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Postmortems

Site Reliability Engineering

>>>

Objectives

In this module, we will learn what a postmortem is and how blameless postmortems better serve to the goal of continuous improvement.

Learning Objectives

↘ Define postmortem

↘ Reasons for postmortems

↘ Explain the blameless culture

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What is a Postmortem?

↘ Part of the incident response process

  ~ Detect

  ~ Respond

  ~ Resolve

  ~ LEARN

↘ According to SRE

  ~ *A postmortem is a written report of an incident, its impact, the actions taken to mitigate or resolve it, the root cause(s), and the follow-up actions to prevent the incident from recurring.*

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Postmortem Objectives

↘ Failure is an opportunity for improvement

↘ Learn

~ What went right?

~ What went wrong?

~ Where did we get lucky?

↘ Follow-up actions

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To Blame or Not to Blame

↘ Human tendency is to look for who to blame.

~ [Blameless postmortems don't work. Be blame-aware but don't go negative (techbeacon.com)](techbeacon.com)

↘ It is not the person that failed. It is the system that failed.

~ If the system is not correct, the incident WILL happen again.

~ Focus on the system to make a repeat failure less likely.
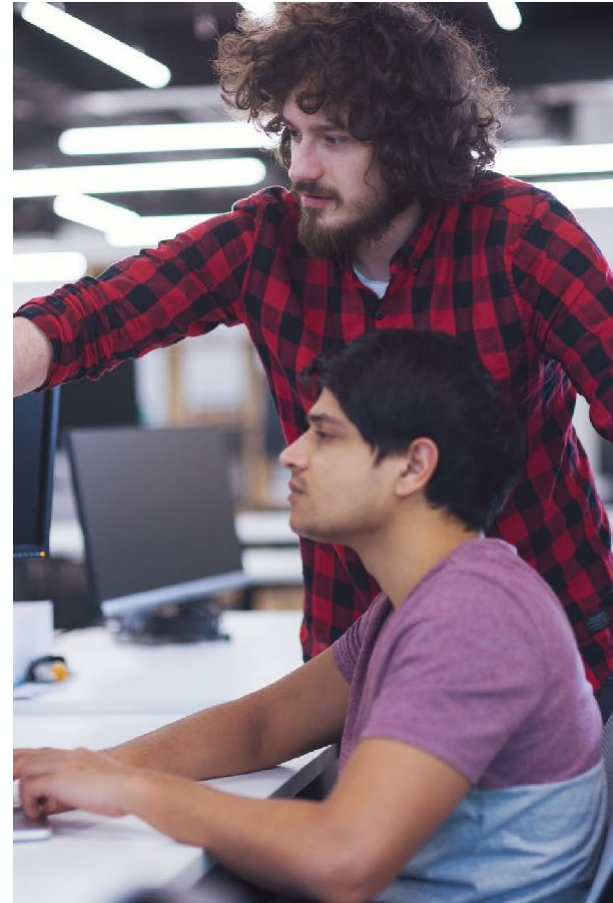
↘ Person is now the expert in how to correct the system.

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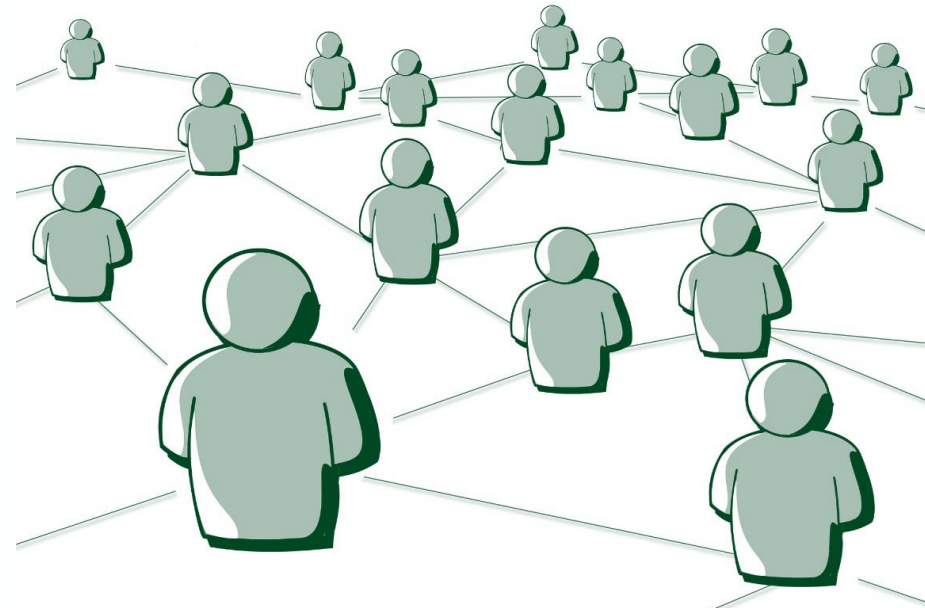
Continuous Improvement – It's the Application

↘ Could this happen again?

↘ What failed?

↘ How can it be corrected?

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Collaboration

↘ Boost team communication

   ~ Open discussion of incident

   ~ Multiple insights into mistakes

   ~ Improved morale

↘ Focus on improving the system

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Activity

↘ Provide a case study of a blameful postmortem

~ Comment on the timing of the postmortem

~ Identify issues with the postmortem process

~ Suggest improvements to the postmortem process

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Work Through a Postmortem

Objectives

In this module, we will learn about learning from our mistakes and how blameless postmortems serve to reduce the likelihood of repeat incidents.

Learning Objectives

↘ Examine the structure of a postmortem report

↘ Work through a blameless postmortem procedure

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Blameless Postmortem Process

↘ Embrace risk

~ Incidents are a learning opportunity

~ Learn from mistakes more than successes

↘ Capture information during incident response efforts

↘ Focus on proactively preventing the incident

~ Watch for the tendency to point fingers

↘ Use a standard format for postmortem reports

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Possible Postmortem Structure   –1

↘ Title

↘ Date of report

↘ Author(s) of report

↘ Status of incident

↘ Summary description of incident

↘ Impact(s)

↘ Root cause(s)

↘ Trigger

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Possible Postmortem Structure   –2

↘ Resolution

↘ Detection

↘ Action items

  ~ Action item, type, owner, bug/ticket, priority, timeframe

↘ Lessons learned

  ~ What went well?

  ~ What went poorly?

  ~ Where did we get lucky?

↘ Timeline

  ~ Detailed listing of the events related to the incident and its response

↘ Supporting information

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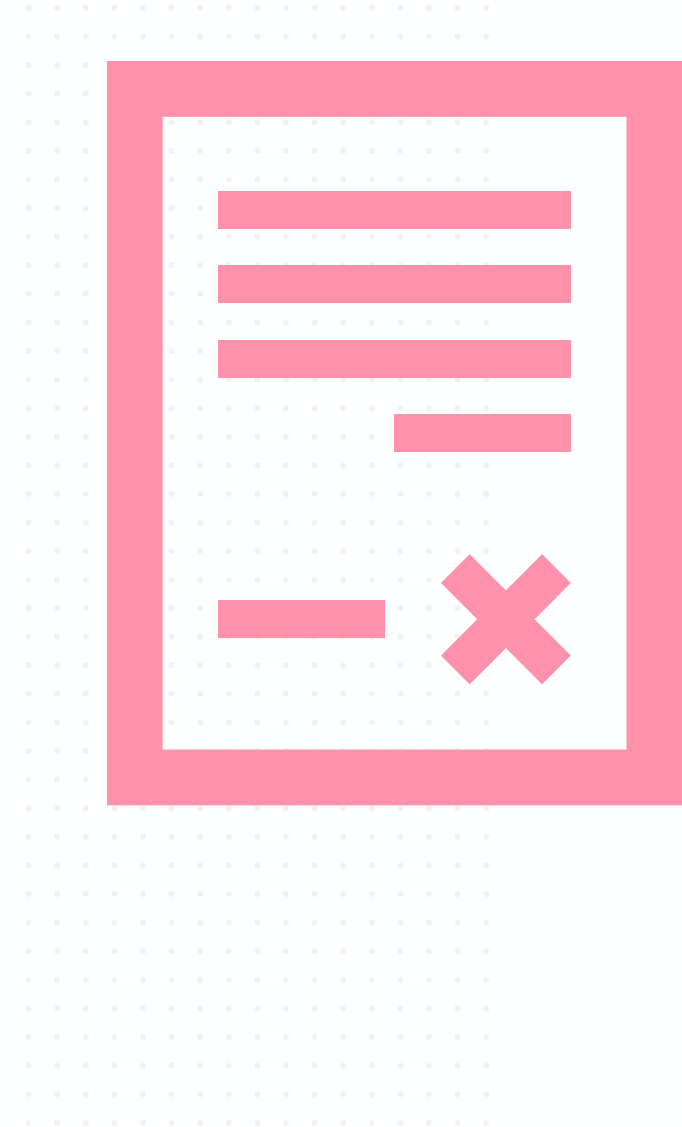
Problem Statement

↘ What was the problem?

↘ First statement of the problem may not be accurate

   ~ What lead up to the incident?

   ~ What unexpected result occurred as a result of changes to the system?

   ~ Why did the incident occur?

Impact Statement

↘ What was the impact?

↘ Who was impacted?

~ Internal

~ External

~ Drawn into the response

↘ What percentage of the customers were impacted?

↘ How much income was lost?
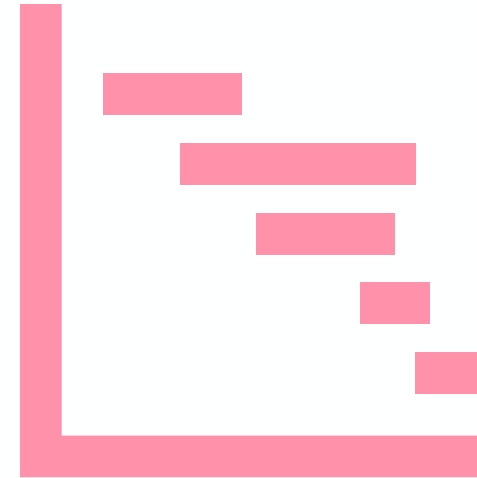
↘ What regulatory or legal consequences were incurred?

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Detection

↘ Who detected the incident?

↘ When did the incident start?

↘ When did the incident become known?

~ Measure mean time to detection (MTTD)

↘ What would improve MTTD?

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Timeline

↘ Tasks completed during recovery

↘ Mean time to recovery (MTTR)

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Root Cause(s)

↘ How to prevent reoccurrence?

↘ Focus on root cause: do not settle for proximate cause.

~ Use Five Whys

- Why did the ship sink?
  - Proximate Cause: Because it filled with water and no longer had any buoyancy.
- Why did it fill with water?
  - Proximate Cause: Because it hit an iceberg that ripped the hull and flooded numerous water-tight compartments.
- Why did it hit an iceberg?
  - Ultimate Cause?

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Corrective Actions

↘ Tasks and actions to be done

~ Deadlines

~ Assignment of responsibility

~ Follow-up

↘ Automate fix?

~ May need to be manual

~ May need to be referred to development team

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Share the Postmortem

↘ The purpose of the postmortem is to learn.

~ Must be shared

~ Must be easily located in the next emergency

~ May need supporting documents which are also shared

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Blameless Culture

↘ Sharing postmortem reports

~ Brown-bag lunch presentations

↘ Practice blameless postmortems

~ Quarterly postmortem challenges

~ Review postmortem reports to catch finger-pointing

↘ Awards and recognition

~ Encourage culture of learning

~ Incentives for sharing failures

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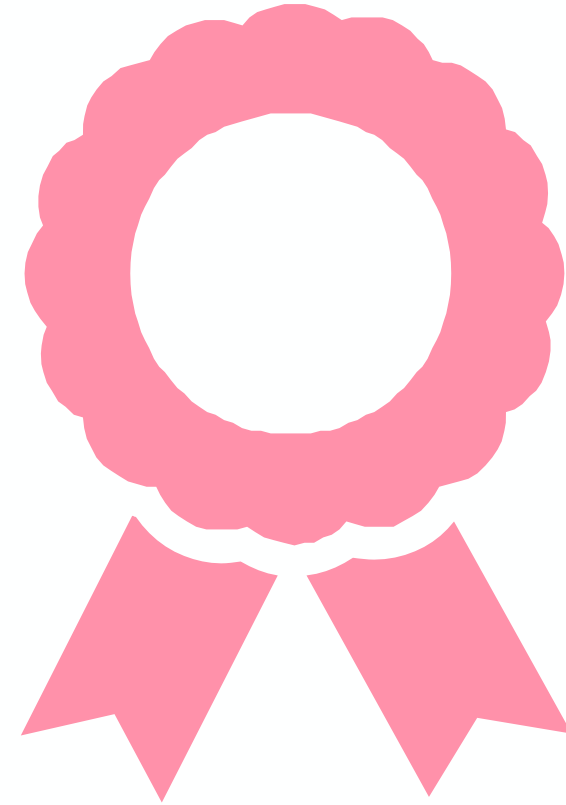
Activity : Example Postmortem Walkthrough

↘ Given the following scenario, identify:

~ The problem that the postmortem is addressing

~ The root-cause

~ Which teams were involved in resolving the problem

~ What could speed up the time-to-recovery next time

~ Other lessons learned

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Summary Q&A

References

↘ [Blameless PostMortems and a Just Culture - Code as Craft](#)

↘ [Google SRE - Postmortem Culture](#)

↘ [Google SRE Workbook - Postmortem Culture: Learning from Failure](#)

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