BTEC Assignment Brief

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| Qualification | Pearson BTEC Level 3 National Extended Diploma in Computing  |
| Unit or Component number and title | 23 |
| Learning aim(s) (For NQF/RQF only) | A |
| Assignment title | Assignment 1 - 2024-25 - Examine the principles of systems analysis and design |
| Assessor | Enter Name of Assessor |
| Hand out date | Sep 30, 2024 |
| Hand in deadline  | Nov 06, 2023 |
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| Vocational Scenario or Context | Bristol City College is looking for some help from some of the top students in the computing department. Your skills in systems analysis and design have been recognised.

The college would like to understand all the different techniques used to analyse, design and develop a system and they want you to write a report on this to educate them. They are hoping in future to build an application for students (although you dont need to design this right now just describe the tools and techniques) |
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| Task 1 | They suggested you follow this structure so they can find the information easily

Introduction Here they want you to discuss what you are going to discuss in your report. E.g. a description of SDLC, software systems methodologies and examples of tools used to analyse software.

Systems Development Life-Cycle (SDLC)

They would like you to describe what the SDLC is. They want to understand what each part of the lifecycle involves and how it could be practically implemented to develop their system.

Software Development Models

They would like to understand each model involved in the SDLC and require a description of

Waterfall

Iterative Agile

Incremental

Spiral

Rapid Prototyping.

Also, to help them understand the best which one to use they would like to hear about case studies of other projects that were successful or not and used each model.

Comparisons of the models They are really keen to hear how each model compares to the other. What are the benefits of one over the other depending on the type project that you are working. Which is the most suitable for their mobile app project Why did some models work for some of the case studies and some they did not.

Software development frameworks

As well as gaining an understanding of what the different development models are they also want to know what kind of framework their app development could be modelled in. There are a few main types

SSADM Structured Systems Analysis and Design (focussing on detailed analysis and design taking years)

RAD Rapid Applications Development (rapidly produce prototypes)

XP Extreme Programming (pair programming, test driven development, fast to make a product)

SCRUM Development team, SCRUM master and product owner all working together to manage a project

Comparison of frameworks

They are super keen to hear how they compare against each other. Does one cost more that the other Is one more detailed but slower to produce a piece of software Is one very fast and agile producing software quickly so that it works, but not in a finished state

Applied software development lifecycle tools and techniques
You must an explain the following techniques and compare them using screenshots of examples in Visio design

Object-oriented techniques unified modelling language (UML), analysis models such as cases, analysis class diagram.

Structured techniques entity relationship diagram (ERD), logical data structure, process such as data flow diagram (DFD), time such as entity life history, models.

Computer-aided software engineering (CASE) tools, e.g. data dictionary, decision table checking, Screen design for data output

You need to show examples of how they are used, pictures etc. and say briefly how each model could be used to design a new system. |
| Checklist of evidence required  | Report that evaluates the use of the applied software development lifecycle model and systems methodology in the problem solving process.  |
| Criteria covered by this task: |
| Unit/Criteria reference | To achieve the criteria, you must show that you are able to: |
| 23 / P1 | Explain the stages of the software development lifecycle.  |
| 23 / P2 | Explain the principles of systems methodologies used in the problem solving process.  |
| 23 / M1 | Compare the use of the applied software development lifecycle model and systems methodology in the problem solving process against alternative options.  |
| 23 / D1 | Evaluate the use of the applied software development lifecycle model and systems methodology in the problem solving process.  |
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| Sources of information to support you with this Assignment | All the lecture notes posted in your topics and lectures channel Provides a good overview of system methodology http www.tutorialspoint.com sdlcsdlc\_overview.htm Provides an overview of system analysis and design methodology httpswww.techopedia.comdefinition3983structured-systems-analysis-and-design-method-ssadm A Good introduction to dynamic systems development (DSDM) httpswww.dsdm.orgwhat-is-dsdm  |
| Other assessment materials attached to this Assignment Brief | *e.g. work sheets, risk assessments, case study* |
| **FOR L1/2 FIRSTS ONLY:** If you have not achieved the Level 2 criteria, your work will be assessed to determine if the following Level 1 criteria have been met.  |
| To achieve the criteria, you must show that you are able to: | Unit | Criterion reference |
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