ENGINEERING ETHICS – MORAL ISSUES

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WHAT IS A MORAL ISSUE?

- Involves more than technical concerns.

- Defined as: Any issue with the potential to help or harm anyone, including oneself.

- Requires ethical reasoning alongside technical decision-making.

TYPES OF MORAL ISSUES

1. Micro-ethics: Daily practice-level problems faced by engineers.

   - Focused on individual conduct.

2. Macro-ethics: Broader societal or systemic issues.

   - Often arise unexpectedly at national or regional levels.

EXAMPLE 1 – STRUCTURAL COLLAPSE

- Engineer learns of a marginally safe bridge.

- Superior instructs silence until next budget cycle.

- Moral Dilemma: Public safety vs. company protocol.

EXAMPLE 2 – CONFIDENTIAL DATA THEFT

- Colleague caught copying sensitive data.
- Choices: Stop friend quietly or Report to management.
- Dilemma: Loyalty vs. accountability.

EXAMPLE 3 — LOST PROTOTYPE

- Engineer loses prototype before deadline.

- Considers outsourcing to avoid job risk.
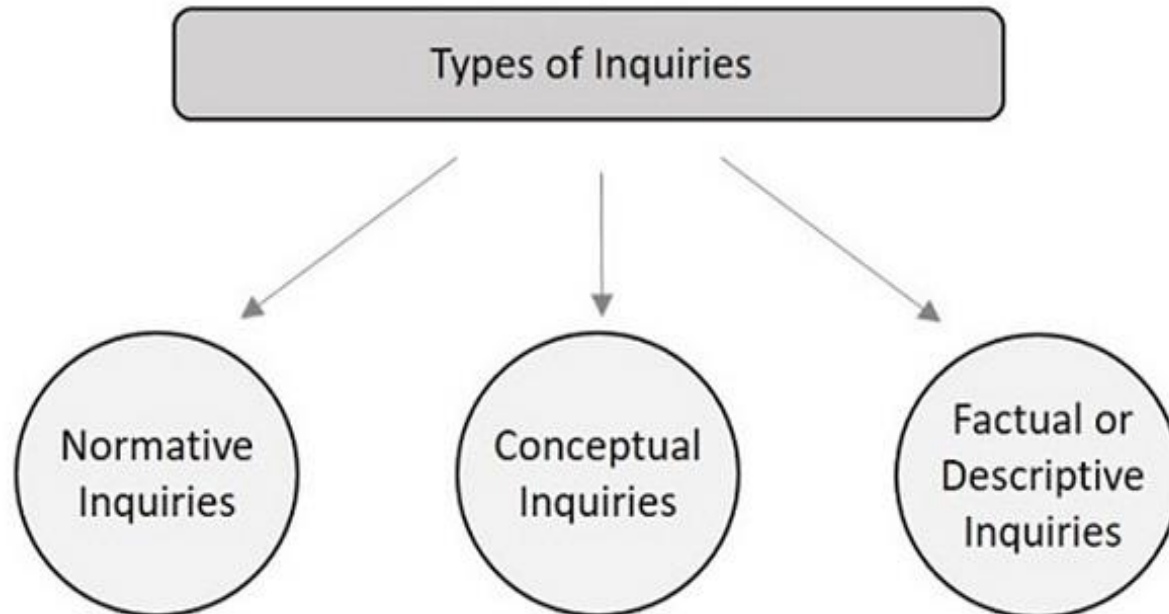
- Question: Is this morally acceptable?

UNDERSTANDING MORAL DILEMMAS

- No single 'correct' answer.

- Solutions often require reflection and ethical judgment.

- Important to follow a slow and clear decision-making process.

TYPES OF INQUIRIES IN ENGINEERING ETHICS

- 1. Normative Inquiries

- 2. Conceptual Inquiries

- 3. Factual/Descriptive Inquiries

NORMATIVE INQUIRIES

- Concerned with 'what ought to be done.'

- Defines morally desirable behaviors and responsibilities.

- Examples: Ensuring public safety, Following legal procedures.

CONCEPTUAL INQUIRIES

- Concerned with the meaning of ethical concepts.

- Explores principles such as:

- - Safety

- - Professionalism

- - Bribery and its moral implications

FACTUAL / DESCRIPTIVE INQUIRIES

- Based on scientific and empirical investigation.

- Helps in:

- - Understanding engineering practices

- - Assessing risks

- - Evaluating professional effectiveness

CONCLUSION

- Engineering decisions often have ethical dimensions.

- Recognizing moral issues helps in responsible decision-making.

- Combining normative, conceptual, and factual insights leads to better ethical practice.

QUESTIONS & DISCUSSION

- Open floor for Q&A or case discussions.