An Introduction to End-User Software Development

The Need for Application Software to Meet User and Business Requirements - 1

Application software should be:

- Efficient in its ***functionality***, for example, helping to solve problems, making decisions and improving system functions, such as automating regular processes, e.g. data entry
- ***User-friendly***, e.g. easy to operate

The Need for Application Software to Meet User and Business Requirements - 2

Application software should be (cont.):

- ***Reliable***, e.g. producing the correct results of database query
- ***Secure***, e.g. locking spreadsheet cells
- ***Maintainable***, e.g. modification of a spreadsheet

End-User Application Software - 1

- In Topic 1, we discussed the two main types of software - ***commercial*** and ***bespoke***.
- Application software can also be created and/or modified by an organisation's own non-programming/technical staff. This development method is described as: ***end-user development*** (EUD).

End-User Application Software - 2

- End-user application software is developed by end-users (EUs) of computer systems to be used by them in their day-to-day work and is often also used by their colleagues in the same department and/or in other departments.
- Applications developed by end-users are also described as ***User Developed Applications*** (UDAs).

Benefits of EUD

- Greater user involvement
- User has knowledge of the functionality of the system
- Good use of resources
- Less costly method
- Improved decision making
- More user satisfaction

EUD Disadvantages

- Inaccurate (EU lacks training)
- Lack of planning
- Can be slow
- Use of incorrect formulae
- Not secure
- Not tested
- Not documented

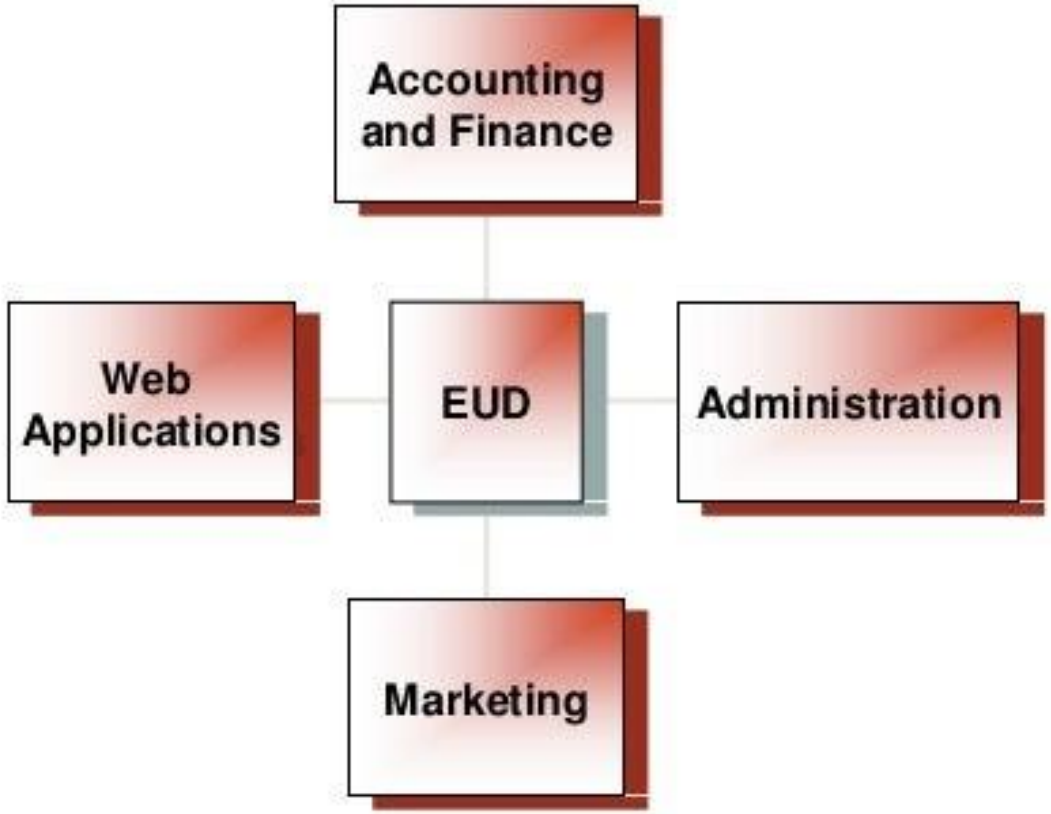
Software Tools Available for Developing Application Software Solutions

- Standard application software advanced functions in databases, spreadsheet and word processing
- Macros
- Visual Basic for Applications (VBA)
  - Macros and VBA refer to application software programming methods.

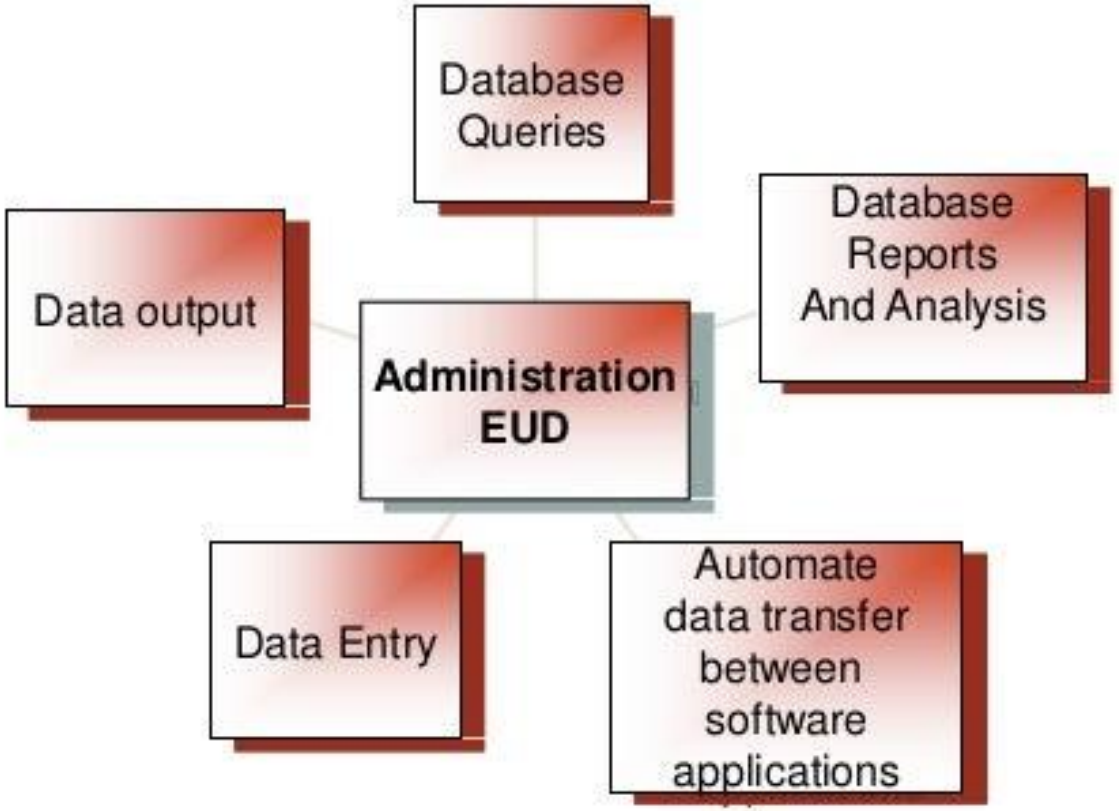
Which Organisations Use EUD?

- Mainly, but not exclusively, ***small to medium enterprises (SMEs)*** for small scale development, e.g.
  - Automating processes such as data entry and data output
  - Information management and retrieval
  - Facilitating data transfer between software applications, such as databases and spreadsheets
- Development can result from internal business processes, information systems and external business needs.

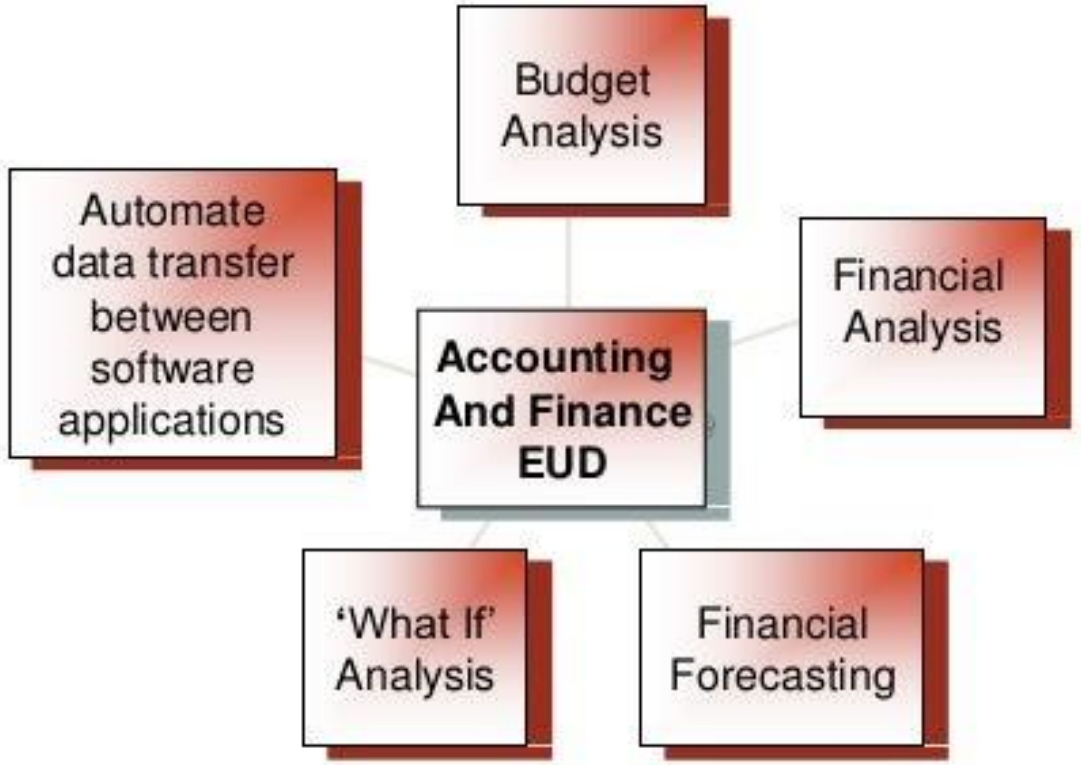
Business Processes that End-Users Develop



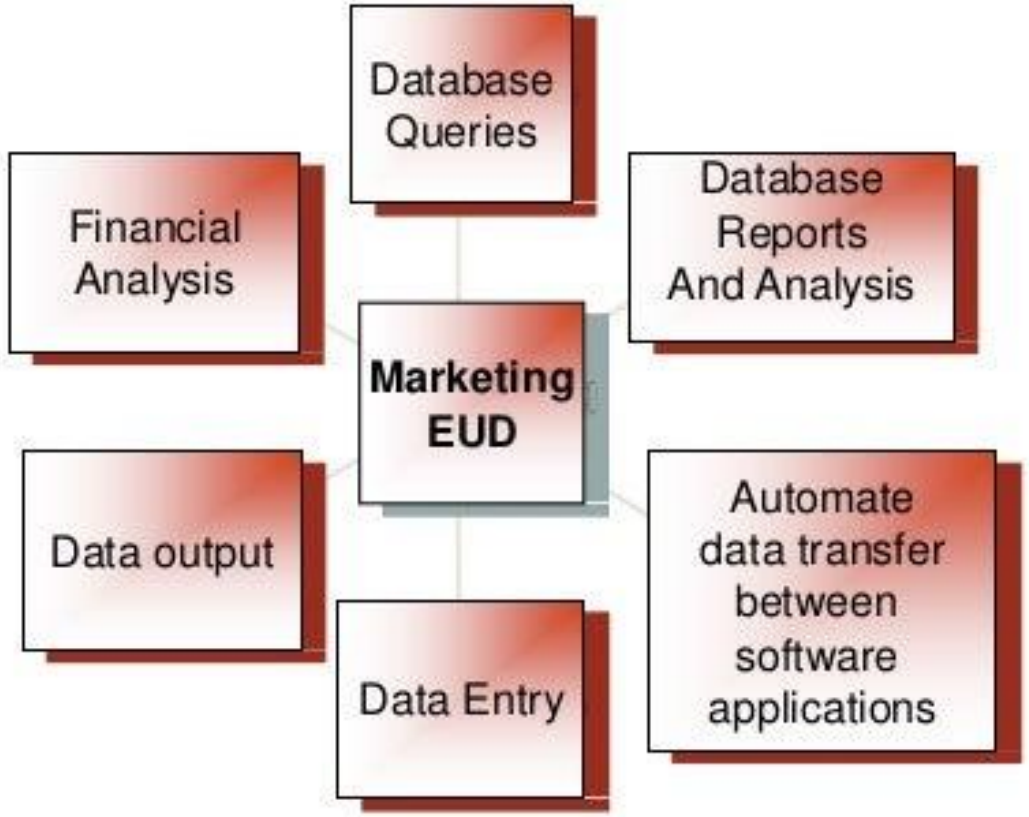
Administration EUD



Accounting and Finance EUD



Marketing EUD



Software Development Lifecycle

SDLC

SDLC
Requirements - 1

- The user should concentrate on ***what*** needs to be done as well as ***how*** it should be done and ***plan*** carefully their software development:
  - The task/problem should be ***analysed*** in detail and the user should understand clearly what needs to be done.
  - The user and business requirements must be identified clearly.

SDLC - 2

- A solution must be ***designed and development*** that meets all requirements.
- The solution and results should be ***tested*** thoroughly.
- The solution should be ***documented.***

Human Computer Interface Design

- ***Human Computer Interaction (HCI)*** refers to the interaction between users and the computer system that is enabled by using the hardware and software.
- Efficient HCI is necessary for usability of the system, e.g. the user should be able to interact with the system as simply and efficiently as possible.
- There are many aspects of HCI design, but we will concentrate on software interface design when developing our office solutions.

Human Computer Interface Design

- The text, phrases and concepts used to develop software is user friendly and user attractive.
- The software is consistent in terms of color layout, font used, etc.
- Flexible and more efficient to use and navigate.
- Site structure with various buttons and links are in hierarchal.
- Images used in software are in user prospective.
- Users' attention is created using suitable sound effects.
- Menus, Icons, Buttons used work properly

Software Interface Design

- ***Text*** (font type, font size, letter and line spacing, line length, justification, line endings, paragraph spacing)
- ***Colour*** (how it is used to draw attention, show meaning, etc.)
- ***Images*** (still and moving, how it is used to communicate, persuade, etc.)
- ***Sound*** (sound effects, music speech, how it is used to attract attention)

Software Display Design

EUD Guidelines

- EUs should be aware of and refer to the following guidelines when developing application software:
  - *ISO* 9126 Software Quality Characteristics [Available Online] http://www.sqa.net/iso9126.html

Microsoft Office Suite Interface Development

- We will look at the development of the Microsoft Office Suite Interface (2003 – 2010) and discuss:
  - changes in the interface layout
  - new features
  - updated features
  - what impact these changes have on EUD

References

- ISO 9126 Software Quality Characteristics [Available Online]
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- Trulock, V. (2008), *Understanding HCI,* [Available Online]
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Topic 2 – An Introduction to End-User Software Development

Any Questions?