Inferring Likely Mappings between APIs
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Porting Applications Across Platforms
Need to develop applications for each platform
- Can re-use existing code-base during porting
- Porting applications across platforms is challenging
- Have to handle platform-specific code

API Mapping
- A challenging task in porting: Find equivalent functions between platform-specific APIs
- Manual ways exist to find API mappings
  “App Guy”: Provides windows phone porting assistance by giving mappings between APIs
- Proposed an automated approach to find mappings between APIs across platforms
- Developed a prototype tool to find mappings between graphics APIs of JavaME and Android

Our Approach
Step 1: Collect Apps
Step 2: Get Execution Trace pairs
Step 3: Infer mappings for each trace pair
Step 4: Combine inferences across trace pairs

Intuition: Similar methods produce similar visual effects
- Use similarity between attributes of methods
- Attributes: Frequency, position, name, context
- Construct Factor Graphs

Distribution of Mappings
Mapping Ex: Graphics.drawChar() : { Paint.setColor(); Canvas.drawText() }
- True mappings found within the list of top 10 for 70% of JavaME methods for graphics APIs
- Proposed new approach to infer mappings between APIs
- Need to handle other issues faced during porting of applications