Name: Root Cause Analysis (RCA)

Short Description: Root Cause Analysis (RCA) is a systematic process for identifying the fundamental causes of problems or events to determine effective solutions.

Full Description: Root Cause Analysis (RCA) is a problem-solving methodology that focuses on discovering the underlying causes of problems or events. Instead of simply addressing the symptoms, RCA aims to identify the core reasons why an issue occurred. By understanding these root causes, organizations can develop more effective and sustainable solutions to prevent future occurrences. RCA can be performed using a variety of principles, techniques, and methodologies. Core principles of effective RCA include: focusing on correcting root causes rather than symptoms, recognizing the possibility of multiple root causes, emphasizing the "how" and "why" of events (not who was responsible), and employing a methodical approach with concrete cause-effect evidence. The goals of RCA are to discover the root cause, understand how to fix or compensate for the underlying issues, and apply this knowledge to prevent future problems or replicate successes.

Application Area: RCA is used across many industries, including:

- Manufacturing
- Engineering
- Healthcare
- Information Technology
- Quality Management
- Safety Analysis

Step-by-Step Guide How to Apply: While specific RCA methods vary, the general process involves these steps:

1. **Define the Problem/Event**: Clearly describe the issue, including its nature, scope, and impact.
2. **Gather Data**: Collect information related to the problem, including event timelines, affected systems, and any relevant factors.
3. **Identify Possible Causes**: Brainstorm potential reasons why the problem occurred.
4. **Identify Root Cause(s)**: Use RCA techniques to analyze the data and determine the fundamental cause(s). Common techniques include:
    - **5 Whys**: Repeatedly ask "why" to drill down to the basic cause.
    - **Change Analysis/Event Analysis**: Systematically analyze changes or events that led to the problem.
    - **Fishbone Diagram (Ishikawa Diagram)**: Visually map out potential causes, grouped by category.

5. **Develop Solutions**: Identify actions to address the root cause(s) and prevent recurrence.
6. **Implement Solutions**: Put the solutions into practice.
7. **Evaluate and Monitor**: Assess the effectiveness of the solutions and monitor the situation to ensure the problem does not recur.

Link: https://www.tableau.com/analytics/what-is-root-cause-analysis