Oxford Cambridge and RSA Examinations

OCR GCSE INFORMATION AND COMMUNICATIONS   **1995**
TECHNOLOGY B

EXEMPLAR COURSEWORK TASKS:
THE USE OF ICT IN THE HEALTH SERVICE

EXTENSION TASK: SELF DIAGNOSIS

The documents provide examples of tasks for use in delivering Unit 3 of ICT B 1995. The task allows candidates to gain experience of a number of software packages.

You may adapt these tasks to suit your candidates or you may set your own. It is recommended that the tasks are based on The Use of ICT in the Health Service.

These coursework tasks are centred on an imaginary newly built Health Centre/Group Practice.

The Self Diagnosis task gives guidance as to where the criteria can be met but leaves it open to teachers and pupils to find there own way through the activity.

The assignments offer guidance only as to the types of activities that candidates might wish to undertake to fulfil the requirements of the coursework units. In completing the assignments, candidates must identify the data requirements, select the correct hardware and software and design a system that would be appropriate in the set context. Candidate portfolios will be assessed in accordance with the marking criteria for internally assessed work outlined in the specification.

A guide to the tasks is included. The contents of the exemplar work should not be divulged to candidates. The exemplar work is intended as a working document to aid Centres' delivery of the course.

ICT B Contexts

The new context for ICT B 1095/1995 is the Use of ICT in the Health Service. To help teachers plan for future years' provision the contexts are set out below.

Year	Session	Unit	Type	Context
2006	January	2378 & 2379	Coursework	Use of ICT in the Health Service
2006	January	2380	Examination	Use of ICT in the Health Service
2006	June	2378 & 2379	Coursework	Use of ICT in the Health Service
2006	June	2380	Examination	Use of ICT in the Health Service
2007	January	2378 & 2379	Coursework	Use of ICT in the Health Service
2007	January	2380	Examination	Use of ICT in the Health Service
2007	June	2378	Coursework	Use of ICT in the Health Service **or** Using ICT to aid Travel *
2007	June	2379	Coursework	Use of ICT in the Health Service
2007	June	2380	Examination	Use of ICT in the Health Service

Analysis AO2a

- The Howard Health Centre is a new purpose built Health Centre

- The HHC has moved from a manual wage slip system to an automated one

- It has also gone from paper files on patients to digital files on patients

- It has also designed its own Web Site.

They now want to design an interactive self-diagnosis system for the patients in the reception room.
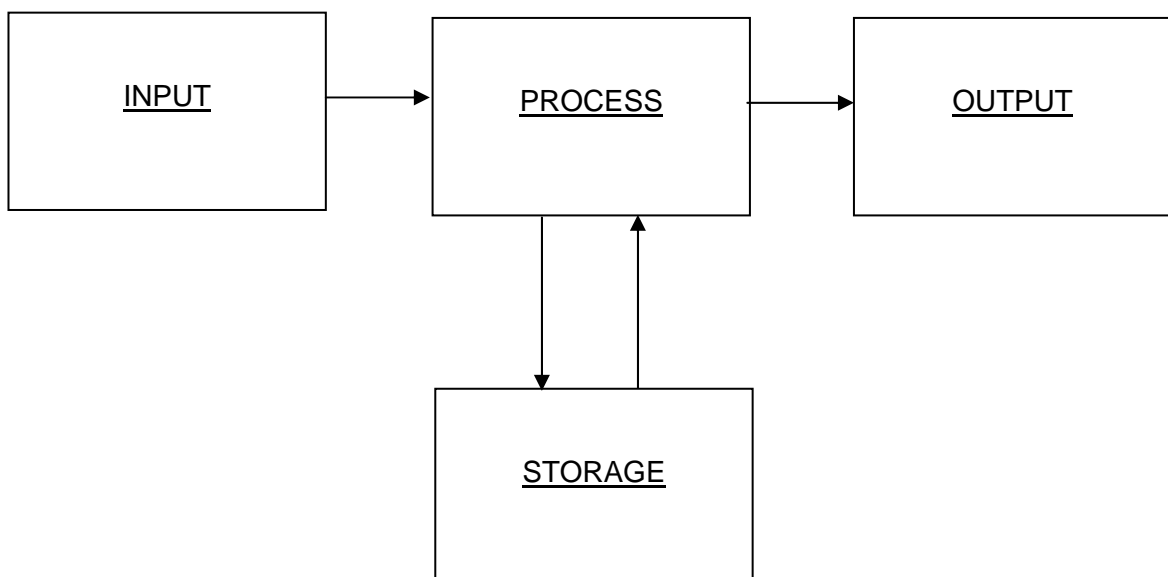
Research

Check out other "expert systems" or other self diagnosis systems.

Research the symptoms of the top 10 illnesses for the area.

Transfer that information into a Yes / No format.

Hardware Used AO1a/b/d/e

Hardware is the term used to describe all the actual pieces of equipment in a computer system.

```
┌──────────┐      ┌──────────┐      ┌──────────┐
│  INPUT   │ ───▶ │ PROCESS  │ ───▶ │  OUTPUT  │
└──────────┘      └──────────┘      └──────────┘
                       │  ▲
                       ▼  │
                  ┌──────────┐
                  │ STORAGE  │
                  └──────────┘
```

Input Devices are used to transmit data to the CPU from outside the computer.

Examples include:

A Keyboard
An OMR
A Touch Screen – Input and Output
A Mouse
A Tracker Ball
A Scanner
Digital Camera

My Choice
What did you use and why?

Output Devices receive information from the CPU and change it into a form, which can be understood by humans. Examples include –

A monitor
A Printer
A flatbed plotter
A speaker

My Choice
What did you use and why?

Storage Devices
Other types of storage devices are known as backing stores. They hold data outside the central processing unit. Although access to backing stores is slower, they provide non-volatile storage.

Examples include:

Hard Disk
Floppy Disk
CD
DVD
Magnetic Tape

My Choice
What did you use and why?

Compare and Contrast

For each category compare and contrast with alternative hardware.

Software Used AO1a/c

When designing the self diagnosis system I used PowerPoint.

Describe the features of Powerpoint used.

INPUTTING DATA AND THE NEED FOR ACCURACY AO1d

INPUT DEVICES

When the data is entered into the computer it is important that it is entered correctly and that the information is up to date. If this information is inaccurate then this could cause problems for patients.

For example - If hyperlinks do not work properly then some pages might never be viewed.

There are two methods that can be used to check data has been entered correctly, these are verification and validation.

Verification

A verification check is designed to make sure data entered or transferred from one medium to another has been copied accurately. There are various ways of verifying data on input or transfer. When data is entered at a keyboard, verification is often achieved by having the data typed in twice.   When data is entered by keyboard, two operators are asked to enter the same data. These two versions can then be compared and if they match the data is stored. Also the data can be verified by proof reading it to find any errors.

Verification of my web site

I will check the data on my web site is correct by proof reading it. I will also use the spellchecker to help find mistakes. Having two people enter the data would be very time consuming. I will check that hyperlinks work correctly by checking every hyperlink on every page.

Validation

Validation checking is carried out on the software to make sure it is sensible and will cause no problems when it is processed.

Different types of validation are carried out to check different types of errors.

Type checks make sure that numeric data does not contain letters such as 'O', which takes the place of zero, but this is not noticed when it is verified.

A range check is used to make sure that data is inside a fixed set of values e.g. a date of birth might have to be between 1900 and the present date. It can be used on letters as well as numbers.

A presence check makes sure that a value has actually been entered in a particular field. This type of check may also be used to make sure that a particular bit of data has been entered.

Check digits are used to check numeric data especially where large digits are being entered. Check digits are present in barcodes and also account numbers.

Documentation AO2d

Produce a User Guide.
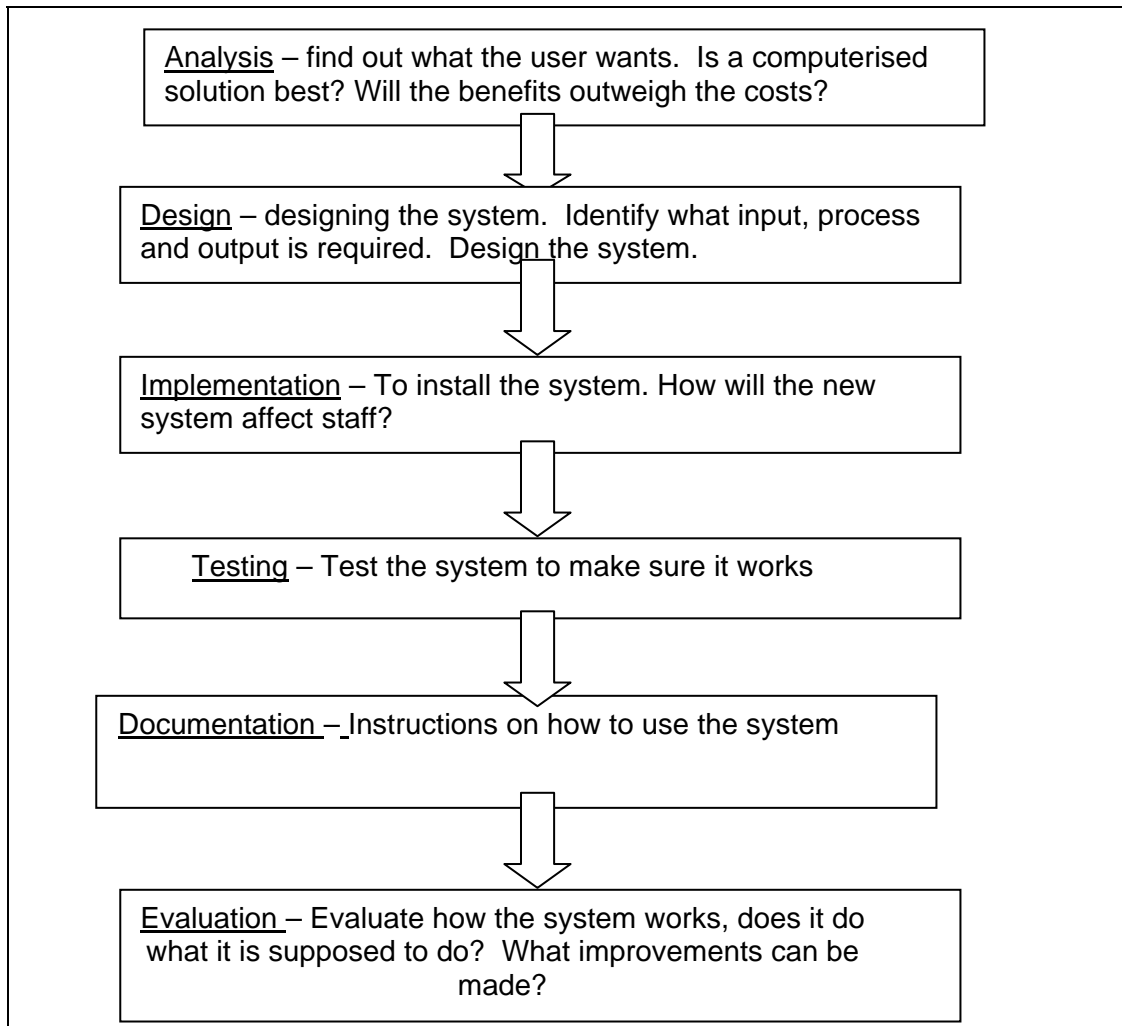Include some technical information.
Ask a friend/teacher to test it giving written feedback.
Refine your User Guide using those comments.

Some self annotation would help here.

Designing a system

When designing a system there are various stages of design

Analysis – find out what the user wants. Is a computerised solution best? Will the benefits outweigh the costs?

Design – designing the system. Identify what input, process and output is required. Design the system.

Implementation – To install the system. How will the new system affect staff?

Testing – Test the system to make sure it works

Documentation – Instructions on how to use the system

Evaluation – Evaluate how the system works, does it do what it is supposed to do? What improvements can be made?

Design Implementation and Testing AO2b

Show how you linked the pages to each other.

Making sure that no illness was given the wrong diagnosis.

Annotate all your planning and refinement.

AO3

Describe the benefits and drawbacks of using ICT in the set context and critically appraise your own use of ICT.

AO4

Consider the effects of the use of ICT in the wider world and show understanding of those effects.

For example look at the impact of ICT on Banking, Personal Communication, Community Activities and on people with Particular Special Needs.