Pearson BTEC Level 3 Nationals Diploma, Extended Diploma

Window for supervised period:
Tuesday 8 January 2019 - Monday 14 January 2019

Supervised hours: 3 hours | Paper Reference **31770H**

Computing

Unit 3: Planning and Management of Computing Projects

Part A

You must have:
Project_Initiation_Document.rtf

Instructions

- **Part A** should be completed before attempting **Part B**.
- **Part A** and **Part B** tasks will be submitted together for each learner on completion of **Part B**.
- **Part A** contains material for the completion of the set task under supervised conditions.
- **Part A** should be undertaken in 3 hours during the assessment period of one week timetabled by Pearson.
- **Part A** is specific to each series and this material must only be issued to learners who have been entered to undertake the task on a date set by Pearson in the relevant series.
- **Part A** must be kept securely until the start of the 3-hour supervised assessment period.
- **Part B** materials for the set task will be issued prior to the start of the supervised assessment period according to the guidance in the specification.
- This booklet should not be returned to Pearson.
- Answer **all** activities.

Information

- The total mark for this paper is 36.

W 5 4 0 6 1 A

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Instructions to Teachers/Tutors and/or Invigilators

This paper must be read in conjunction with the unit information in the specification, the *BTEC Nationals Information for Conducting External Assessments (ICEA)* document and the unit 3 Administrative Support Guide 2019. See Pearson website for details.

Refer carefully to the instructions in this task booklet and the *Information for Conducting External Assessments (ICEA)* document to ensure that the assessment is supervised correctly.

The set task should be carried out under supervised conditions.

Electronic templates for use in activity 1 will be provided for centres to download for learner use.

Work should be completed on a computer using the supplied documents or using project software as directed in each activity.

Internet access is not permitted.

All learner work must be completed independently and authenticated by the teacher/tutor and/or invigilator before being submitted to Pearson.

Centres are free to arrange the single session 3-hour supervised assessment period how they wish provided it is completed within the 1-week period scheduled by Pearson and according to the level of supervision specified.

Centres are responsible for putting in place appropriate checks to ensure that only permitted material is introduced into the supervised environment.

Maintaining Security

- During any break, materials must be kept securely.
- User areas must only be accessible to the individual learners and to named members of staff.
- Access to the internet is not permitted.
- Learners can only access their work under supervision.
- Learner work must be regularly backed up.
- Learners should save their work to their folder using the naming instructions indicated in each activity.
- Any work learners produce under supervision must be kept securely.
- Any materials being used by learners must be collected in at the end of the 3 hours, stored securely and handed back at the beginning of the **Part B** session.

Outcomes for Submission

Each learner must create a folder to submit their work. Each folder should be named according to this naming convention:

[Centre #]_[Registration number #]_[surname]_[first letter of first name]_U3A

Example: Joshua Smith with registration number F180542 at centre 12345 would have a folder titled

12345_F180542_Smith_J_U3A

Each learner will need to submit 4 PDF documents, within their folder, using the file names listed.

Activity 1: activity1PID_[Registration number #]_[surname]_[first letter of first name]

Activity 2a: activity2gantt_[Registration number #]_[surname]_[first letter of first name]

Activity 2b: activity2resource_[Registration number #]_[surname]_[first letter of first name]

Activity 2c: activity2cost_[Registration number #]_[surname]_[first letter of first name]

An authentication sheet must be completed by each learner and submitted with the final outcomes.

The work should be submitted no later than 21 January 2019.

Instructions for Learners

Read the set task information carefully.

You must plan your time accordingly and be prepared to submit all the required evidence by the date specified.

You will complete this set task under supervision and your work will be kept securely at all times.

You may use a calculator and will have access to a computer. All activities must be completed using a computer.

There will be no access to the internet.

You must work independently throughout the supervised assessment period and should not share your work with other learners.

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You must create a folder to submit your work. Your folder should be named according to this naming convention:

[Centre #]_[Registration number #]_[surname]_[first letter of first name]_U3A

Example: Joshua Smith with registration number F180542 at centre 12345 would have a folder titled

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Activity 2a: activity2gantt_[Registration number #]_[surname]_[first letter of first name]

Activity 2b: activity2resource_[Registration number #]_[surname]_[first letter of first name]

Activity 2c: activity2cost_[Registration number #]_[surname]_[first letter of first name]

You must complete an authentication sheet before you hand your work into your teacher/tutor.

Set Task Brief

You are asked to use your project planning and management understanding and skills within a given computing project scenario.

> You have been hired as the Project Manager for a new business venture. You are to work with a team of developers to produce a website and app for a company called PINCOM. PINCOM is platform that will provide access to services within a certain distance of a specified location. Your team will be made of front-end and back-end web developers, app developers and additional staff.
>
> In **Part A** you are required to complete project documentation to initiate and launch the project. In **Part B** you will monitor and control the project's progress to its completion and closure.

You are advised to spend 30 minutes reading the information, task instructions and the tasks you are to complete.

You may make notes and/or highlight information to use in the completion of your project documents.

Information

Your team will design an easy to use website and app to allow users to access the platform. The platform will allow a user to access the different services within a specified geographical area. For example, a user may require a tutor or a plumber. The website would link that user to these services within a specified distance of their given location.
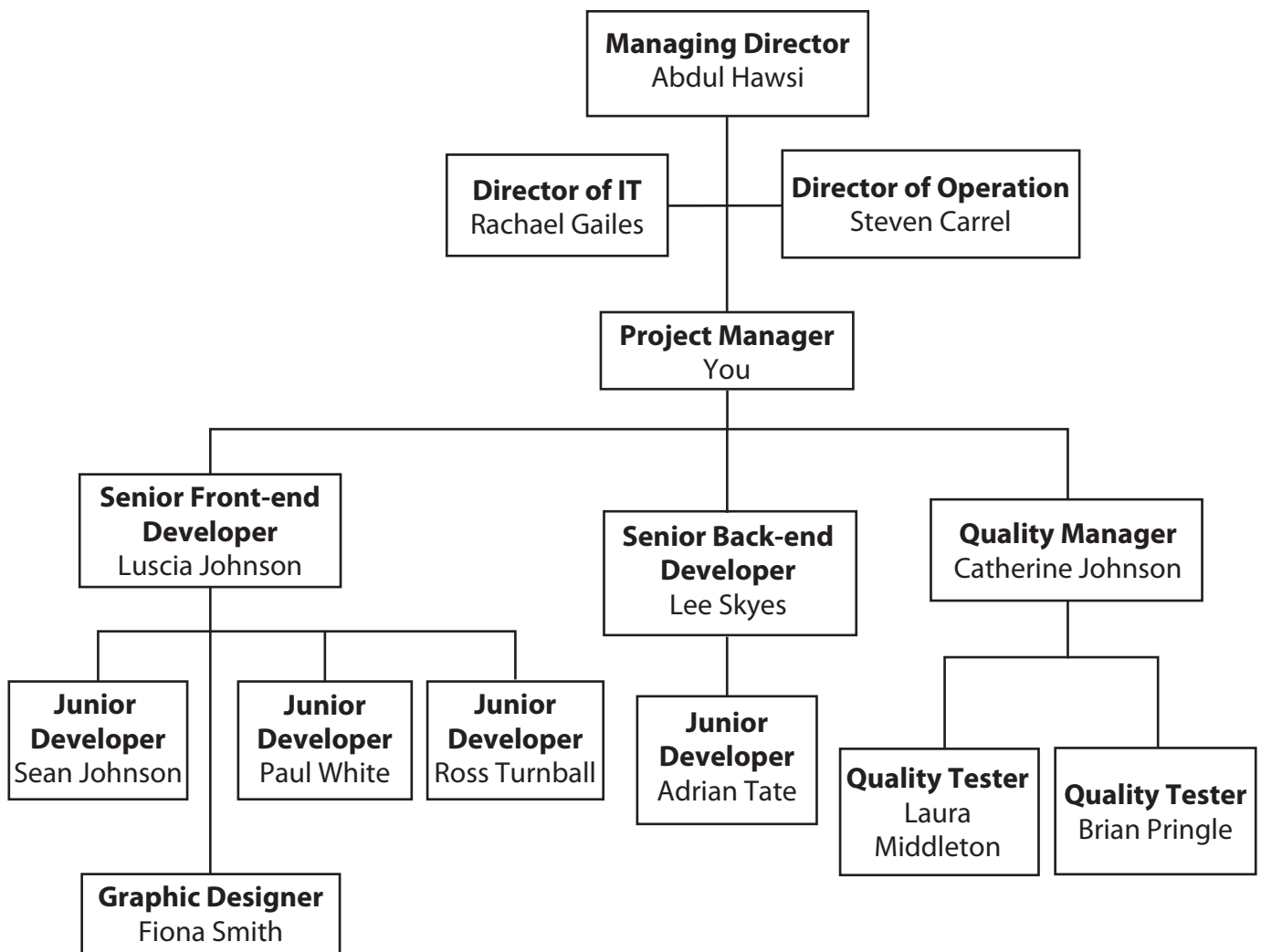
Your job as Project Manager (PM) is to work with the team and manage the project over its entire lifetime. As this project has never been done before, it is important that rigorous testing and evaluation are carried out throughout the project.

As a Project Manager you must recommend how the platform will be hosted.

The two options are:

	Description	Price
Option one	**Processing power** - a single CPU core **Memory** - 256MB of RAM **Active users** - 100 simultaneously **Bandwidth** - 50GB monthly **Storage space** - 5GB disk space **Technical support** – £40 per issue resolved	£1089
Option two	**Processing power** - 4 CPU cores **Memory** - 4GB of RAM **Active users** - 5000 simultaneously **Bandwidth** - unlimited **Storage space** - 2TB disk space **Technical support** – unlimited support included	£5180

PINCOM organisational structure

```
                          Managing Director
                             Abdul Hawsi

              Director of IT          Director of Operation
              Rachael Gailes             Steven Carrel

                          Project Manager
                                You

   Senior Front-end          Senior Back-end        Quality Manager
      Developer                 Developer           Catherine Johnson
   Luscia Johnson               Lee Skyes

  Junior      Junior      Junior      Junior
Developer   Developer   Developer   Developer     Quality Tester   Quality Tester
Sean Johnson Paul White Ross Turnball Adrian Tate     Laura          Brian Pringle
                                                    Middleton

        Graphic Designer
          Fiona Smith
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The client would like three checkpoints during the development of the platform. Each checkpoint requiring a prototype that can be tested and evaluated to make sure it meets PINCOM's requirements. The first prototype should be completed within two weeks of completing the analysis and design.

You will need to set a checkpoint date for each of the prototypes. This date must allow for adequate testing, user feedback and development of the platform. A final version of the platform must be ready for the project deadline.

The prototypes may not be a complete working system. However they must provide some level of interactivity to help the team evaluate the design and functionality of the platform. The prototype may also be used to demonstrate the design to others.

A market research company has been employed to check the potential users within the UK. The results need to be analysed and then presented to the board of directors and yourself, before development of the platform can begin. The market research will take two weeks at a cost of £200 per day.

The Senior Front-end Developer and Senior Back-end Developer will complete the analysis and design for the platform. This should take no more than four weeks to complete. Analysis and design is dependent on the information from the market research company.

Senior Front-end Developer and Senior Back-end Developer will complete all complex function points. They need five hours per complex function point. Their rate of pay is shown in the table.

The Junior Developers specialise in either front-end or back-end development. They need seven hours per general function point. Their rate of pay is shown in the table.

The Graphic Designer needs four hours per general function point. Her rate of pay is shown in the table.

The Quality Testers are to ensure that the functionality of the platform meets required standards. They need five hours per general function point. Their rate of pay is shown in the table.

The Director of IT has provided these details from his function point analysis of the project.

Front-end tasks:

- Developing the website (16 general function points)
- Developing the app (10 general function points)
- Creating graphics for user interface (10 general function points)
- Building the web and app interface (12 complex function points)

Back-end tasks:

- Developing the database (16 complex function points)
- Installing server and related software (4 general function points)
- Platform testing (14 general function points).

Job title	Cost per hour
Project Manager	£28
Senior Front-end Developer	£28
Senior Back-end Developer	£28
Quality Tester	£22
Graphic Designer	£18
Junior Developer	£20

It has been estimated that the staff would work five days a week, seven hours a day. The project start date would be 1 October 2019 and it needs to be completed by the 24 January 2020. The project will pause for Christmas on 20 December 2019 and will restart on 2 January 2020.

A version of the platform should be tested with the public before the platform goes live on 24 January 2020.

As this is a completely new platform, it is assumed that during the public test:

- at least one major fault will be found
- at least three minor faults will be found.

It normally takes two days to rectify a major fault and one day to rectify minor faults. Each fault will need a further three days' regression testing.

The project has a budget of £30,000. The client is hoping that in the first year, services used via the website will generate enough money to break even. The client would like to be making a profit of £50,000 within two years. Sales revenue should increase by 10% year on year.

Part A Set Task

You must complete ALL activities within the set task.

You are reminded that you need to produce your documents using a computer and software of your choice.

Your documents must be saved in your folder ready for submission using the formats and naming conventions indicated.

You need to complete your company's Project Initiation Document (PID) for the computing project.

Activity 1

Produce a Project Initiation Document for your project using the template **Project_Initiation_Document.rtf**

The 'Business case' section has already been populated.

Add further lines to the Project Initiation Document sections if required.

Save your PID as a PDF in your folder for submission as **activity1PID_[Registration number #]_[surname]_[first letter of first name]**

You are advised to spend 1 hour and 30 minutes on this activity.

(Total for Activity 1 = 22 marks)

Project planning documentation is needed to go with your PID. You need to produce a Gantt chart, resource list and cost plan for the computing project.

Activity 2

Produce the following project planning documentation based on the information provided in the set task brief:

(a) a Gantt chart
(b) a resource list
(c) a cost plan.

Save your planning documentation as 3 PDFs in your folder for submission as

Gantt chart as
activity2gantt_[Registration number #]_[surname]_[first letter of first name]

Resource list as
activity2resource_[Registration number #]_[surname]_[first letter of first name]

Cost plan as
activity2cost_[Registration number #]_[surname]_[first letter of first name]

You are advised to spend 1 hour on this activity.

(Total for Activity 2 = 14 marks)

TOTAL FOR PART A = 36 MARKS