisation, important at the **Strategic** level

Published Documentation, Social Contact, **Internet** (WWW) – consider Credibility, Accuracy, Reasonableness, Support

Internal

From **within** the organisation

Marketing and Sales info, Documentation (forms, etc)

Intranets

over LAN – better quality than WWW

improves **cost** (paper), **timeliness** (fast updating) and **accuracy** (one central version)

Media

Broadcast – one location to many users

eg TV, Teletext, Radio, Multicast (Internet)

Digital – stored or transmitted in binary

eg Internet/Intranet, CD, DVD, Digital Television, Video Conferencing

Electronic Data Interchange (EDI)

Reduces costs, saves time, improves accuracy and response times, allows integration

Paper – information on paper

eg Newspapers, books, letters, forms

Portable, no hardware/technical knowledge needed

But bulky, fragile and expensive

Social Implications

Working

new types of jobs created in "information handling"

Telecommuting allows more flexible work patterns and reduces traffic, but reduces social interaction and may cause decreased productivity due to distractions.

e-Divide

"information rich" have access to contemporary information sources, while the "information poor" don't

Ethical Implications

Netiquette – polite conduct on the Internet

Censorship

Boundaries are hard to define; may hinder freedom of speech. Should users be responsible for what they see? Should spam be censored?

Professional Bodies

Defining a common Ethical code, eg the BCS

Legal Implications

Data Protection Act

Data Controllers must – register with the DP Registrar, inform the Data Subject that data is being held, allow them access to the data, correct errors at Subject's request, keep the data secure.

Computer Misuse Act

Unauthorised Access – attempting to use/guess/obtain another person's password

Unauthorised Access with Intent to Commit an Offence – using the access to go on to commit another crime, eg robbery, blackmail.

Unauthorised Modification of Data – deleting another's files, introducing a virus, etc

Copyright, Designs and Patents Act

Covers all fixed creative works, eg literature, music, graphics, films, architecture

Does not cover works not in a fixed form, eg improvised speeches; names/slogans; ideas, procedures, etc; common property, eg calendars

Copyright is automatic, and lasts for the lifetime of the holder, plus and additional 50-75 years – rights can also be sold or bequeathed in a will

Public Domain – no copyright protection, and cannot be reinstated

The copyright has expired/been relinquished, or does not apply (eg US government documents)

Fair Use – allows access to copyrighted works

Not-for-profit; small portions; not detracting from holder's market