PEARSON

T-LEVELS | Institute for Apprenticeships & Technical Education

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

Wednesday 15 May 2024

Time 3 hours

| Paper reference | 19538 |

Core: Employer Set Project
Task 1
Planning a project

You do not need any other materials.

Information

- 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 must be kept securely until the start of the timetabled assessment.

Instructions to Students

You must complete ALL parts of the activity within the assessment.

The task must be undertaken at the time and on the date specified by Pearson.

You will be given three hours for producing the outcomes for this task.

Your centre will advise you of when any supervised breaks have been scheduled.

The task must be completed under supervised conditions.

You are **not** permitted access to the internet during this task.

You are permitted to use **offline** versions of relevant software to produce evidence for this task.

Your work and any material provided must be kept securely at all times.

Set Task Brief

You work for a software development company that has been offered the contract to develop a new digital solution for Recoats Adventure Park.

Your manager has asked you to analyse the potential costs, benefits and risks associated with the project and then produce a plan for the development of the new digital solution.

Your manager intends to use your plan during the next monthly meeting with the client.

Activity

Using the Set Task Information provided, your manager has asked you to produce:

- a Gantt chart to demonstrate how you would organise the development of the new digital solution

- a plan for the resources selected and associated costs

- a rationale that explains your planning approach and justifies the decisions you made.

(19)

Outcomes for submission

Save your Gantt chart as a PDF file and as either:

- an Excel compatible spreadsheet file

- or an MS Project compatible file (as appropriate).

Save your resource and cost plan as a PDF file and as either:

- an Excel compatible spreadsheet file

- or an MS Project compatible file (as appropriate).

Save your rationale as a PDF file.

All files should be saved in your folder for submission.

Use this naming convention:

Task1GanttChart_[Registration number]_[surname]_[first letter of first name]

Task1ResourceCostPlan_[Registration number]_[surname]_[first letter of first name]

Task1Rationale_[Registration number]_[surname]_[first letter of first name]

Set Task Information

Recoats Adventure Park is a local theme park that offers a range of rides and attractions. The company wants to develop a system to manage and support a range of business operations.

After reviewing its current systems, Recoats Adventure Park has decided that it needs to develop a new centralised digital solution.

The aims of the solution are to allow:

- the company to engage with stakeholders more effectively

- employees to manage:

    - customer ticket bookings and entry to the park

    - stock and inventory in the shops and restaurants

- management to:

    - access tools for carrying out business data analysis

    - improve the quality of services offered through data analysis.

The requirements of the system are:

- to provide customers with up-to-date information about ticket availability and bookings

- to allow staff to access information that will support day-to-day activities at the theme park

- to allow staff to interact with a dashboard of business information

- a user interface with appropriate accessibility features.

Planning information

Recoats Adventure Park estimates that the new solution will lead to:

- an increase in revenue of 9% after the system has been in place for one year

- an increase of 15.5% after two years

- an increase of 12% after three years.

The management team knows that there will be an increase in outgoing costs as a result of the new system.

Recoats Adventure Park and your manager have provided you with information to help you produce your plan.

Company Financial Data	
Description	**Amount (£)**
Current annual revenue	1 875 985
Current outgoing	1 467 870
Forecast for development	**Amount (£)**
Purchasing of hardware	50 300
Training theme park staff to use the new system	15 000
Software development company base fee	47 250
Server	Option 1: Physical server – 86 998 one-off payment Option 2: Cloud server – 3 750 per month
Upgrades to company infrastructure	105 780
Your pay (Project Lead)	180 per day
Ongoing costs	**Amount (£)**
Web hosting and online advertising	790 per month
IT Support Technician	25 000 per year

You have been allocated members of staff by your manager to assist with the project.

All of your company's Hardware and Networking Technicians are working on other projects. Therefore, the senior managers have authorised the use of external contractors.

Your project development team will consist of these staff members:

- one Senior Software Engineer (current employee)

  – Shu Bernard

- one Junior Software Engineer (current employee)

  – Rafe Bisset

- one Web Development Engineer (current employee)

  – Stanley Colt

- two Hardware and Networking Technicians (external contractors)

  – Ayoub Nielson

  – Wernher Garza

- one Cloud Systems Architect (current employee)

- Natalie Walterson

Profiles for the project staff

Name	Shu Bernard
Title	Senior Software Engineer
Core skills	• Able to program in multiple languages. • Trained in a range of software testing methods.
Previous experience	• 10 years' experience in software development. • Worked on implementing large-scale projects within the entertainment sector. • Newly promoted to Team Leader.
Cost	£85 per hour

Name	Rafe Bisset
Title	Junior Software Engineer
Core skills	• Able to program in Python, Kotlin and SQL. • Certified in a range of software testing standards.
Previous experience	• 4 years' experience as a Junior Software Developer. • Worked as an independent mobile app developer before joining the company.
Cost	£40 per hour

Name	Stanley Colt
Title	Web Development Engineer
Core skills	• Trained in full-stack development. • Proficient in front-end and back-development and deployment.
Previous experience	• 12 years' experience as full-stack developer. • Recently employed by the software development company. • This will be their first project with this company.
Cost	£85 per hour

Name	Ayoub Nielson
Title	Hardware and Networking Technician
Core skills	• Proficient in developing test plans and hardware testing. • Level 5 qualifications in network infrastructure design and implementation. • Specialist in network security.
Previous experience	• 10 years' experience working as a hardware and network technician in a number of different sectors. • Is an independent contractor who has been hired for this project only.
Cost	£80 per hour

Name	Wernher Garza
Title	Hardware and Networking Technician
Core skills	• Currently studying for a Level 4 qualification in network infrastructure design and implementation.
Previous experience	• Apprentice – limited previous experience. • Is an independent contractor who has been hired for this project only.
Cost	£14 per hour

Name	Natalie Walterson
Title	Cloud Systems Architect
Core skills	• Trained in full-stack development. • Proficient in front-end and back-end development, and cloud deployment.
Previous experience	• 2 years' experience as a Cloud Systems Architect. • 8 years' experience as a Software Engineer. • Has worked on large-scale projects in many different sectors.
Cost	£78 per hour

Task	Estimated Hours
Upgrade infrastructure	200
Deploy and configure cloud server	40
Deploy and configure physical server	32
Develop module 1: Back-end database	50
Develop module 2: Website integration	60
Develop module 3: Mobile app integration	67
Develop module 4: User interface	55
Develop module 5: Online booking system	95
Develop module 6: Stock and inventory management	65
Configure web hosting	35
Deploy modules	9 (per module)
Installation of hardware	42
Unit testing	8 (per module)
Integration testing	8 (per module)
Testing of hardware	48
Fixing and regression testing for major fault	7 (per fault)
Fixing and regression testing for minor fault	4 (per fault)
Creating a test plan	5 (per module)
Training theme park staff to use the new system	32
User/acceptance testing	18

It is assumed that:

- three minor faults will be found with each module

- a maximum of four major faults will be found throughout the whole project

- the project will begin on 27th May 2024

- staff will work eight hours a day, five days a week.

Recoats Adventure Park has requested that the job is completed within 18 weeks.