

Pearson BTEC Level 3 Nationals Diploma, Extended Diploma

Window for supervised period:

Tuesday 7 January 2020 – Monday 13 January 2020

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 2020. 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: 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 20 January 2020.

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.

Outcomes for Submission

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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You will need to submit 4 PDF documents, within your 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]

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.

North East is one of the busiest and fastest growing airports in the United Kingdom. The second phase of expansion of the airport by Civil Aviation has now started. Mr Ward, the Director of Operations at the airport, has contacted MT Solutions to help with the project. 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

Mr Ward, the Director of Operations, has requested a system that will:

- reduce record keeping errors
- reduce check-in times
- allow passengers to check in using a smartphone app
- collect gate and flight data
- store flight schedules
- support 24 hours per day operation.

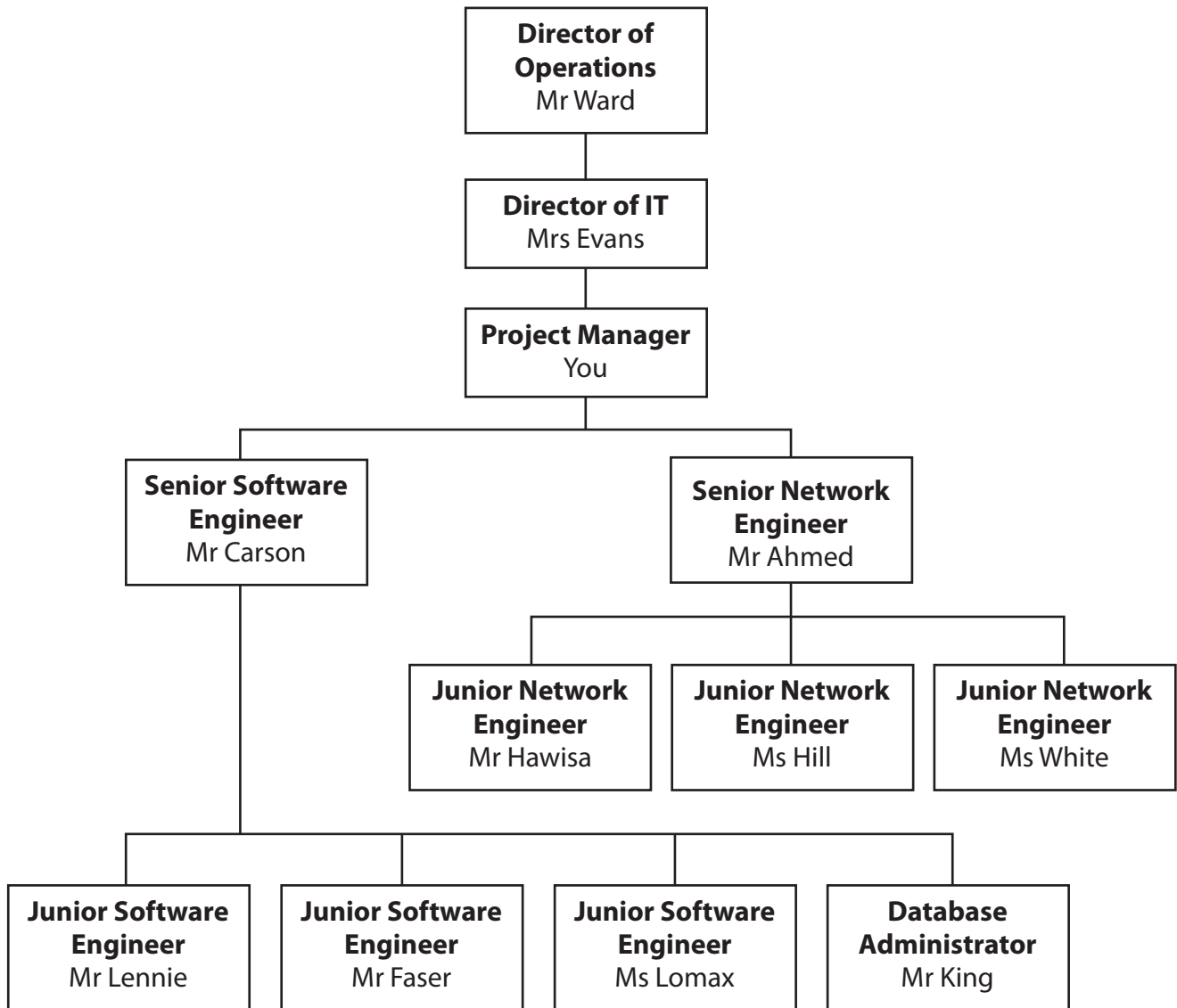
He feels that the new system will:

- improve efficiency of passenger movement by at least 30%
- decrease the time aircraft are at the airport
- allow more flights in and out of the airport.

The system developed will require:

- a relational database
- a customised smartphone app (check-in system)
- network infrastructure and server
- a customised database interface
- upgraded check-in desks
- training for staff
- two additional servers to provide redundancy for every system.

MT Solutions organisational structure



Use these costs to help you plan the project.

Job title	Cost per hour
Project Manager	£32
Senior Software Engineer	£27
Junior Software Engineer	£20
Senior Network Engineer	£27
Junior Network Engineer	£20
Database Administrator	£22

Item	Cost
Server	£2900 per server
Server software and licensing costs	£3911 per server
Check-in terminals	£53,000
Network infrastructure	£25,000

The Junior Network Engineers will work on:

- installing check-in terminals
- installing network infrastructure
- hardware testing
- security testing.

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

The Junior Software Engineers will work on:

- developing the smartphone app
- creating customised interface
- server software testing
- smartphone app testing
- planning and delivering training for staff
- software testing.

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

The Senior Network Engineer will work on:

- installing network infrastructure
- building and connecting servers
- hardware testing.

The Senior Network Engineer needs seven hours per general function point and nine hours per complex function point. His rate of pay is given in the table.

The Senior Software Engineer will work on:

- developing the relational database
- integrating the smartphone app and relational database
- installing and configuring server software
- software testing
- planning and delivering training for staff.

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

The Database Administrator will work on:

- server software testing for each server
- software and security testing
- plan and deliver training for staff

The database administrator needs six hours per general functional point. His rate of pay is given in the table.

The Director of IT has provided these details from her function point analysis of the project:

- develop the smartphone app (11 general function points)
- create customised interface (8 general function points)
- develop the relational database (10 complex function points)
- integrate smartphone app and relational database (4 complex function points)
- install check-in desks and network infrastructure terminals (20 general function points)
- build and connect each server (3 complex function points)
- install and configure software for each server (12 complex function points)
- server software testing for each server (10 general function points)
- hardware testing for each server (10 general function points)
- software and security testing (26 general function points)
- plan and deliver training for staff (2 general function points).

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

The project start date would be 03 February 2020 and needs to be completed by 03 April 2020.

For each test activity given in the function point analysis it is assumed that:

- at least two major faults 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 an allocated budget of £150,000.

The client hopes that in the first year the number of flights in and out of the airport will increase by 10,000 to 94,500, and efficiency and profitability would increase 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 'purpose of the project' 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

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