OCR
Oxford Cambridge and RSA

OCR-set Assignment

Cambridge National Certificate in Information Technologies

Learner Assessment Material

OCR Level 1 / 2 Cambridge National Certificate in Information Technologies

Assessment Unit R013: Developing technological solutions

FOR USE IN THE JANUARY 2022 EXAMINATION SERIES ONLY

Centres must not change any aspect of this assignment.

INSTRUCTIONS TO TEACHERS

- Teachers should read the teacher guidance document before delivering this set assignment
- Please refer to the specification for specific requirements when delivering this set assignment
- This work **must** be completed by 10 January 2022

The OCR administrative codes associated with this unit are:

- Unit entry code R013
- Certification code Certificate J808

The regulated qualification number associated with this unit is:

- 603/1311/0

Duration: Approximately 20 hours

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Contents

	Page Number(s)
Candidate Instructions and Information	**3**
Set Assignment Brief	**5**
Your Task	**6**
Candidate Assignment Checklist	**13**
Initiation and planning	**13**
Data manipulation	**13**
Information presentation	**14**
Evaluation	**14**

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Candidate Instructions and Information

Candidates must be familiar with the following instructions and information before commencing the set assignment

How do I complete the assignment?

- You should try to complete all of the assignment.
- The assignment says what you need to do for each task.
- There is a checklist for you to use at the end of this document. This will help you to track the evidence you need to produce.
- You **must** complete the assignment on your own. You are not allowed help from anyone else.
- If we think that you had extra help, your marks may be changed or reduced to zero.

How is the assignment marked?

- Your teacher will mark your work after you hand it in. They cannot mark it in stages for you.
- Your teacher will use the mark scheme that we give them to give you marks.
- You can ask to see the mark scheme – and you can have the mark scheme explained to you.
- The mark scheme has three bands.
- Your teacher decides which mark band your work meets, and then gives you a mark from that mark band.

	Mark Band 1			Mark Band 2			Mark Band 3			
Marks	1	2	3	4	5	6	7	8	9	10

- Your teacher will then add up the marks and give you a total.
- Your final grade for the assignment depends on your final total mark.

What help can my teacher give me?

Your teacher can:

- ✓ read the assignment to you
- ✓ help you understand what you need to do
  - e.g. explain the difference between **Explain** and **Evaluate**
- ✓ give you some general help if you get stuck
- ✓ explain the mark scheme
- ✓ give general advice and guidance
- ✓ remind you about what you have been taught
- ✓ remind you of the content expected.

Your teacher cannot:

- ✗ tell you what to do
- ✗ tell you how to do it
- ✗ help you to solve a problem
- ✗ give you templates or solutions
- ✗ say how to improve your work
- ✗ mark your work in sections and give feedback.

What if I get stuck?

- You can ask your teacher to explain the task again.
- Move on to another part of the assignment.
- Come back again later to have another go.

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What is plagiarism and referencing?

- Plagiarism is where you use someone else's work or ideas, but do not say you have done so.
- Plagiarism is very serious.
- If you plagiarise, you may be given 0 marks for this unit, or fail the whole qualification.
- You **must** always say when you use someone else's work or ideas – this is called referencing.
- Examples of when you may need to reference are:
  - using ideas from a book
  - using some research from the internet
  - copying something someone says – like a quote.
- When you hand in your work, you will be asked to sign a form.
- This form says that all the work you have done is your own, and that you have referenced all the resources you have used.

Using online resources/the internet

You should:	You must not:
✓ search for techniques not solutions ✓ reference any websites/sources you use ✓ develop these ideas into your own words ✓ show that you have created new ideas.	✘ simply copy and paste ideas ✘ discuss live tasks online in chat rooms, etc. ✘ post your work to any online channels ✘ use the internet to work outside of lessons.

Can I work in a group?

- No, all the work you produce **must** be done on your own.

How should I present and save my work?

- You will use many different software packages in your work.
- Your work will be sent to the exam board electronically.
- The Candidate Assignment Checklist shows you examples of the file types you can use.
- You should choose suitable programs that allow you to meet the marking criteria.
- You **must** use filenames which make your evidence easy to find.
- As you develop your solution, use "Save As" to create a new file
  - e.g. MySpreadsheet_v1 & MySpreadsheet_v2.

What do I do when I have finished?

- Make sure that you have saved all your work.
- Your files should have sensible names.
- Make sure your work does not contain any personal information of real people (e.g. date of birth).
- Make sure that your name, candidate number, centre number and page numbers are on your work.

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Set Assignment Brief

You must read the complete assignment before starting to generate evidence for each of the tasks and sub-tasks.

Software Types
To complete this project, you will need to use a range of software types. When choosing software type(s) to use you **must**:
- read the tasks carefully
- consider the requirements of Progress Cyber Ltd.
- select the software that will allow you to meet these requirements.

Folder Structure
As you produce evidence for this set assignment you should create four folders that you will name:
- Initiation and Planning
- Data Manipulation
- Information Presentation
- Evaluation

IMPORTANT
You **must** refer to the marking criteria. Your teacher can explain the marking criteria if you need further clarification.

The Scenario

Progress Cyber Ltd. provides 'white hat hacking' services to businesses. It identifies vulnerabilities in hardware, software and networks. It also provides advice and guidance to businesses on how they can mitigate any vulnerabilities in their IT systems.

Progress Cyber Ltd. is launching a new marketing campaign to promote its services. This will include attending various exhibitions in the United Kingdom (UK).

Progress Cyber Ltd. requires an integrated IT system to:
- store client information
- store statistical information on cyber-security attacks on businesses
- include statistical information in presentation material
- produce letters to clients promoting the services it offers.

The integrated IT system **must** enable the end user to:
- access the system using a password
- navigate the system via a menu
- add new client records
- update client records
- search client records
- send letters to clients promoting services
- calculate predicted cyber-security attacks on businesses.

Progress Cyber Ltd. also requires:
- a presentation to be used at exhibitions which includes statistical information shared in a visual format
- an information guide for businesses to share with their employees providing advice on how to stay safe online.

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Your Task

For the purpose of this set assignment all data is fictitious and must not be amended.

You **must** follow the project lifecycle to plan and develop a fully working integrated IT system for Progress Cyber Ltd.

Task 1 – Initiation and Planning

- You **must** initiate and plan the project to develop a fully working integrated IT system for Progress Cyber Ltd.
- You **must** produce initiation and planning documentation which shows:
  - the requirements of the brief, including the objectives and success criteria
  - how to mitigate any risks and issues
  - constraints and resources
  - how the solution will be tested iteratively
  - any security/legal/ethical/moral issues and how these can be reduced or removed
  - a range of planning documents including milestones to be achieved
  - how the final evaluation will be carried out.

All evidence should be stored in the Initiation and Planning folder.

Refer to LO2 of the specification and sections 1a and 2a of the marking criteria to help you decide what you should include as evidence for this task.

Task 2 – Iterative Review

- You **must** carry out a review of the initiation and planning phase of the project commenting on the following:
  - positive and negative aspects of your work
  - issues you have encountered and actions you have taken to resolve them.

All evidence should be stored in the Evaluation folder.

Refer to LO8 of the specification and section 3a of the marking criteria to help you decide what you should include as evidence for this task.

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Task 3 – Data Manipulation and Information Presentation

You **must** develop your integrated IT system.

Requirements:

- **Client Record Interface** to include:
  - title (Mr, Mrs, Ms, etc.)
  - client contact name (first name and surname)
  - name of business
  - address of business (address line 1, address line 2, address line 3, town, county, postcode)
  - email address
  - telephone number
  - date enquiry received from business.

- Use the **Client Record Interface** to populate the client records using the *Clients.csv* file. Ensure that the telephone numbers display in full.

- Set up a navigation menu that also includes the Progress Cyber Ltd. logo using the *Progress_Cyber_Ltd._logo.jpg* file.

- Ensure the end user has to enter the password **Pr0gr3ss&Cyb3R** in order to access the system.

- Set up the functionality of your system so that letters will be automatically generated for each client who submitted an enquiry on date criteria which is input by the end user.

- Save the client letter using the filename ***New_Client_Letter***

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Client letter:

Title & Surname
Client Address

Date

Dear

Thank you for your recent enquiry requesting a visit to analyse potential and actual vulnerabilities to your IT system.

A member of the 'Ethical Hacking' team will email you to arrange a date and time to visit your premises and discuss the personal needs of your business.

Every member of the team will have a photographic ID with them which they will show you on arrival.

We look forward to working with you and providing you with the support you need.

Yours sincerely

Prisha Khatri
Managing Director
Progress Cyber Ltd.

Each letter **must** also display the following information:

Progress Cyber Ltd.
Suite 6
Hilton Heights
Gateshead
Tyne and Wear
NE10 0EZ

Tel: 0191 775886

Email: enquiries@ProgressCyber.co.uk

Each letter **must** also display the Progress Cyber Ltd. logo in the top right-hand corner of each letter. Use the *Progress_Cyber_Ltd._logo.jpg* file.

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- A **Cyber Attack Record** to include:
  - statistical information relating to the current number of cyber-attacks on businesses within the UK in 2020
  - a prediction for the number of potential cyber-attacks on businesses in 2021.

- Populate the **Cyber Attack Record** using the *Cyber_statistics.csv* file.

- Include an additional section to calculate the predicted cyber-attacks for the year 2021 as follows:
  - a facility to allow the end user to input percentage values:
    - 5% to be used to calculate predictions when two specific months from 2020 indicate an increase in attacks
    - 2.5% to be used to calculate predictions when two specific months from 2020 indicate a decrease in attacks.

> *Progress Cyber Ltd. has provided the following example of how the calculations are implemented:*
>
> *If April value 2020 – March value 2020 = an increase, then April 2021 = April 2020 value + an additional 5% of the April 2020 value.*
> *If April value 2020 – March value 2020 = a decrease, the April 2021 = April 2020 value + an additional 2.5% of the April 2020 value.*

- The value for January 2021 will be the same value as December 2020.

- Protect any calculations to prevent any accidental deletions or amendments by the end user.

- **Dynamic charts** to include:
  - a comparison of the number of cyber-attacks for 2020 and predicted cyber-attacks for 2021 for all businesses
  - a comparison of the number of cyber-attacks for the different sizes of businesses for 2020
  - a comparison of the number of predicted cyber-attacks for the different sizes of businesses predicted for 2021.

- Save the statistical information using the filename ***Cyber_Stats***

All evidence should be stored in the Data Manipulation or Information Presentation folders.

> Refer to LO5 and LO7 of the specification and sections 1b/2b and 1c/2c of the marking criteria to help you decide what you should include as evidence for this task.

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Task 4 – Iterative Review

- You **must** carry out a review of the data manipulation phase commenting on the following:
  - positive and negative aspects of your work
  - issues you have encountered and actions you have taken to resolve them
  - how effective the initiation and planning phase has been on the data manipulation phase.

All evidence should be stored in the Evaluation folder.

Refer to LO8 of the specification and section 3a of the marking criteria to help you decide what you should include as evidence for this task.

Task 5 – Data Manipulation and Information Presentation

Progress Cyber Ltd. needs a presentation to use at the exhibitions it will be attending.

Requirements:

- **Two presentations** including:
  - a main presentation saved using the filename ***Main_Exhibition***
  - a second presentation saved using the filename ***Visual_Statistics***

Presentations:

- The Progress Cyber Ltd. logo to be on every slide.
- A colour scheme for the presentations to complement the colours of the logo.

Main presentation:

- First slide of main presentation to include the following:
  - Progress Cyber Ltd.
  - 'Prevention is better than Cure'
- The information for the remaining slides of the main presentation to be imported from the *Presentation_draft.doc* file.
- The last slide with the heading 'Thank you for attending' to include the address, telephone number and email address for Progress Cyber Ltd.

Second presentation:

- The second presentation to contain the dynamic charts created from the **Cyber Attack Record**.
- The second presentation to open from within the main presentation. There **must** be a navigation control on the main presentation. This **must** allow the presenter to open the ***Visual_Statistics*** presentation.
- There **must** be a navigation control on the ***Visual_Statistics*** presentation. This **must** allow the presenter to return to the main presentation.

Overall:

- The presentation to be eye-catching and include transitions and animation which can be controlled by the presenter.

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- An **information guide** on how to protect yourself online. This is to be handed out to people attending the exhibitions.

Information Guide:

- The information for the guide is available in the *Sample_guide.doc* file.
- The information guide to be in landscape A5 size and use the font Times New Roman.
- Page numbering to be at the bottom centre of every page.
- There **must** be a table of contents.
- The guide will also be available online so the table of contents to include a function to enable someone to go to a specific section.
- The Progress Cyber Ltd. logo to be on the front cover.
- The following title to be on the front cover:

'STOP THINK CONNECT'
How to Stay Safe Online

- The front cover to stand out and look interesting.
- A smaller version of the Progress Cyber Ltd. logo, the address, telephone number and email address to be on the back page of the guide. This **must not** be too large and **must** be placed in the centre of the back page.
- Save the information guide using the filename ***Staying_Safe_Online***

All evidence should be stored in the Data Manipulation or Information Presentation folders.

Refer to LO5 and LO7 of the specification and sections 1c/2c and 1b/2b of the marking criteria to help you decide what you should include as evidence for this task.

Task 6 – Iterative Review

- You **must** carry out a review of the information presentation phase commenting on the following:
  - positive and negative aspects of your work
  - issues you have encountered and actions you have taken to resolve them
  - how effective the initiation, planning and data manipulation phases have been on the information presentation phase.

All evidence should be stored in the Evaluation folder.

Refer to LO8 of the specification and section 3a of the marking criteria to help you decide what you should include as evidence for this task.

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Task 7 – Evaluation

You **must** evaluate the integrated IT solution that you have developed and submit final evaluation documentation which could include the following headings:

- **Introduction and Background**
- **Methodology**
  - consider the success of the project against the success criteria
  - consider the effectiveness of the original planning documents
  - consider the effects of constraints on the project.
- **Outcomes and Conclusion**
  - consider the strengths and weaknesses of the solution
  - make recommendations for improvements.

All evidence should be stored in the Evaluation folder.

Refer to LO8 of the specification and section 3a of the marking criteria to help you decide what you should include as evidence for this task.

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Candidate Assignment Checklist

Candidate Name:	
Class:	
Assignment:	

Initiation and planning	
Have I considered…	**Done?**
the requirements of the brief, including the objectives and success criteria	
how to mitigate risks and issues	
any constraints and resources	
how the solution will be tested iteratively	
any security, legal, moral and ethical issues, and how these can be reduced or removed	
how the final evaluation will be carried out	
Have I created…	
a range of planning documents including milestones to be achieved	

Data manipulation	
Have I…	**Done?**
used appropriate software to import and manipulate data for my solution	
used a range of tools and techniques with the software I have selected	
mitigated the security, legal, moral and ethical issues which affect my project	
completed an iterative review	

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Information presentation	
Have I…	**Done?**
used appropriate software to export and present information as required by the business	
used a range of tools and techniques with the software I have selected	
mitigated the security, legal, moral and ethical issues which affect my project	
completed an iterative review	

Evaluation	
Have I…	**Done?**
evaluated my final project against the success criteria	
considered the effectiveness of the original planning documentation	
considered the effects of constraints on the project	
considered the strengths and weaknesses of the solution	
made recommendations for improvements	

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