Unit:
Information Technology Project Management

Assignment title:
Project Management for Food Delivery Mobile App Development

Sample Assignment

Marking Scheme

Markers are advised that, unless a task specifies that an answer be provided in a particular form, then an answer that is correct (factually or in practical terms) **must** be given the available marks. If there is doubt as to the correctness of an answer, the relevant NCC Education materials should be the first authority.

This marking scheme has been prepared as a **guide only** to markers and there will frequently be many alternative responses which will provide a valid answer.

Each candidate's script must be fully annotated with the marker's comments (where applicable) and the marks allocated for each part of the tasks.

Throughout the marking, please credit any valid alternative point.

Where markers award half marks in any part of a task, they should ensure that the total mark recorded for the task is rounded up to a whole mark.

Marker's comments:

Moderator's comments:

Mark:	**Moderated mark:**	**Final mark:**

Penalties applied for academic malpractice:

Scenario

A popular food delivery service has identified a need to develop a mobile application to enhance user experience and increase customer engagement.

The application aims to streamline the ordering process, improve delivery tracking, and offer personalised recommendations to users.

The project has been approved, and you have been appointed as the project manager to oversee its execution.

After two weeks of project execution, the development team has faced challenges in backend development, resulting in delays in this aspect of the project. Here's a scenario outlining the updated project status:

- **Development:**
  - **Backend Development:** The backend development tasks, including setting up servers, databases, and APIs, have encountered unexpected complexities, leading to slower progress than anticipated. Only 40% of backend development tasks have been completed.

  - **Frontend Development:** Despite the backend delay, frontend development tasks have progressed as planned, with 70% of UI design and layout tasks completed.

  - **Integration:** Due to the backend delay, integration testing has been postponed until more backend functionalities are available for testing.

- **Testing:**
  - **Unit Testing:** Unit tests for frontend components have been implemented and executed successfully. However, limited backend functionalities have impacted the progress of backend unit testing, with only 30% of tasks completed.

  - **Integration Testing**: Integration testing tasks have been put on hold until backend development catches up, resulting in a delay in overall testing progress.

- **Deployment:**
  - **Deployment Plan:** The deployment plan has been drafted but is contingent upon the completion of backend development and successful testing. Deployment tasks are expected to be delayed accordingly.

- **Stakeholder Engagement:**
  - **Stakeholder Meetings:** Stakeholder meetings have highlighted concerns about the backend development delay and its potential impact on project

timelines. Management has requested regular updates and mitigation plans to address the delay.

- **Feedback Collection:** Feedback from stakeholders has emphasised the importance of resolving backend issues promptly to minimise project delays and ensure timely delivery of the mobile application**.**

Task 1 – Demonstrate a critical understanding of the nature of IT projects and software quality - 20 marks

a) Explain the purpose of a feasibility study and establishing a business case in the beginning phase of an IT project. **(10 marks)**

0 - 2 marks	3 marks	4 - 5 marks	6 marks	7 - 10 marks
No coherent answers or irrelevant purpose.	***Poor understanding of the purpose and stage in a project of a feasibility study. Limited acknowledge ment of the business case being used to assess some limited aspects of viability but with little or no specific mention of costs/benefits to the business.***	***A clear distinction of both costs and benefits in terms of viability and technical requirements. A clear purpose of the study stated that shows its purpose to present options for the project.***	***A good understanding of the feasibility study and business case in providing a feasibility report which will assess budget constraints and technical constraints for the business. Along with time constraints and business/organi sational constraints. Although there may be some weakness in fully separating each constraint.***	***An excellent understanding demonstrated by a clear distinction between each of the significant factors: Budget constraints costs/benefits clearly articulated with additional constraints related to the ability of the business to cover budgets. Discussion of technical constraints fully explaining the ability of the business to provide /buy-in technical resources. Analysis of organisation feasibility of maintaining and operating the proposed system.***

b) Discuss the type of challenges typically encountered in an IT system and describe the particular challenges you have identified in this project scenario. The project sponsor has stressed the importance of providing a high-quality solution. Explain what software quality means and provide some examples from the scenario. **(10 marks)**

0 - 2 marks	3 marks	4 - 5 marks	6 marks	7 - 10 marks
Minimal or no discussion of relevant typical challenges.	***Basic understanding of typical challenges with little linkage to the specific challenges identified in the project. A weak understanding of software quality with little or no relevant examples from the project.***	***Good understanding of typical challenges encountered and clear identification of some of the obvious challenges from the project such as dealing with multiple stakeholders, staff morale and personnel allocation issues. Clear understanding of software quality with explanations that include at least one from fitness for purpose or quality characteristics.***	***A clear understanding of IT challenges with a detailed understanding of quality issues. A clear identification of particular quality challenges in the project with clear identification of potential issues with quality characteristics. Identification of some examples from the project such as purpose – to provide reliable on-line interaction and compatibility with existing legacy system maintainability when knowledgeable staff leave.***	***Comprehensive understanding of challenges with a detailed understanding of quality issues. A clear identification of particular quality challenges in the project. Comprehensive understanding of software quality. A concise explanation of the meaning of quality relating to particular project examples. Quality control to be carried out in each stage of the project. Quality standards that can be employed to ensure control procedures are used.***

Task 2 – Explain the use of project planning techniques - 20 marks

a) Explain the use of activity networks. **(10 marks)**

0 - 2 marks	3 marks	4 - 5 marks	6 marks	7 - 10 marks
No or minimal explanation.	***Weak explanation, which does not fully explain the use of activity diagrams.***	***Clear explanation of activity network use.***	***Clear and detailed explanation of activity networks.***	***Comprehensive explanation of activity networks. Good understanding of the breakdown of all activities and the correct order in which they need to be completed.***

b) Explain what Gantt charts are. **(10 marks)**

0 - 2marks	3 marks	4 - 5 marks	6 marks	7 - 10 marks
No or Minimal explanation.	***Weak explanation of the Gantt chart.***	***Clear explanation of key features Grantt chart.***	***Clear representation of chart and clear explanation of what the chart is meant to represent. omissions/ errors.***	***Comprehensive explanation of the chart. Explaining key roles in progress, important baseline snapshots and use of updates to show actual progress.***

Task 3 – Explain procedures needed to monitor, control and report on an IT project - 20 marks

a) Discuss the typical activities and information involved in project control and monitoring. **(20 marks)**

0 - 4 marks	5 - 6 marks	7 - 10 marks	11- 13 marks	14 - 10 marks
Minimal points of discussion showing no real understanding of activities or methods used in monitoring and control.	***Basic understanding shown in discussion of some of the activities from the control cycle. No clear formulation of understanding monitoring activities or events to enable control.***	***Good clear discussion of typical activities that should be monitored. This will include deliverables and milestones but might not be fully comprehensive.***	***Very good discussion that includes a reasonably comprehensive range of typical activities and events. This will include deliverable intermediaries, milestones and deadlines. Discussion should include some difficulties such as monitoring partially completed deliverables. Some measurement activities might be omitted.***	***Clear and comprehensive discussion of a wide range of activities and events in the project control cycle. Discussion will embrace difficulties often encountered and offer ways of solving them. Control processes should be discussed to include quality processes. Measurements such as size drivers, percentage completed and effort drivers will be discussed.***

Task 4 – Discuss and apply the principles of project risk management - 20 marks

a) Define the meaning of project risk and state **THREE (3)** ways in which risk can be handled. **(10 marks)**

0 - 2 marks	3 marks	4 - 5 marks	6 marks	7 - 10 marks
No meaningful definition of risk. Little or no statement of ways in which risk can be handled.	***Weak definition of risk. At least one way in which risk can be handled.***	***Clear definition of project risk. Clear statement of three choices for handling project risk. Some detail in each choice statement sufficient to delineate them.***	***Very good definition of risk which will include some of the key elements of the definition given.*** ***The three ways of handling the project risk will show for each the context in which they address the definition of risk given.***	***Excellent and detailed definition of the meaning which will acknowledge more than one possible definition and clearly show how they differ. Each of the ways for handling risk will be stated and extended by a contextual example.***

b) Identify the project risks that you see in the project scenario and prioritise those risks in a risk register. **(10 marks)**

0 - 2 marks	3 marks	4 - 5 marks	6 marks	7 - 10 marks
No link to identify relevant parts of the scenario.	***Identified some of the project risks but not all obvious risks. An attempt to prioritise risks but no complete entry for a register.***	***Identification of all <u>obvious</u> project risks from the scenario. A prioritised list has been constructed for a register. The prioritisation might not have considered the possible approaches to risk such as quantitative v qualitative.***	***Clear identification of obvious risks and importance /significance of the risk prioritised to a quantitative/qualitative standard eg high/ low or 10% to 20% and an indication of impacts. Laid out in a risk register***	***Excellent level of risk identification with identification of the probability /likelihood. The impact of the risk to the project well considered in relation to the position in the schedule that the risk occurs and the effect on quality, time and possible costs. Evidence of well thought out method of priority measurement by adopting probability impact grid or similar approach or alternative approaches such as risk reduction leverage.***

Task 5 – Demonstrate a critical understanding of project teamwork- 20 marks

a) Explain how team building theory is useful in helping to construct project teams. **(10 marks)**

0 - 2 marks	3 marks	4 - 5 marks	6 marks	7 - 10 marks
No clear understanding of team theory and no coherent explanation of how team theory is useful.	***Some identification of team theory and an attempt to show its usefulness but limited explanation and no clear context of usefulness in helping to construct teams.***	***Good clear explanation of how team theory is used in building teams. Explanation will include at least one theory approach such as acknowledgem ent of stages in a team during the building of a project from forming to adjourning. Alternatively, a team dynamics approach from shaper to specialist.***	***Very good explanation that includes more than one theory approach and extended explanation to identify how the theories help in specific contexts such as repeated team conflict or sub optimal team performance.***	***Excellent level of explanation that comprehensively covers theories such as Tuchman-Jensen and Belbin. The contexts in which both approaches can be used in team building. Clearly identifying Tuckma-Jensen in understanding team building from initiation to completion and the usefulness of that understanding to the management of a project. The Belbin approach will be clearly explained with the context of individual personality types of team members being useful at key points in team building and usefulness to the project manager in selecting a satisfactory mix of types.***

b) Describe the various appropriate management styles that have been identified in managing development projects and state the management style most appropriate for the scenario project. **(10 marks)**

0 - 2 marks	3 marks	4 - 5 marks	6 marks	7 - 10 marks
Little or no valid description of a management style and no link to the project scenario.	***Basic understanding of a management style with one or two appropriate styles described. Weak association of an appropriate style for the project scenario.***	***Good clear descriptions of the management styles which are clearly delineated between autocrat /democrat. A coherent analysis of the project scenario and a clear rationale for choosing the selected management style.***	***Very good detailed descriptions of the various styles with a clear understanding shown of the standard axis between styles of autocrat v democrat and directive v permissive. Very Good analysis of the project scenario with the benefits and disadvantages in identifying the chosen styles and the effects a particular style might have on the project. Minor weaknesses***	***Excellent descriptions of the management styles with a comprehensive evaluation of the advantages and disadvantages to a particular style for the project type and team dynamic identified in the scenario. A clear evaluation of the various styles and the way the style chosen is the most appropriate and why other styles are not seen as good in the context. An extended description which includes a situational style will be given.***

Learning Outcomes matrix

Task	Learning Outcomes assessed	Marker can differentiate between varying levels of achievement
1	1,4	Yes
2	1,2	Yes
3	3	Yes
4	5	Yes
5	6	Yes

Grade descriptors

Learning Outcome	Fail	Referral	Pass	Merit	Distinction
Demonstrate a critical understanding of the nature of IT Projects, their activities and challenges.	Little to no understanding of the nature of IT projects. Limited or no knowledge of the fundamental activities and challenges associated with IT projects.	Basic understanding with significant gaps. Limited critical analysis and practical application. Poor communication.	Adequate demonstration of understanding the nature of IT projects, their activities, and challenges.	Thorough and detailed demonstration of understanding the nature of IT projects, their activities, and challenges.	Exceptional and nuanced demonstration of understanding the nature of IT projects, their activities, and challenges, with innovative insights.
Explain and use project planning principles and techniques to address broadly defined, complex problems.	Minimal or no explanation of project planning principles and techniques. No application of project planning	Basic explanation of some project planning principles and techniques but lacks detail or comprehensive coverage. Basic application of project planning techniques to	Adequate explanation of project planning principles and techniques relevant to addressing broadly defined, complex problems.	Thorough and detailed explanation of project planning principles and techniques, covering a wide range of	Exceptional and advanced explanation of project planning principles and techniques, demonstrating mastery and innovation.

	techniques to address complex problems.	address broadly defined, complex problems, but lacks depth or innovation.	Reasonable analysis and evaluation of how project planning principles and techniques can be applied to solve complex problems.	strategies. Detailed and comprehensive application of project planning techniques to address broadly defined, complex problems, with innovative approaches.	Exceptionally innovative and strategic application of project planning techniques to address broadly defined, complex problems, with advanced approaches and foresight.
Explain and apply procedures needed to monitor, control and report upon an IT project.	Lack of understanding of what constitutes procedures for monitoring, controlling, and reporting on IT projects.	Some understanding of procedures for monitoring, controlling, and reporting on IT projects, but may not address all aspects.	Adequate understanding of procedures for monitoring, controlling, and reporting on IT projects, with relevant examples.	Detailed understanding of procedures for monitoring, controlling, and reporting on IT projects, including nuances and challenges.	Exceptional understanding of procedures for monitoring, controlling, and reporting on IT projects, with insightful analysis of their complexities and strategic application.
Demonstrate a critical understanding of quality, its attributes and how it can be assessed and assured.	Shows little to no understanding of quality, its attributes, and methods of assessment and assurance. Unable to define key concepts.	Basic understanding of quality, its attributes, and methods of assessment and assurance, with significant gaps. Limited	Adequate understanding of quality, its attributes, and methods of assessment and assurance. Can explain key concepts,	Good understanding of quality, its attributes, and methods of assessment and assurance. Provides detailed explanations of key concepts.	Excellent and comprehensive understanding of quality, its attributes, and methods of assessment and assurance. Thorough

		explanation of key concepts.	though may lack depth.		explanations of key concepts.
Discuss and apply the principles of project risk management.	Shows little to no understanding of project risk management principles. Unable to define or discuss key concepts.	Basic understanding of project risk management principles, with significant gaps. Limited explanation of key concepts.	Adequate understanding of project risk management principles. Can explain key concepts, though may lack depth.	Good understanding of project risk management principles. Provides detailed explanations of key concepts.	Excellent and comprehensive understanding of project risk management principles. Thorough explanations of key concepts.
Demonstrate acritical understanding of project organisation and teamwork	Shows little to no understanding of project organisation and teamwork principles. Unable to define or discuss key concepts.	Basic understanding of project organisation and teamwork principles, with significant gaps. Limited explanation of key concepts.	Adequate understanding of project organisation and teamwork principles. Can explain key concepts, though may lack depth.	Good understanding of project organisation and teamwork principles. Provides detailed explanations of key concepts.	Excellent and comprehensive understanding of project organisation and teamwork principles. Thorough explanations of key concepts.