

**Kerzner's Project
Management Logic
Puzzles**

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Clues:

- 1. John's progress report was not five pages in length.
- 2. Bob's report had a flavor of neutrality in it.
- 3. The four-page document reported unfavorable results but the five-page forecast report showed favorable results.







| Project Manager | Type of Report | Number of Pages | Analysis |
|-----------------|----------------|-----------------|----------|
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Logic Problem #2: Types of Contracts _____

In the figure below are six different contract types for six different project managers. From the clues under the figure, determine the contract type for each Project Manager and their position in the figure. Knowledge of each type of contract is essential to solve the problem.

Project Manager: Jane; Richard; Paul; Frank; Tim; Alice

Contract Type: Cost-Plus-Percentage-of-Cost (CPPC); Firm-Fixed-Price (FFP); Cost-Plus-Incentive-Fee (CPIF); Fixed-Price-Incentive-Fee (FPIF); Cost-Plus-Fixed-Fee (CPFF); Time & Materials (T&M)

| | | | | | |
|--|------------------------|---|------------------------|---|------------------------|
| <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">1</div>  | PM _____ TYPE _____ | <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">2</div>  | PM _____ TYPE _____ | <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">3</div>  | PM _____ TYPE _____ |
| <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">4</div>  | PM _____ TYPE _____ | <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">5</div>  | PM _____ TYPE _____ | <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto 10px auto;">6</div>  | PM _____ TYPE _____ |

Clues:

1. The contract type, which today is illegal in the government, is located in position 4 in the diagram.
2. Tim's project has a contract that contains a "ceiling" and "floor" on profits.
3. Alice's contract is in an even-numbered position in the diagram.
4. The two incentive-type contracts are located in different rows in the figure and horizontally adjacent to only one other contract, and both of the adjacent contracts are for projects managed by female Project Managers.
5. Frank's project, which is not in position 3, and Richard's project are not adjacent to each other either horizontally or vertically and are located in different rows.
6. The contract type with the maximum risk exposure to the seller is to the right (as you look at the figure) and next to the Cost-Plus contract, where the fee is defined as a dollar value rather than as a percentage, and above the contract type that contains a point-of-total-assumption term.

Logic Problem #3: Redesigning a Component _____

Andrea, the executive sponsor for the project, needed to get a critical problem resolved. A piece of equipment had just failed and a new design had to be developed. She convened a team of four of her project team members, whose names were Bob, Fred, Henry, and Louis, to analyze a piece of equipment that had failed. The team members are in positions 1–4 in the figure below. Each person had a different set of skills to bring to the problem-solving session, which was to find the cause of the failure and redesign the component. Each had a different title and had worked on project teams for a different number of years.

The team successfully identified the problem and redesigned the component with Andrea and three of the four team members agreeing with the new design. The person on the right (i.e., the grouch), who never trusts anyone else's solution except his own, seemed unhappy that someone else's design other than his was accepted by the group.

From the clues below, identify the position of each person in the figure, their name and title, and the number of years they had been working on project teams. Note: Assume that left and right are as you look at the figure below.

- Name:** Bob; Fred; Henry; Louis (Andrea is on the left, of course)
- Title:** Project Manager; Assistant Project Manager; Electrical Engineer; Mechanical Engineer
- Years of Experience:** 10 years; 14 years; 17 years; 21 years



①

②

③

④

Name _____

Title _____

Years _____

Clues:

1. Fred, the Electrical Engineer, is standing somewhere to the left of the person who has 10 years of experience.
2. Louis, who is not standing next to Bob, is shown standing further to the right in the figure than the Project Manager.
3. The person with 14 years of experience is standing in position 3 in the figure.
4. The Mechanical Engineer is standing immediately to Henry's left.
5. The number of years of experience of the Assistant Project Manager is a prime number.

Hint: If you need help, another clue can be found on p. 195.

Logic Problem #4: The Unfortunate Overruns

Five Project Managers were sitting together at lunch discussing their cost overruns. From the figure below and the accompanying clues, identify the full name of each Project Manager, the reason for their cost overrun, and the size of each Project Manager’s cost overrun.

| | | Surname | | | | | Size of Overrun | | | | | Reason for Overrun | | | | |
|--------------------|------------------|----------|-------|---------|--------|-----------|-----------------|-------|--------|--------|--------|--------------------|---------------|------------------|--------------|--------------|
| | | Ashcroft | Bonds | Carlton | Denton | Edgewater | \$10K | \$50K | \$100K | \$200K | \$300K | Bad SOW | Bad Estimates | Faulty Equipment | Wrong People | Poor Quality |
| First Name | Andrew | | | | | | | | | | | | | | | |
| | Bob | | | | | | | | | | | | | | | |
| | Carol | | | | | | | | | | | | | | | |
| | David | | | | | | | | | | | | | | | |
| | Edgar | | | | | | | | | | | | | | | |
| Reason for Overrun | Bad SOW | | | | | | | | | | | | | | | |
| | Bad Estimates | | | | | | | | | | | | | | | |
| | Faulty Equipment | | | | | | | | | | | | | | | |
| | Wrong People | | | | | | | | | | | | | | | |
| | Poor Quality | | | | | | | | | | | | | | | |
| Size of Overrun | \$10K | | | | | | | | | | | | | | | |
| | \$50K | | | | | | | | | | | | | | | |
| | \$100K | | | | | | | | | | | | | | | |
| | \$200K | | | | | | | | | | | | | | | |
| | \$300K | | | | | | | | | | | | | | | |

Clues:

1. None of the Project Managers have the same initial for their first and last names.
2. David Carlton's overrun, which was not \$100K, was the result of poor estimates by the engineering managers.
3. Ashcroft spent more than one hour complaining about her \$200K overrun.
4. One of the Project Managers complained about a \$50K cost overrun resulting from the wrong people being assigned to the project.
5. Andrew Edgewater's overrun was larger than Carlton's overrun.
6. Bob's overrun was larger than Edgewater's overrun by more than \$100K.
7. Bonds complained about having an overrun resulting from poor quality.
8. The bad Statement of Work (SOW) did not create the largest cost overrun, and the \$200K overrun was not the result of faulty equipment.

| First Name | Surname | Overrun Reason | Overrun Size |
|------------|---------|----------------|--------------|
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Logic Problem #5: Training People in the PMBOK® Guide 2000

Five Project Managers were each asked to set up an internal training program for the company covering certain PMBOK® Guide Areas of Knowledge. The five knowledge areas where trainers were needed were Scope Management, Time Management, Cost Management, Risk Management, and Communications Management. Using the figure below and the accompanying clues, determine the full name of each Project Manager, the knowledge area they chose to teach, and the number of hours they needed for their module. (Note: This problem requires knowledge of the inputs, tools and techniques, and outputs of certain 2000 PMBOK® Guide Areas of Knowledge.)

| | | Surname | | | | | Area of Knowledge | | | | | Time (hr) | | | | |
|-------------------|---------------|---------|-------|---------|-------|--------|-------------------|------|------|------|----------------|-----------|----|----|----|----|
| | | Monroe | Jones | Norwood | Smith | Wilson | Scope | Time | Cost | Risk | Communications | 8 | 10 | 12 | 14 | 16 |
| First Name | Adam | | | | | | | | | | | | | | | |
| | Brian | | | | | | | | | | | | | | | |
| | Carol | | | | | | | | | | | | | | | |
| | Diane | | | | | | | | | | | | | | | |
| | Edward | | | | | | | | | | | | | | | |
| Time (hr) | 8 | | | | | | | | | | | | | | | |
| | 10 | | | | | | | | | | | | | | | |
| | 12 | | | | | | | | | | | | | | | |
| | 14 | | | | | | | | | | | | | | | |
| | 16 | | | | | | | | | | | | | | | |
| Area of Knowledge | Scope | | | | | | | | | | | | | | | |
| | Time | | | | | | | | | | | | | | | |
| | Cost | | | | | | | | | | | | | | | |
| | Risk | | | | | | | | | | | | | | | |
| | Communication | | | | | | | | | | | | | | | |

Clues:

- 1. Brian Jones selected the module where the Work Breakdown Structure (WBS) was neither an input nor an output of any of the processes in any of the knowledge areas.
- 2. Wilson selected the only module where constraints and assumptions were neither an input nor an output of any of the processes in that knowledge area.
- 3. The largest number of hours was assigned to Cost Management.
- 4. Norwood's knowledge area discussed the project charter as either an input or an output.
- 5. Edward selected the only module where lesson learned was neither an input nor an output to any of the processes.
- 6. One of the Project Managers complained that 10 hours might not be enough for her area of knowledge.
- 7. Adam and Carol had areas of knowledge where assumptions and constraints appeared three times as either inputs or outputs to the processes.
- 8. The module with the greatest number of processes required eight hours of training time.

| First Name | Surname | Knowledge Area | Time Needed |
|------------|---------|----------------|-------------|
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Clues:

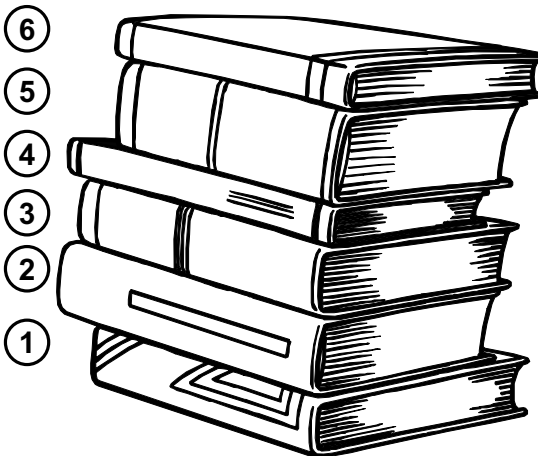
1. Frank was awarded the purple gift certificate for a catalog purchase.
2. Gerald received tickets to a sports event.
3. Norman did not receive use of the company car, which was not paired up with the red catalog gift certificate.
4. The representative from the Quality Division was delighted to receive the gift certificate for dinner at an elegant restaurant.
5. The Project Manager received the blue gift certificate for a catalog purchase.
6. The person from the Engineering Division, who had previously complained that she had never won an award, did not receive the green gift certificate for the catalog purchase or the yellow gift certificate that was paired up with the theatre tickets, which were not awarded to the Accountant.
7. Norman is not from Manufacturing.

| Name | Title | Catalog Gift | Other Gift |
|------|-------|--------------|------------|
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Logic Problem #7: Understanding the Domain Areas

The Wisdom Book Publisher has just published a set of six books, each discussing one of the six PMBOK® Guide Domain Areas: Initiation, Planning, Execution, Control, Closure, and Professional Responsibility. The cover of each book has a different color and each book has a different number of pages. The figure below shows the books, as they would be lying flat on a desk.

Book: Initiation; Planning; Execution; Control; Closure; Professional Responsibility
Color: Red; Yellow; Green; White; Purple; Black
Number of pages: 80; 90; 95; 100; 105; 120



| <u>Position</u> | <u>Domain</u> | <u>Color</u> | <u>Pages</u> |
|-----------------|---------------|--------------|--------------|
| 1 | _____ | _____ | _____ |
| 2 | _____ | _____ | _____ |
| 3 | _____ | _____ | _____ |
| 4 | _____ | _____ | _____ |
| 5 | _____ | _____ | _____ |
| 6 | _____ | _____ | _____ |

Using the clues below, determine the domain area, color, and number of pages for each book.

Clues:

1. The book with the yellow cover is in position 5.
2. The book in position 2 has more pages than the book in position 4.
3. The book with 105 pages is in position 3. The other book with an odd number of pages is in either position 1 or position 2.
4. The book with the most number of pages references only two areas of knowledge in the PMBOK® Guide, and the cover of the book is not red.
5. The books discussing the Execution and Closure domain areas are side by side and both have an even number of pages, but neither book has a green cover.
6. The book discussing the Professional Responsibility domain area has a white cover and is not adjacent to either the purple-colored cover or the black-colored cover, which has an odd number of pages.
7. The domain area that references the fewest PMBOK® Guide Areas of Knowledge is in position 2 in the figure.
8. The book discussing the Planning domain area is at one end of the stack and the book discussing the Control domain area is at the other end.
9. The number of pages in the book in position 1 is greater than the number of pages in the book in position 6 by more than 10 pages.

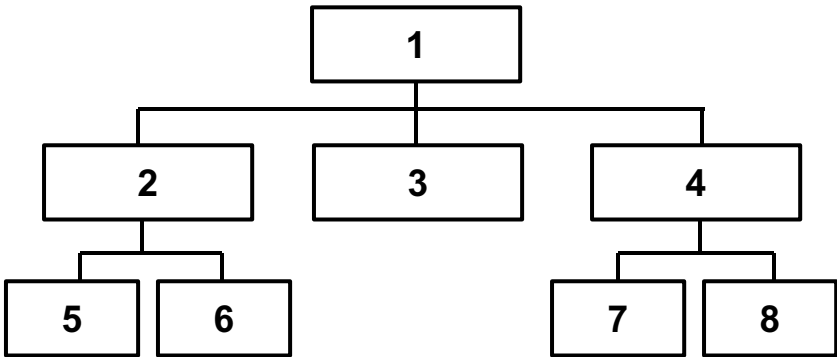
Hint: If you need help, another clue appears on p. 195. Also, an understanding of p. 38 of the 2000 PMBOK® Guide is essential. For this problem, do not consider the number of areas of knowledge related to the Professional Responsibility domain area since it is not included on p. 38 of the 2000 PMBOK® Guide.

Logic Problem #8: The PMO Organizational Structure

A company has just set up a Project Management Office (PMO). Eight people are assigned to the PMO and each has a unique responsibility within the PMO. The organizational chart for the PMO is shown below.

Name: John; Florence; Karen; Mollie; Nellie; Roger; Thomas; William

Responsibility: PMO Manager; Six Sigma Monitoring; Benchmarking; PM Tools; Project Management Methodology (EPM); Mentorship; Project Management Information System (PMIS); Portfolio Management of Projects



| <u>Position</u> | <u>Name</u> | <u>Responsibility</u> |
|-----------------|-------------|-----------------------|
| 1 | _____ | _____ |
| 2 | _____ | _____ |
| 3 | _____ | _____ |
| 4 | _____ | _____ |
| 5 | _____ | _____ |
| 6 | _____ | _____ |
| 7 | _____ | _____ |
| 8 | _____ | _____ |

Using the clues below, determine the name and responsibility assigned to each position.

Clues:

1. Position 1 is naturally the Manager of the PMO.
2. As you look at the figure, there is nobody positioned to the left of Florence, who is not responsible for PMIS, or William.
3. The person responsible for Six Sigma, which is not John's area of expertise, and Mentorship are in the bottom row.
4. Nellie, Karen (who is responsible for EPM), and Roger (who is responsible for PM Tools) have people positioned to their left and right as you look at the organizational chart.
5. Thomas is assigned to position 4.
6. John and the woman responsible for Benchmarking report to the person in position 2.
7. Position 1 is a male but position 2 and position 3 are females.

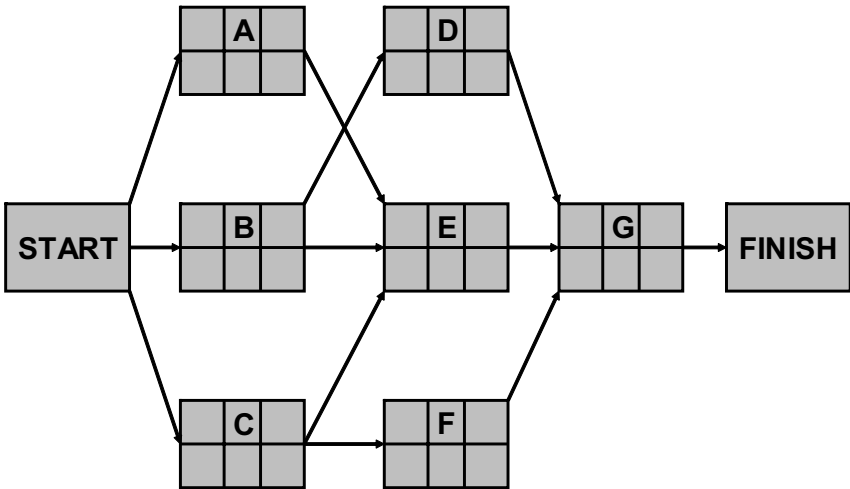
Hint: If you need help, another clue appears on p. 195.

Logic Problem #9: The Mysterious Network Diagram

A Project Manager discovers that his team has neglected to complete the network diagram for the project. The network diagram is shown below. However, the Project Manager has some information available, specifically that each activity, labeled A–G, has a different duration between one and seven weeks. Also, the slack time for each of the activities is known as shown below.

Duration (weeks): 1, 2, 3, 4, 5, 6, 7

Slack time (weeks): 0, 0, 0, 2, 4, 4, 7



Using the clues provided below, determine the duration of each activity as well as the early start (ES), early finish (EF), latest start (LS), and latest finish (LF) times for each activity.

Clues:

1. Activity E is on the critical path.
2. The ES for activity F is 5 weeks.
3. The duration of activity B is 7 weeks.
4. Activity D has 4 weeks of slack, but activity F has a greatest amount of slack.
5. The EF for activity G is 17 weeks.
6. The LF for activity E is 13 weeks.

| <u>Activity</u> | <u>Duration</u> | <u>Early Start</u> | <u>Early Finish</u> | <u>Latest Start</u> | <u>Latest Finish</u> |
|-----------------|-----------------|--------------------|---------------------|---------------------|----------------------|
| A | _____ | _____ | _____ | _____ | _____ |
| B | _____ | _____ | _____ | _____ | _____ |
| C | _____ | _____ | _____ | _____ | _____ |
| D | _____ | _____ | _____ | _____ | _____ |
| E | _____ | _____ | _____ | _____ | _____ |
| F | _____ | _____ | _____ | _____ | _____ |
| G | _____ | _____ | _____ | _____ | _____ |

Logic Problem #10: The Incomplete Status Report

As a continuation of Logic Problem #9, you also discover that the status report for your project is somewhat incomplete. The status report is shown below. From the clues provided, complete the status report.

Clues:

1. For activity B, PV = \$100.
2. For activity C, EV = \$200.
3. For activity D, AC = \$300.
4. Activity A has not started yet.
5. For all of the activities EV (Total) = \$930.

| <u>Activity</u> | <u>PV</u> | <u>EV</u> | <u>AC</u> | <u>SV</u> | <u>CV</u> |
|-----------------|-----------|-----------|-----------|-----------|-----------|
| A | _____ | _____ | _____ | (\$100) | 0 |
| B | _____ | _____ | _____ | 50 | 60 |
| C | _____ | _____ | _____ | 60 | 60 |
| D | _____ | _____ | _____ | 100 | 80 |
| E | _____ | _____ | _____ | 120 | (20) |
| | ===== | ===== | ===== | ===== | ===== |
| Total | _____ | _____ | _____ | _____ | _____ |