MY REVISION NOTES

HODDER EDUCATION

Cambridge National

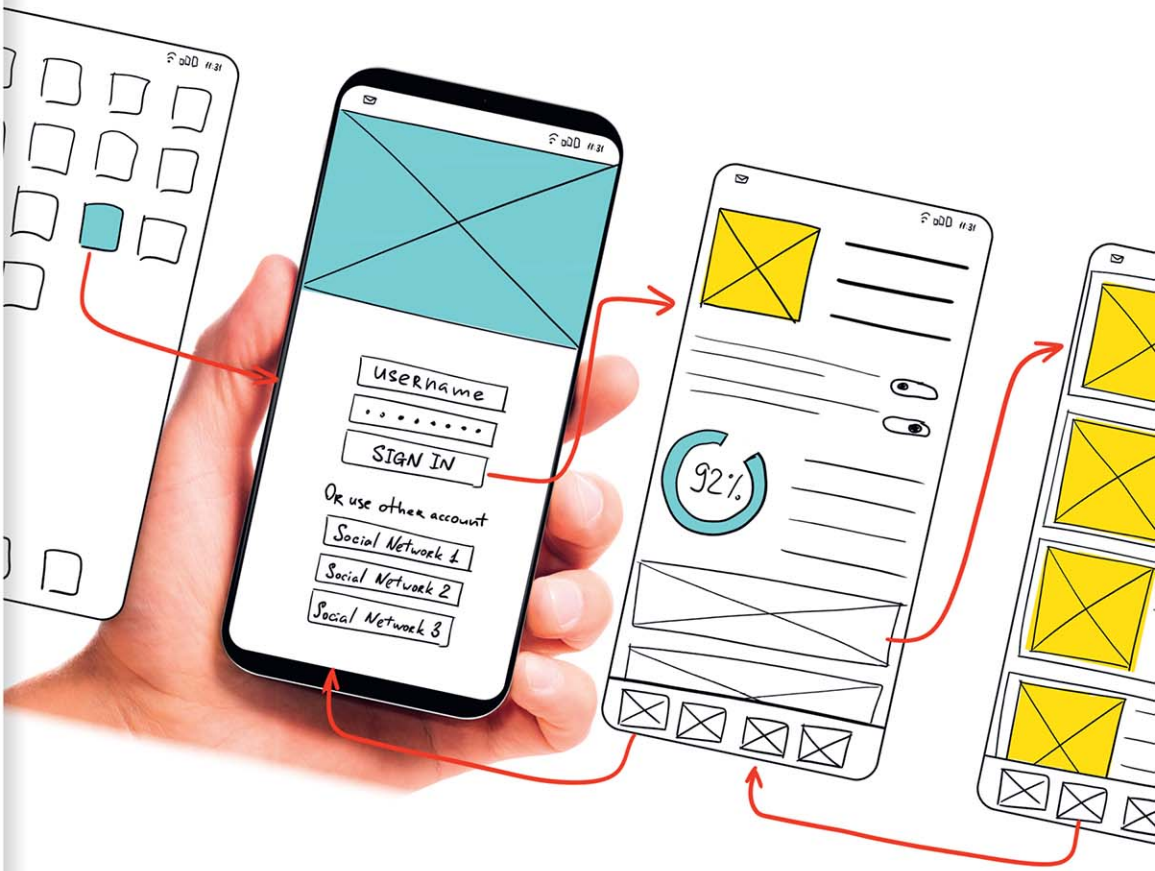
Level 1/Level 2

IT

SECOND EDITION

For the J836 specification

- Plan and organise your revision
- Reinforce skills and understanding
- Practise exam-style questions



Sonia Stuart

MY REVISION NOTES

Cambridge National Level 1/Level 2

IT

Boost

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My revision planner

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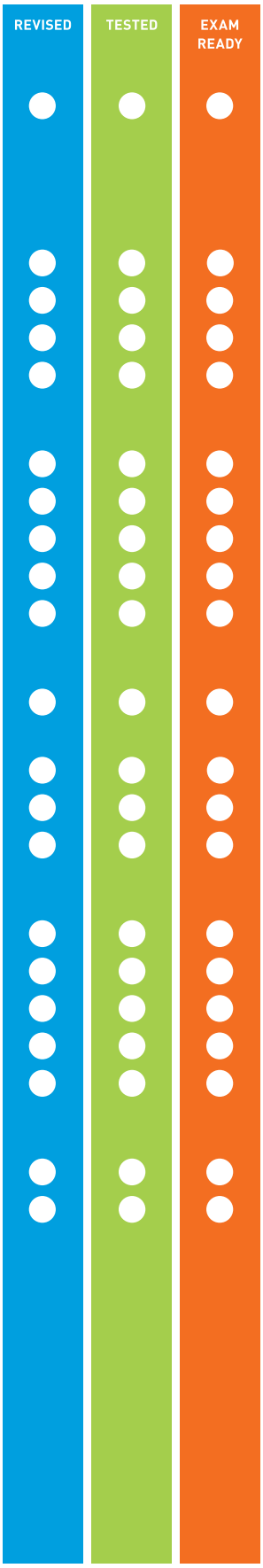

Countdown to my exam

6–8 weeks to go

- Start by looking at the specification – make sure you know exactly what material you need to revise and the style of the examination. Use the revision planner on page 4 to familiarise yourself with the topics.
- Organise your notes, making sure you have covered everything on the specification. The revision planner will help you to group your notes into topics.
- Work out a realistic revision plan that will allow you time for relaxation. Set aside days and times for all the subjects that you need to study, and stick to your timetable.
- Set yourself sensible targets. Break your revision down into focused sessions of around 40 minutes, divided by breaks. These Revision Notes organise the basic facts into short, memorable sections to make revising easier.

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4–6 weeks to go

- Read through the relevant sections of this book and refer to the exam tips, key terms, typical mistakes, summaries and exam checklist. Tick off the topics as you feel confident about them. Highlight those topics you find difficult and look at them again in detail.
- Test your understanding of each topic by working through the 'Now test yourself' questions in the book. Look up the answers at the back of the book.
- Make a note of any problem areas as you revise, and ask your teacher to go over these in class.
- Look at past papers. They are one of the best ways to revise and practise your exam skills. Write or prepare planned answers to the exam practice questions provided in this book. Check your answers at the back of the book and online at **www.hoddereducation.co.uk/myrevisionnotesdownloads**
- Try using different revision methods as you work through the sections. For example, you can make notes using mind maps, spider diagrams or flash cards.
- Track your progress using the revision planner and give yourself a reward when you have achieved your target.

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One week to go

- Try to fit in at least one more timed practice of an entire past paper and seek feedback from your teacher, comparing your work closely with the mark scheme.
- Check the revision planner to make sure you haven't missed out any topics. Brush up on any areas of difficulty by talking them over with a friend or getting help from your teacher.
- Attend any revision classes put on by your teacher. Remember, your teacher is an expert at preparing people for examinations.

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The day before the examination

- Flick through these Revision Notes for useful reminders, for example the exam tips, key terms, typical mistakes, summaries and exam checklists.
- Check the time and place of your examination.
- Make sure you have everything you need – extra pens and pencils, tissues, a watch, bottled water, sweets.
- Allow some time to relax and have an early night to ensure you are fresh and alert for the examination.

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My exams

Unit R050 paper

Date: .....

Time: .....

Location: .....

Exam breakdown

The exam lasts for 1 hour 30 mins and is worth a total of 70 marks. This may sound like a long time, but it goes very quickly when you are doing an exam.

This section shows you the different types of questions that may be included in your exam and provides some hints and tips about how to cope during the exam.

There are two sections in the paper. Section A is worth 15 marks and is made up of short answer questions with up to 5 multiple choice questions (MCQ).

Section B of the paper is worth 55 marks and will have a mix of short, medium and one extended response question. There will also be a creative question, worth 8 marks, where you will hand-draw/sketch a visual solution to a problem. Section B will be based on a scenario. This means that your answers to the questions will have to be applied to this scenario.

The exam will assess you on the Performance Objectives:
- PO1 – Recall knowledge and show understanding.
- PO2 – Apply knowledge and understanding.
- PO3 – Analyse and evaluate knowledge, understanding and performance.

Types of exam questions and how to answer them

All exam questions use a command word, such as 'Identify' or 'Describe'. You must recognise these, as these words determine what you are required to do to be awarded the allocated marks.

The main command words used are listed below, along with a sample question that uses each. The allocated marks are shown in brackets [ ] at the end of the answer lines.

State, give, identify

You should answer these questions with a single word or phrase. These questions can also be presented as a multiple choice where you have to select the correct answer from a list.

Identify **one** type of mind map. [1]

The answer could be one from:
- Library (1)
- Tunnel timeline (1)
- Presentation (1)

Note how the word **one** is in bold; this is to tell you how many answers are needed.

Describe

This keyword is moving to a higher level of difficulty. These answers are usually allocated 2 marks, but sometimes more. If a context is given in the question, you need to provide an answer that matches that context.

Describe **one** characteristic of data. [2]

The answer could include:
- Data has no meaning (1)
- Data is raw facts and figures (1) before they have been processed (1)
- Data can be made up of letters, numbers, symbols, graphics and/or
- sound (1)

Remember the '**one**' is in bold, so you need to provide one characteristic in your answer.

Typical mistake

Do not simply answer a question with 'quicker', 'cheaper', 'easier'.

These words must be expanded to provide details. For example, 'easier for a novice user to create a document' may be awarded marks, but 'easier' on its own would not.

Identify and describe, Identify and justify

These keywords are asking you to do two steps in your answer. The first step is to identify, with the second step being to describe or justify what you have just identified.

You need to provide a correct identification before you can be considered for the marks allocated for the rest of the question.

Identify and describe **one** type of malware. [3]

The answer could include:

- Ransomware (1st mark) holds a computer system captive (1) and demands money to release it (1)
- A Trojan horse (1st mark) is a standalone malicious program (1) designed to give full control of an infected PC to another PC (1)

There are other sensible answers that could be accepted.

If you look at the answers you will see that the 1st marks are noted. These marks are for the identification of the malware. Remember, without being awarded this mark, you will not be able to be awarded the other 2 marks allocated to the question.

Remember the **one** is in bold, so you need to identify and describe one type of malware in your answer.

Explain

This keyword is moving to a higher level of difficulty than a 'Describe' question. These answers are usually allocated 2 or 3 marks, but sometimes more. If a context is given in the question, you need to provide an answer that matches that context.

An HCI has been created for a database digital platform. Explain **two** advantages to the user of using a keyboard and mouse to interact with the HCI. [4]

Remember, the **two** is in bold so you need to provide two effects in your answer. The answer could include:

- The users will not have to learn the layout of a keyboard (1) as it will be familiar as all keyboards have the same basic layout. (1)
- Using a mouse to select the option required can be precise (1) meaning the chances of selecting the incorrect option is reduced. (1)

There are other sensible answers that could be accepted.

Discuss

This keyword requires you to write an essay. This should be written in continuous prose; writing a list will limit the marks an examiner can award you. You may be asked include a justification in your answer.

Discuss how access rights and permissions could be used to protect computer systems, files and folders. [9]

The answer could include:

- Access rights are based on the username and password of a user.
- Groups can be set up based on the usernames.

- Permissions are set based on the username.
- Permissions include read, write, edit and delete.
- Files and folders can have permissions set.
- Read-only permissions can be set on files and folders so the contents cannot be altered.

There are other sensible answers that could be accepted.

Typical mistake

The most common mistake on 'Compare' questions is to write about one of the alternatives in one paragraph and the second alternative in a different paragraph. To be awarded the marks available it must be clear that you have made comparisons. Use words such as 'however', 'and' and 'but' to do this.

Compare

For this keyword you need to write about two ways of dealing with a situation. You need to describe the good and bad features of each alternative.

A leaflet advertising a music event needs to be created.

Compare the use of word-processing and DTP software for this task. [4]

The answer could include:

- DTP software includes frames so that the different components can be placed in a specific place on the leaflet. In contrast, word-processing software has guides that mean the components may not be placed exactly where the creator wants them.
- Templates are available in DTP and word-processing software, but the templates included in DTP software would be more appropriate for creating a leaflet.
- DTP software uses WYSIWYG so the leaflet on the screen will be seen exactly as it would be printed out. Word-processing software can sometimes print out documents slightly differently to how they appear on screen.

There are other sensible answers that could be accepted.

The creative question

The exam paper will include one creative question, worth 8 marks, where you will have to create a solution to a problem. The question will provide requirements related to:

- the type of solution needed
- layout and structure
- annotation.

When you are creating your solution, it is important that you keep referring back to the defined requirements so that your solution meets these.

In the examination

There are some techniques that you could use in the examination room to help you do the best you can.

- Read the whole paper, checking both sides of the page so that you don't miss anything.
- Make sure that the examiner will be able to read your handwriting. If the examiner cannot read your answer, then they cannot award you marks.
- One mark per minute – if a question is worth 2 marks, then do not spend more than 2 minutes writing the answer. If too much time is spent on the first part of the exam, then later questions will be rushed and marks lost because time has been wasted.

- Focus on the question you are answering – forget the last question. Concentrate on reading the current question and structuring the best answer you can to match the keyword. Some students go wrong in a question, and this disturbs their concentration for several more questions. Try to focus and forget!
- Take that extra bit of time to think about your answer before you start to write.
- If you do need to cross anything out, be organised. Use a single line and then calmly write a second answer.
- Always carefully read what you have written – is it exactly what you need to say? The words used and their order can make a difference, so take care. You need every mark.

A last note

Examiners are nice people who would like to give you the marks, but they cannot read your mind! As you write your answers, think about what the examiners will read from your response.

Topic area 1: Design tools

There are different design tools that can be used to design a solution.

Which design tool is used will depend on the product, resource or system being designed. More than one design tool may be used to create designs for a product, resource or system.

1.1 Types of design tools

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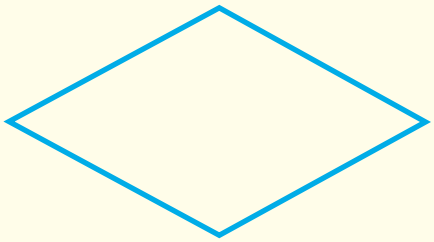
There are four design tools you need to learn about:

- flow charts
- mind maps
- visualisation diagrams
- wireframes.

Flowcharts

- Are used to show the steps, decisions and outputs in a process.
- Can be used to create a simple diagram of all the steps that need to be carried out in a project.
- Begin with a 'Start' box, with the end of the process being shown by an 'End' box.
- Each task is set out in the proposed sequence – the order in which the tasks have to be completed.
- Give no indication of the timescale for each task.

Table 1.1 Flow chart symbols

Symbol	Components	Use
	Connecting lines with directional arrows	Shows the flow through the process being shown by the flow chart
	Decision	Shows when a decision has to be made during the process. Two lines must come out of a decision box: + Yes/No or + True/False
	Start/End	Shows the start and end of the process being shown by the flow chart
	A step or process	Shows what is done at any specific step, for example: price x quantity = total cost
	Input/Output	Shows an Input or Output. This can be by a user or automated, for example, a report or invoice.

Mind maps

- Can also be called spider diagrams.
- The subject, topic or idea in the centre is the central node or theme.
- Other tasks, related ideas or information branch off the central node: these are called nodes.
- Each related idea may then have further information or ideas branching from them: these are called sub-nodes.
- The central node, nodes and sub-nodes are connected by lines (known as branches).
- The central node, nodes and the sub-nodes should include a word and/or an image.
- Each node can have many branches coming off it.

The **components** of a mind map are:

- nodes
- sub-nodes
- connecting lines (branches)
- key words
- colours
- images.

There are three different types of mind maps:

- **Library:** sorts and organises information to provide a clear understanding of a topic.
- **Tunnel timeline:** mainly used for problem solving. The central node is the outcome or problem that needs to be solved. The nodes and sub-nodes show the paths that need to be taken to solve the problem.
- **Presentation mind maps:** used to present ideas to an audience. The focus is the audience, so the mind map should be laid out in a way that the audience can understand.

Typical mistake

It is important to select the most appropriate planning tool(s) for a particular product/scenario because each planning tool has a different purpose. To select the most appropriate planning tool, make sure that you consider the product, the purpose of the product, the target audience and any client requirements.

Visualisation diagrams

- Are a rough drawing or sketch of what a final product will look like.
- Are used to visually plan the layout of a static product.
- Cannot be used for a product that has a timeline.
- Can show the format and layout of outputs from a product, such as a report.
- A graph is a visualisation diagram for numerical data.

The **components** of a visualisation diagram include:

- multiple images/graphics
- size and position of images/graphics
- position and style of text
- fonts
- labels/annotations including:
  - size/style of text
  - font
  - size/style of text images/graphics
  - size of other elements
- colours
- themes.

Wireframes

- A plan of what is to be designed.
- Focus on what the product will do, rather than what it looks like.
- Show the outline or the frame of the design before detailed designing begins.
- Include all the required elements but not the elements details.
- Are a layout design tool, meaning changes can be quickly and easily carried out before creation.

There are two types of wireframe:

- low-fidelity
- high-fidelity.

Low-fidelity wireframe A wireframe that uses basic shapes and image placeholders with limited specific details.

High-fidelity wireframe A wireframe that shows actual content, fonts, colours, image dimensions and branding.

A **low-fidelity** wireframe:

- includes boxes showing the position of basic content, images and interactive elements, with no specific details
- uses basic shapes, image placeholders, and generic 'lorem ipsum' text to show the draft layout of the product. (Lorem ipsum text is dummy text without meaning that shows where text should be placed.)
- is usually created in greyscale rather than colour
- does not show the functionality of any interactive elements, such as drop-down lists
- is usually a hand-drawn sketch but could be created using software.

The **components** of a **low-fidelity** wireframe are:

- Boxes
- Box labels
- Image placeholders
- Layout grid

A **high-fidelity** wireframe:

- shows the product in more detail, such as fonts, colours, images text and branding (e.g. logos)
- is usually created using software to show any user interaction functionality, such as drop-down lists.

A **high-fidelity** wireframe also includes:

- Branding, for example, logos
- Colours
- Fonts
- Text
- User interaction functionality

Exam tip

Make sure you know the components and purpose of each design tool.

Check your understanding

1. Identify **two** components of a flow chart.
2. What are the **three** different types of mind map?
3. What can a visualisation diagram not be used for?
4. What are wireframes?

MY **REVISION** NOTES

Cambridge National Level 1/Level 2

IT

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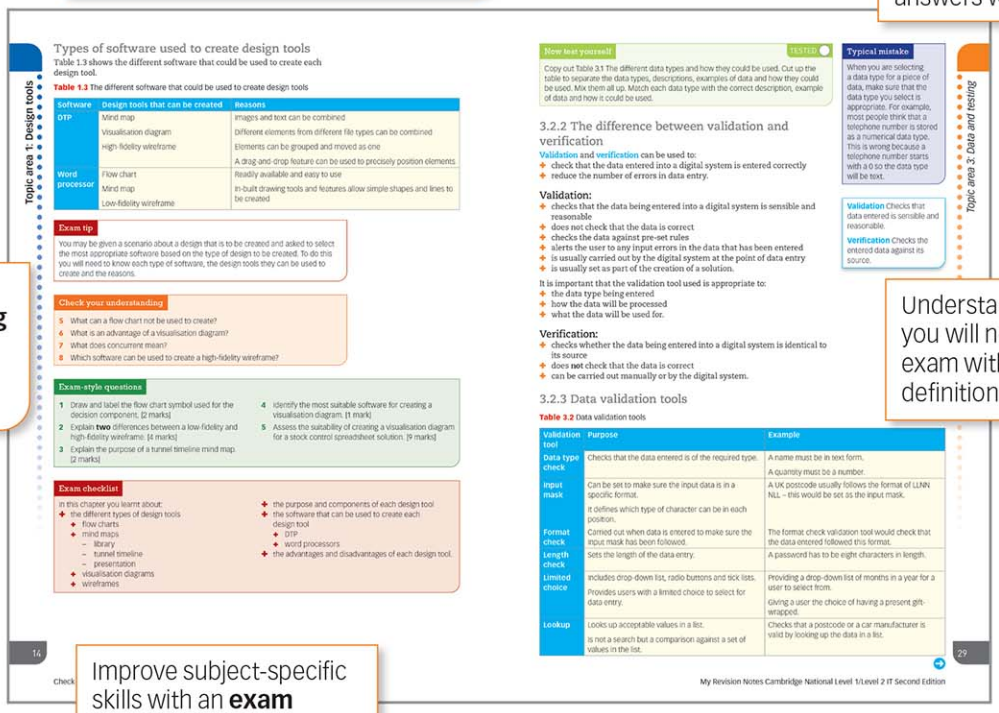
Avoid **typical mistakes** and enhance your exam answers with **exam tips**

Check your understanding as you work through the course



Types of software used to create design tools

Table 1.3 shows the different software that could be used to create each design tool.

Table 1.3 The different software that could be used to create design tools

Software	Design tools that can be created	Reasons
DTP	Mind map	Images and text can be combined
	Visualisation diagram	Different elements from different file types can be combined
	High-fidelity wireframe	Elements can be grouped and moved as one
		A drag-and-drop feature can be used to precisely position elements
Word processor	Flow chart	Readily available and easy to use
	Mind map	In-built drawing tools and features allow simple shapes and lines to be created
	Low-fidelity wireframe	

Exam tip

You may be given a scenario about a design that is to be created and asked to select the most appropriate software based on the type of design to be created. To do this you will need to know each type of software, the design tools they can be used to create and the reasons.

Check your understanding

5 What can a flow chart not be used to create?
6 What is an advantage of a visualisation diagram?
7 What does concurrent mean?
8 Which software can be used to create a high-fidelity wireframe?

Exam-style questions

1 Draw and label the flow chart symbol used for the decision component. [2 marks]
2 Explain **two** differences between a low-fidelity and high-fidelity wireframe. [4 marks]
3 Explain the purpose of a tunnel timeline mind map. [2 marks]
4 Identify the most suitable software for creating a visualisation diagram. [1 mark]
5 Assess the suitability of creating a visualisation diagram for a stock control spreadsheet solution. [9 marks]

Exam checklist

In this chapter you learnt about:
- the different types of design tools
  - flow charts
  - mind maps
    - library
    - tunnel timeline
    - presentation
  - visualisation diagrams
  - wireframes
- the purpose and components of each design tool
- the software that can be used to create each design tool
  - DTP
  - word processors
- the advantages and disadvantages of each design tool.

Topic area 1: Design tools

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Now test yourself TESTED

Copy out Table 3.1 The different data types and how they could be used. Cut up the table to separate the data types, descriptions, examples of data and how they could be used. Mix them all up. Match each data type with the correct description, example of data and how it could be used.

3.2.2 The difference between validation and verification

Validation and **verification** can be used to:
- check that the data entered into a digital system is entered correctly
- reduce the number of errors in data entry.

Validation:
- checks that the data being entered into a digital system is sensible and reasonable
- does not check that the data is correct
- checks the data against pre-set rules
- alerts the user to any input errors in the data that has been entered
- is usually carried out by the digital system at the point of data entry
- is usually set as part of the creation of a solution.

It is important that the validation tool used is appropriate to:
- the data type being entered
- how the data will be processed
- what the data will be used for.

Verification:
- checks whether the data being entered into a digital system is identical to its source
- does **not** check that the data is correct
- can be carried out manually or by the digital system.

3.2.3 Data validation tools

Table 3.2 Data validation tools

Validation tool	Purpose	Example
Data type check	Checks that the data entered is of the required type.	A name must be in text form.
		A quantity must be a number.
Input mask	Can be set to make sure the input data is in a specific format.	A UK postcode usually follows the format of LLNN NLL – this would be set as the input mask.
	It defines which type of character can be in each position.	
Format check	Carried out when data is entered to make sure the input mask has been followed.	The format check validation tool would check that the data entered followed this format.
Length check	Sets the length of the data entry.	A password has to be eight characters in length.
Limited choice	Includes drop-down list, radio buttons and tick lists.	Providing a drop-down list of months in a year for a user to select from.
	Provides users with a limited choice to select for data entry.	Giving a user the choice of having a present gift-wrapped.
Lookup	Looks up acceptable values in a list.	Checks that a postcode or a car manufacturer is valid by looking up the data in a list.
	Is not a search but a comparison against a set of values in the list.	

Typical mistake

When you are selecting a data type for a piece of data, make sure that the data type you select is appropriate. For example, most people think that a telephone number is stored as a numerical data type. This is wrong because a telephone number starts with a 0 so the data type will be text.

Validation Checks that data entered is sensible and reasonable.

Verification Checks the entered data against its source.

Topic area 3: Data and testing

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