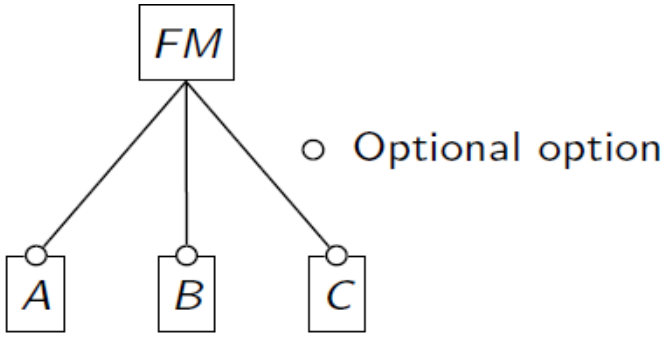
Performance-Influence Models

Warm-up Phase

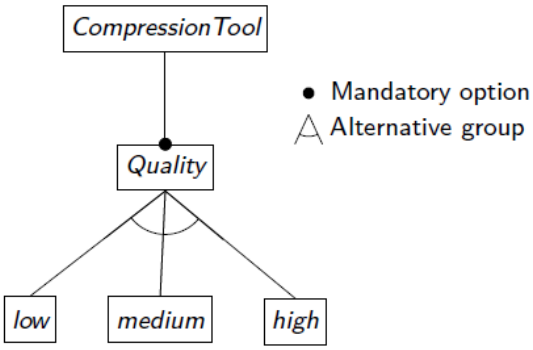


- Options: $\{A, B, C\} \equiv \mathcal{O}$
- Configurations: $\mathcal{C}$ is the set of all configurations, where $c \in \mathcal{C},\ c : \mathcal{O} \to \{0, 1\}$
  Example: $c(A) = 0$ iff option A is deselected in configuration c.
- Performance-Influence Model: $\pi : \mathcal{C} \to \mathbb{R}$

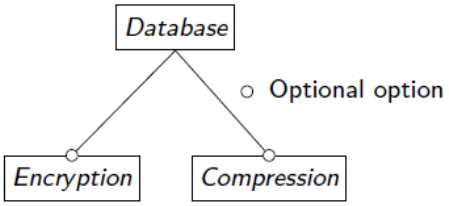
Examples:

$$\pi_1(c) = \overbrace{\underbrace{3}_{coeff.} \cdot \underbrace{c(A)}_{option}}^{Term1} \overbrace{\underbrace{+\,6}_{coeff.} \cdot \underbrace{c(B)}_{option}}^{Term2} \overbrace{\underbrace{+\,0}_{coeff.} \cdot \underbrace{c(C)}_{option}}^{Term3} \overbrace{\underbrace{-\,3}_{coeff.} \cdot \underbrace{c(A) \cdot c(B)}_{options}}^{Term4}$$

$$\pi_2(c) = 1 \cdot c(A) + 5 \cdot c(B) - 6 \cdot c(C) + 7 \cdot c(A) \cdot c(B)$$



$$\pi(c) = -3 \cdot c(low) + 5 \cdot c(high)$$



$$\pi(c) = 5 \cdot c(Compression) + 5 \cdot c(Encryption) - 3 \cdot c(Compression) \cdot c(Encryption)$$

One Performance-Influence Model

Model 1: Simple Performance Model

- **Radar Chart**
  1. **Which is the most relevant configuration option/interaction?**

  Answer:

  How easy/difficult it is to derive the answer?

Very Easy	Easy	Neither	Difficult	Very Difficult
○	○	○	○	○

Comments:

- **Text Plot**
  1. **Which is the most relevant configuration option/interaction?**

Answer:

How easy/difficult it is to derive the answer?

Very Easy	Easy	Neither	Difficult	Very Difficult
○	○	○	○	○

Comments:

- **Ratio Plot**
  1. **Which is the most relevant configuration option/interaction?**

Answer:

How easy/difficult it is to derive the answer?

Very Easy	Easy	Neither	Difficult	Very Difficult
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Comments:

One Performance-Influence Model

Model 2: Complex Performance Model

- **Radar Chart**
  1. **Which is the most relevant configuration option/interaction?**

Answer: ____

How easy/difficult it is to derive the answer?

Very Easy	Easy	Neither	Difficult	Very Difficult
○	○	○	○	○

Comments:

- **Text Plot**
  1. **Which is the most relevant configuration option/interaction?**

Answer: ____

How easy/difficult it is to derive the answer?

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- **Ratio Plot**
  1. **Which is the most relevant configuration option/interaction?**

Answer: ____

How easy/difficult it is to derive the answer?

Very Easy	Easy	Neither	Difficult	Very Difficult
○	○	○	○	○

Comments:

One Performance-Influence Model

Model 1: Simple Performance Model

- **Radar Chart**

  2. Which is the configuration option/interaction that leads to highest performance increase or decrease?

Answer: Option that increases performance :

Option that decreases performance :

How easy/difficult it is to derive the answer?

Very Easy	Easy	Neither	Difficult	Very Difficult
○	○	○	○	○

Comments:

- **Text Plot**

  2. Which is the configuration option/interaction that leads to highest performance increase or decrease?

Answer: Option that increases performance :

Option that decreases performance :

How easy/difficult it is to derive the answer?

Very Easy	Easy	Neither	Difficult	Very Difficult
○	○	○	○	○

Comments:

- **Ratio Plot**

  2. Which is the configuration option/interaction that leads to highest performance increase or decrease?

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Option that decreases performance :

How easy/difficult it is to derive the answer?

Very Easy	Easy	Neither	Difficult	Very Difficult
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Comments:

One Performance-Influence Model

Model 2: Complex Performance Model

- **Radar Chart**
  2. **Which is the configuration option/interaction that leads to highest performance increase or decrease?**

Answer: Option that increases performance :

Option that decreases performance :

How easy/difficult it is to derive the answer?

Very Easy	Easy	Neither	Difficult	Very Difficult
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Comments:

- **Text Plot**
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Option that decreases performance :

How easy/difficult it is to derive the answer?

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Comments:

Two Performance-Influence Models

Model 1: Simple Performance Model

- **Radar Chart**
  1. **Which is the configuration option/interaction where the performance-influence models differs the most?**

Answer:

How easy/difficult it is to derive the answer?

Very Easy	Easy	Neither	Difficult	Very Difficult
○	○	○	○	○

Comments:

- **Text Plot**
  1. **Which is the configuration option/interaction where the performance-influence models differs the most?**

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Comments:

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How easy/difficult it is to derive the answer?

Very Easy	Easy	Neither	Difficult	Very Difficult
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Comments:

Two Performance-Influence Models

Model 2: Complex Performance Model

- **Radar Chart**
  1. **Which is the configuration option/interaction where the performance-influence models differs the most?**

Answer:

How easy/difficult it is to derive the answer?

Very Easy	Easy	Neither	Difficult	Very Difficult
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Comments:

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Comments:

Two Performance-Influence Models

Model 1: Simple Performance Model

- **Radar Chart**
  2. **Which is the configuration option/interaction where the performance-influence models are most similar?**

Answer:

How easy/difficult it is to derive the answer?

Very Easy	Easy	Neither	Difficult	Very Difficult
○	○	○	○	○

Comments:

- **Text Plot**
  2. **Which is the configuration option/interaction where the performance-influence models are most similar?**

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Comments:

Two Performance-Influence Models

Model 2: Complex Performance Model

- **Radar Chart**
  2. **Which is the configuration option/interaction where the performance-influence models are most similar?**

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Comments:

Many Performance-Influence Models

Model 1: Simple Performance Model

- **Radar Chart**
  1. **Which pair of performance-influence models share a large set of influences?**

Answer:

How easy/difficult it is to derive the answer?

Very Easy	Easy	Neither	Difficult	Very Difficult
○	○	○	○	○

Comments:

- **Text Plot**
  1. **Which pair of performance-influence models share a large set of influences?**

Answer:

How easy/difficult it is to derive the answer?

Very Easy	Easy	Neither	Difficult	Very Difficult
○	○	○	○	○

Comments:

- **Ratio Plot**
  1. **Which pair of performance-influence models share a large set of influences?**

Answer:

How easy/difficult it is to derive the answer?

Very Easy	Easy	Neither	Difficult	Very Difficult
○	○	○	○	○

Comments:

Many Performance-Influence Models

Model 2: Complex Performance Model

- **Radar Chart**
  1. **Which pair of performance-influence models share a large set of influences?**

Answer:

How easy/difficult it is to derive the answer?

Very Easy	Easy	Neither	Difficult	Very Difficult
○	○	○	○	○

Comments:

- **Text Plot**
  1. **Which pair of performance-influence models share a large set of influences?**

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Comments:

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Comments:

Many Performance-Influence Models

Model 1: Simple Performance Model

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Comments:

Many Performance Influence Models

Model 2: Complex Performance Model

- **Radar Chart**
  2. **Which pair of performance-influence models share a large set of influences?**

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How easy/difficult is it to derive the answer?

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○	○	○	○	○

Comments:

Feedback on the Interview

Were the questions in this interview meaningful?

Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
○	○	○	○	○

Can you think about other use cases where visualizing performance-influence models is useful?