Pearson

T-LEVELS | IfATE Institute for Apprenticeships and Technical Education

T Level Technical Qualification in Digital Production, Design and Development (Level 3)

Monday 10 March 2025 – Friday 21 March 2025

Time 20 hours

Paper reference 19540

Occupational Specialism

Task 1: Analysing the problem and designing a solution

You must have:
Task1_Test_Strategy_Template.doc

Instructions

- The total mark for this task is 58.
- This booklet contains material for the completion of the set task under supervised conditions.
- This booklet is specific to each series and this material must only be issued to students who have been entered to undertake the task in the relevant series.
- This booklet should be kept securely until the start of the assessment window.

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Instructions for students

You must complete ALL activities within the assessment.

Your centre will schedule **20 supervised hours during the three-week window** in which you will produce the outcomes for this task.

You are:

- only permitted to produce evidence of your proposal and design documentation during the scheduled supervised sessions
- not permitted to have access to your proposal and design documentation outside the supervised assessment sessions.

Outside the supervised assessment sessions you are permitted to:

- carry out research
- produce notes containing the facts and figures related to your research.

Any notes you wish to take into the supervised sessions must be submitted as part of the assessment so they can be checked by your tutor; your tutor will confirm that the notes contain **only** facts and figures related to the research carried out.

Notes that you are permitted to take into the scheduled supervised sessions must:

- **not contain** attempts to interpret, analyse or evaluate the research in the context of the scenario
- **not contain** any other content that has not been specified in these instructions
- be submitted as an appendix to the task and retained by your centre until after the end of the post-results service period.

You are allowed monitored access to the internet during the scheduled supervised sessions.

Your work will be kept securely during any breaks and between scheduled sessions.

You are not permitted to take anything into or out of the supervised assessment sessions without the approval of your tutor/invigilator.

Templates provided for use during this task:

- *Task1_Test_Strategy_Template.doc*

Your work must:

- be completed independently
- identify any work that is not your own through the use of appropriate citations
- be authenticated by your tutor before being submitted to Pearson.

Your tutor is not permitted to provide guidance or feedback during this task.

Set Task Brief

You work for a software development company. The company has secured a contract to develop a solution for a local green technology company, Rolsa Technologies. Rolsa Technologies specialises in:

- solar panel installation and maintenance
- electric vehicle (EV) charging stations
- smart home energy management systems.

The clients (owners of Rolsa Technologies) would like to develop a digital solution that will:

- provide customers with information about:
  - green energy products currently on the market
  - how to reduce their carbon footprint
- allow customers to:
  - schedule consultations and installations
  - calculate their carbon footprint.

The client has conducted market research with existing customers to identify features that could be included in the digital solution. The suggested features by the client are:

- account registration to allow customers to manage their consultations and data
- accessibility features to support a wide range of users
- a tool for calculating and tracking energy usage.

Activities

Activity A(i)

You have been asked to carry out research to prepare for developing a proposal for the digital solution. Your research should consider how digital solutions are used to meet the needs of different users within the energy sector, including:

- how hardware and software are used within the context of the industry
- newly emerging technologies
- how digital solutions could be used to meet different user needs
- the industry-specific guidelines and regulations you will need to follow.

Any notes you produce should be kept and submitted as an appendix.

Activity A(ii)

Produce a detailed proposal for a digital solution that you would develop to meet the needs of:

- the client (Rolsa Technologies)
- existing and potential users.

Your proposal should provide a rationale for the solution you are proposing and include:

- the business context
- the functional and non-functional requirements of the solution
- decomposition of the problems that will need to be solved to implement the functional and non-functional requirements
- the key performance indicators (KPIs) and user acceptance criteria for the proposed solution
- a description of the proposed solution
- justification of:
  - how the recommended solution meets the needs of the client and users
  - how potential risks will be mitigated
  - how relevant regulatory guidelines and legal requirements, in relation to software development and the energy sector, will be addressed.

(24)

Activity B

Produce a set of design documents for the digital solution you are proposing. The design documentation must include:

- visual/interface designs
- data requirements
- a selection of algorithm designs
- a test strategy.

Your proposed solution must be of sufficient scope and complexity to demonstrate your ability to implement code in at least two appropriate languages to implement front-end and back-end processes.

Your design documents should provide sufficient detail to:

- effectively communicate the intended solution to both technical and non-technical stakeholders
- allow the client to make informed decisions
- allow a third-party developer to use the design documents to create the proposed solution.

Your test strategy does not need to detail specific tests for every part of the solution. However, it should provide a selection of tests, relevant to your proposed solution, that show:

- the order in which you intend to test all components of the solution
- the types of test to be carried out for each component.

Your algorithm designs do not need to show the whole solution but should show how you would solve a number of different key problems. You should limit your algorithm designs to a maximum of five complex problems.

(34)

Continue ▶

Outcomes for submission

You must submit:

1. A proposal for the designed solution, including appendices of relevant research notes to support your rationale.

   Save your proposal as a PDF file in your folder for submission. Use this naming convention:

   – Task1_Proposal_[Registration number]_[Surname]_[First letter of first name]

2. A set of design documents.

   Save your completed design documents as PDF files in your folder for submission. Use this naming convention:

   – Task1_DesignDocs_[Document name]_[Registration number]_[Surname]_[First letter of first name]

TOTAL FOR TASK = 58 MARKS