

Q:- Answer the following question

What is Network Planning, and why is it important in project management

1. What is the difference between PERT and CPM in project analysis?

Q:- Given the following project activities and their precedence relationships

Activity	Predecessor	Duration (days)
A	—	3
B	A	5
C	A	4
D	B, C	6

Using PERT, calculate the expected time for each activity

Q:-

Activity	Optimistic (O)	Most Likely (M)	Pessimistic (P)
A	2	4	6
B	3	5	9
C	1	2	3

Q:- Can you explain your graduation project, including its main idea, objectives, methodology, implementation process, results, and possible future improvements? **Q:-** A project has the following data at the end of week 4:

Planned Value (PV) = \$80,000

Earned Value (EV) = \$70,000

Actual Cost (AC) = \$90,000

Budget at Completion (BAC) = \$250,000

:Required

.Calculate CV, SV, CPI, and SPI .1

Interpret the project performance in terms of cost and .2
.schedule

.Determine whether the project is over or under budget .3

Q: - Answer the following question

What is Network Planning, and why is it important in project management?

Network Planning: It is a graphical representation of project activities, showing their logical sequence and interdependencies.

تخطيط الشبكة: تمثيل رسومي لأنشطة المشروع وتسلسلها.

Importance: It is crucial in project management because it helps identify the critical path, allocate resources efficiently, estimate the total project duration, and monitor progress.

أهميته: يساعد في تحديد المسار الحرج، تخصيص الموارد، وتقدير وقت المشروع بدقة.

1. What is the difference between PERT and CPM in project analysis?

PERT (Program Evaluation and Review Technique): Uses three-time estimates (Optimistic, Most Likely, Pessimistic) to calculate expected time.

It is probability-based and best suited for projects with high uncertainty (e.g., R&D projects).

PERT: يعتمد على الاحتمالات (3 تقديرات زمنية) للمشاريع غير المؤكدة.

CPM (Critical Path Method): Uses a single, deterministic time estimate.

It is cost-focused and best suited for repetitive projects with well-known task durations (e.g., construction).

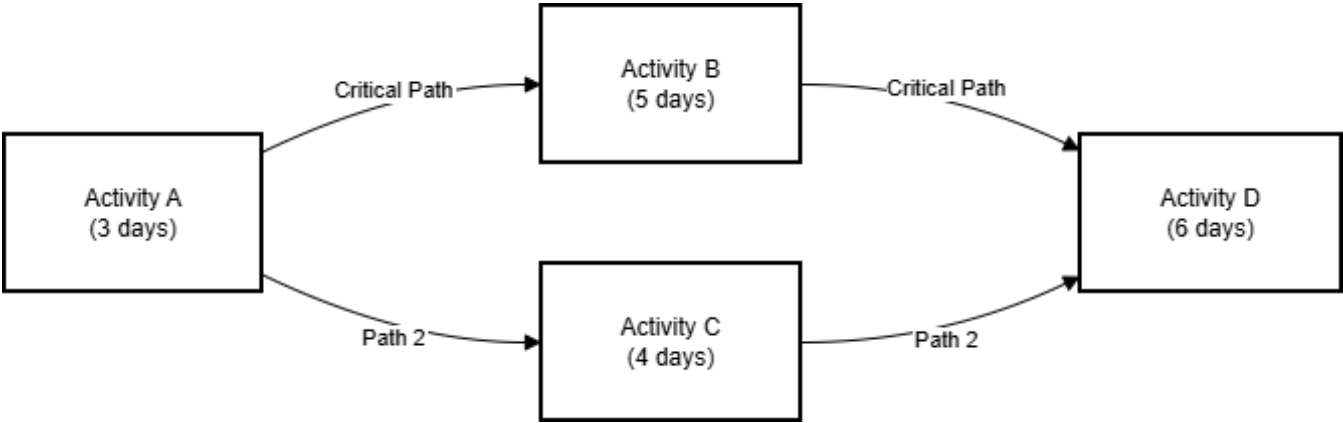
CPM: يعتمد على وقت واحد محدد للمشاريع المتكررة.

Q: - Given the following project activities and their precedence relationships

Network Diagram Check (Precedence: A=3, B=5, C=4, D=6)

Path 1: A → B → D = 3 + 5 + 6 = 14 days (Critical Path)

Path 2: A → C → D = 3 + 4 + 6 = 13 days



Q: - Using PERT, calculate the expected time for each activity

Activity	O	M	P	Formula: $T_e = \frac{(O + 4M + P)}{6}$	Expected Time
A	2	4	6	$\frac{(2 + 4(4) + 6)}{6} = \frac{24}{6}$	4
B	3	5	9	$\frac{(3 + 4(5) + 9)}{6} = \frac{29}{6}$	5.33
C	1	2	3	$\frac{(1 + 4(2) + 3)}{6} = \frac{12}{6}$	2

Q: - Can you explain your graduation project, including its main idea, objectives, methodology, implementation process, results, and possible future improvements?

Main Idea: Developing a "Flutter Medicine Tracker and Notification App" to act as a smart, personal medical schedule manager.

الفكرة الرئيسية: – هنا تشرح فكرة المشروع العامة

Objectives: To minimize medication non-adherence, reduce dosage errors, and provide a reliable digital health log.

الأهداف: – هنا تتكلم عن اهداف المشروع

Methodology & Implementation: Developed using the Dart programming language and the Flutter framework for cross-platform mobile compatibility. It utilizes a local database for secure offline data storage and background services for triggering alarms.

Results: A fully functional, user-friendly mobile application that accurately delivers timely medication reminders.

النتائج: – هنا توضح النتائج

Future Improvements: Syncing the app with smartwatches for wrist notifications, and integrating AI-driven OCR (Optical Character Recognition) to automatically scan medical prescriptions.

مشروعي هو تطبيق تتبع الأدوية باستخدام فلاتر. يهدف لتقليل أخطاء الجرعات عبر إشعارات دقيقة. مستقبلاً يمكن ربطه بالساعات الذكية وإضافة الذكاء الاصطناعي لقراءة الروشتة.

تنبيه: – الحل هنا مثال للجواب حيث يجب ان تجيب عن مشروعك الذي عملت عليه.

Q: A project has the following data at the end of week 4:

PV = \$80,000

EV = \$70,000

AC = \$90,000

BAC = \$250,000

Required: 1. Calculate CV, SV, CPI, and SPI.

- CV (Cost Variance):** $EV - AC = 70,000 - 90,000 = -\$20,000$
- SV (Schedule Variance):** $EV - PV = 70,000 - 80,000 = -\$10,000$

Index	Formula & Calculation	Result
CPI (Cost Performance Index)	$\frac{EV}{AC} = \frac{70,000}{90,000}$	0.77
SPI (Schedule Performance Index)	$\frac{EV}{PV} = \frac{70,000}{80,000}$	0.875

2. Interpret the project performance in terms of cost and schedule.

Cost: With a negative CV and $CPI < 1$ (0.77), the project is performing poorly and costing more than expected.

Schedule: With a negative SV and $SPI < 1$ (0.875), the project is progressing slower than originally planned.

النتائج سلبية: المشروع متأخر عن الجدول الزمني وتكلفته أعلى من المخطط لها.

3. Determine whether the project is over or under budget.

The project is **Over Budget** because the actual cost of the work performed (AC) is significantly higher than the value of the work actually accomplished (EV).

المشروع يتجاوز الميزانية المحددة (Over Budget).