

Pearson BTEC Level 3 Nationals Diploma, Extended Diploma

Window for supervised period:

Tuesday 5 January 2021 – Monday 11 January 2021

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** will need to have been completed in preparation for **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.

Turn over ►

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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, and the *BTEC Nationals Instructions for Conducting External Assessments (ICEA)* document and the *Unit 3 Administrative Support Guide 2021*. See Pearson website for details.

Refer carefully to the instructions in this task booklet and the *BTEC Nationals Instructions 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 learners 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: activity2ganttt_[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 18 January 2021.

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

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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]

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.

MaxP Ltd is an international law firm with headquarters based in Leeds. The Managing Director (MD) Ms Paton is keen on installing smart devices throughout the business such as temperature control, lighting and printers.

Your company, IIT, specialises in designing and installing these systems. Your task is to manage the project to install hardware, software and configure the new system.

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 activities you are to complete.

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

Information

Ms Paton has requested a system that will:

- use an artificial intelligence (AI) administrative assistant
- track maintenance of printers
- enable intelligent lighting with smart bulbs
- track equipment with smart tagging
- use sensors to heat map the office
- track building data over time so software can adjust to changes to fit occupancy or seasonal changes
- use cameras for security
- support 24/7 operation.

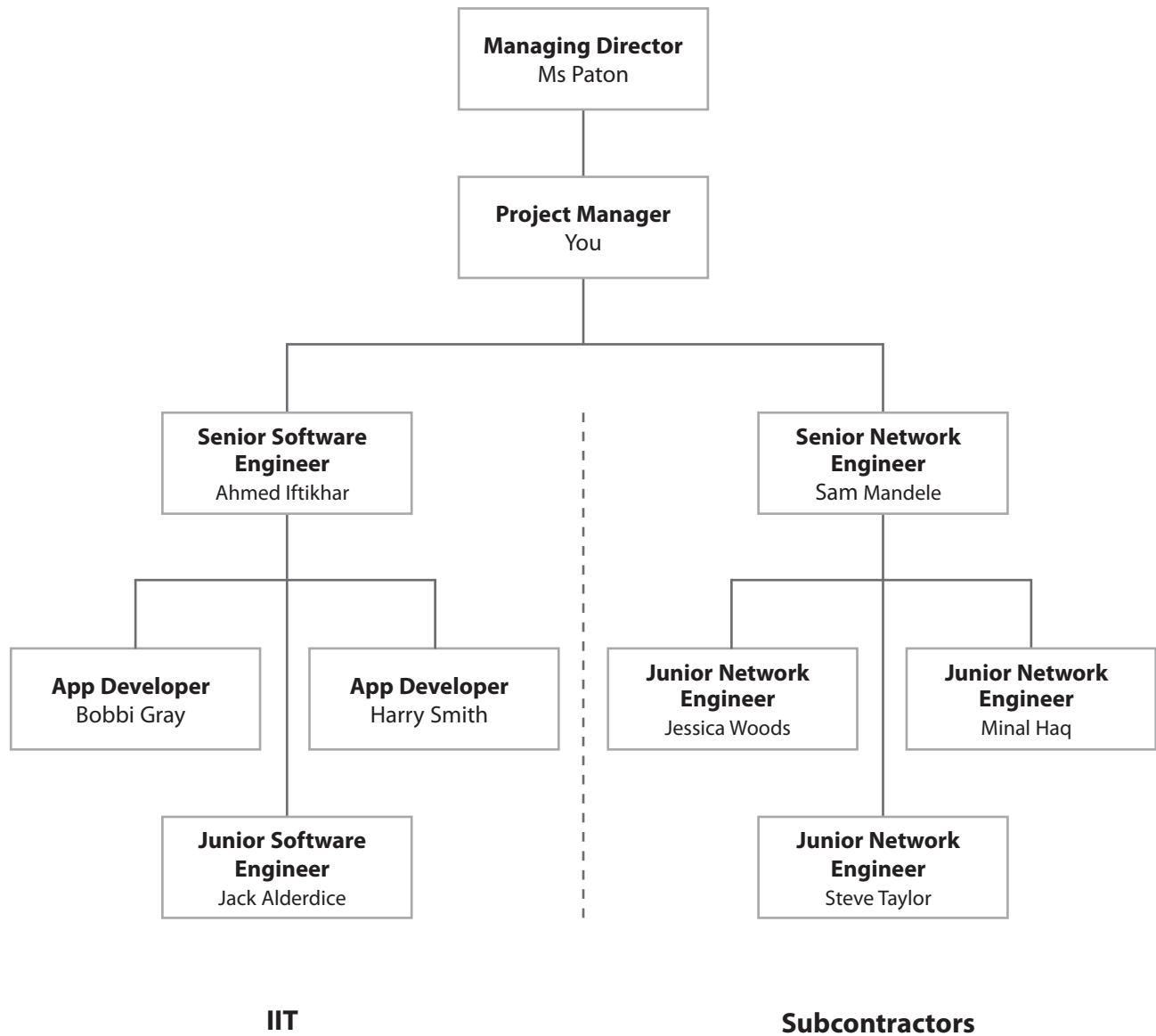
She feels that the new system will:

- provide a 30% efficiency saving on utility bills
- minimise security risks
- improve the wellbeing of staff through a better office environment
- reduce carbon footprint.

The system to be developed will require:

- automated environmental controls
- a custom smartphone app
- a custom database interface
- new equipment and training for staff
- deployment and configuration of a cloud server
- the installation of network infrastructure.

Project organisational structures



The Finance Manager has provided these costings to help you plan the project.

Job title	Cost per hour
Project Manager	£35
Senior Software Engineer	£40
Junior Software Engineer	£22
Senior Network Engineer	£40
Junior Network Engineer	£23
App Developer	£40

The cost of the equipment.

Item	Cost
Smart cameras indoor and outdoor	£4000
Smart locks	£199 each (require 25)
Smart lighting	£25.00 each (require 200)
Smart heating sensors	£8.99 each (require 100)
Sensors to measure room occupancy and usage	£44.99 each (require 100)
Smartphones	£600 each (require 10)
Cables	£6.99 per metre (require 5000 metres)
Wi-Fi access points	£70 each (require 5)

The **Junior Network Engineers** will work on:

- installing network infrastructure
- hardware testing
- installing and configuring hardware.

The Junior Network Engineers need six hours per general function point. Their rate of pay is given in the table.

The **Junior Software Engineer** will work on:

- stress testing the customised app
- software testing.

The Junior Software Engineer needs six hours per general function point. His rate of pay is given in the table.

The **Senior Network Engineer** will work on:

- installing network infrastructure
- hardware testing
- installing cameras and sensors.

The Senior Network Engineer needs five hours per general function point and eight hours per complex function point. Her rate of pay is given in the table.

The **Senior Software Engineer** will work on:

- deploying and configuring of a cloud server
- software testing.

The Senior Software Engineer needs five hours per general function point and eight hours per complex function point. His rate of pay is given in the table.

The **App Developers** will work on:

- configuring security protocols
- setting up the back-end of the customised app
- creating customised app interface.

The App Developers need five hours per general function point and eight hours per complex function point. Their rate of pay is given in the table.

Use this function point analysis to help plan your project:

- creating customised app interface (12 general function points)
- setting up back-end of customised app (16 complex function points)
- configuring security protocols (16 complex function points)
- deploying and configuring cloud server (15 complex function points)
- installing network infrastructure (12 general function points)
- installing cameras and sensors (14 complex function points)
- stress testing customised app (13 general function points)
- installing and configuring hardware (14 general function points)
- software testing (12 general function points)
- hardware testing (12 general function points).

It is estimated that the staff would work five days a week, seven and half hours a day.

The project start date would be 1 February 2021 and the company would like it completed by 2 April 2021.

It is assumed that during hardware testing:

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

It is assumed that during software testing:

- at least two major faults will be found
- at least two minor faults will be found.

It normally takes two days to rectify a major fault and one day to rectify a minor fault.

Each fault will need a further three days regression testing.

The project has an allocated budget of £125,000.

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 'Project Aims' 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