**Process Report**

Project: Paskevicius2012

Process: Retrieval Process

Created by: Luciano Marchezan

Date: 07-25-2020

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| 1 |  | **Phase:** | **Extract** |
| **Activity:** | **Compile Java source code** |
| Description: | Compile Java source code using a standard Java compiler |
| Retrieval Technique: | Dependency Analysis |
| **Artifact:1** | **Input** | |
| **Name:** | **Java source code** |
| Type | Development |
| Description: | Java source code of the systems |
| Extension: | na |
| Link (url): | na |
| Last Update: | 07-25-2020 by Luciano Marchezan |
| **Artifact:2** | **Output** | |
| **Name:** | **java .class files** |
| Type | Development |
| Description: | class files from the Java source code |
| Extension: | .class |
| Link (url): | na |
| Last Update: | 07-25-2020 by Luciano Marchezan |
| 2 |  | **Phase:** | **Extract** |
| **Activity:** | **Extract feature dependencies from source code** |
| Description: | Feature dependencies extracted from Java class files are modeled using a dependency graph G. |
| Retrieval Technique: | Dependency Analysis |
| **Artifact:1** | **Input** | |
| **Name:** | **java .class files** |
| Type | Development |
| Description: | class files from the Java source code |
| Extension: | .class |
| Link (url): | na |
| Last Update: | 07-25-2020 by Luciano Marchezan |
| **Artifact:2** | **Output** | |
| **Name:** | **dependency graph** |
| Type | Domain |
| Description: | A dependency graph described formally to represent features and its dependencies. |
| Extension: | na |
| Link (url): | na |
| Last Update: | 07-25-2020 by Luciano Marchezan |
| 3 |  | **Phase:** | **Categorize** |
| **Activity:** | **Construct feature distance matrix** |
| Description: | A distance matrix is created to describe dependencies among features |
| Retrieval Technique: | Dependency Analysis |
| **Artifact:1** | **Input** | |
| **Name:** | **dependency graph** |
| Type | Domain |
| Description: | A dependency graph described formally to represent features and its dependencies. |
| Extension: | na |
| Link (url): | na |
| Last Update: | 07-25-2020 by Luciano Marchezan |
| **Artifact:2** | **Output** | |
| **Name:** | **feature distance matrix** |
| Type | Domain |
| Description: | An adjacency matrix describing feature dependencies |
| Extension: | na |
| Link (url): | na |
| Last Update: | 07-25-2020 by Luciano Marchezan |
| 4 |  | **Phase:** | **Group** |
| **Activity:** | **Cluster features based on dependency** |
| Description: | Cluster features based on their dependency in a feature tree. |
| Retrieval Technique: | Clustering |
| **Artifact:1** | **Input** | |
| **Name:** | **feature distance matrix** |
| Type | Domain |
| Description: | An adjacency matrix describing feature dependencies |
| Extension: | na |
| Link (url): | na |
| Last Update: | 07-25-2020 by Luciano Marchezan |
| **Artifact:2** | **Output** | |
| **Name:** | **cluster dendrogram** |
| Type | Domain |
| Description: | a cluster representing a set of features |
| Extension: | na |
| Link (url): | na |
| Last Update: | 07-25-2020 by Luciano Marchezan |
| 5 |  | **Phase:** | **Create Feature Model** |
| **Activity:** | **Convert Feature tree into FM** |
| Description: | The cluster tree is converted to a feature model where all nodes from a set of clusters are mapped to feature nodes. |
| Retrieval Technique: | Dependency Analysis |
| **Artifact:1** | **Input** | |
| **Name:** | **cluster dendrogram** |
| Type | Domain |
| Description: | a cluster representing a set of features |
| Extension: | na |
| Link (url): | na |
| Last Update: | 07-25-2020 by Luciano Marchezan |
| **Artifact:2** | **Output** | |
| **Name:** | **Feature model** |
| Type | Domain |
| Description: | a feature model created based on the cluster tree |
| Extension: | na |
| Link (url): | na |
| Last Update: | 07-25-2020 by Luciano Marchezan |
| 6 |  | **Phase:** | **Create Feature Model** |
| **Activity:** | **Generate description of FM in FDL/Prolog** |
| Description: | Results are saved using a Feature Description Language |
| Retrieval Technique: | Dependency Analysis |
| **Artifact:1** | **Input** | |
| **Name:** | **Feature model** |
| Type | Domain |
| Description: | a feature model created based on the cluster tree |
| Extension: | na |
| Link (url): | na |
| Last Update: | 07-25-2020 by Luciano Marchezan |
| **Artifact:2** | **Output** | |
| **Name:** | **Feature model defined in FDL/Prolog** |
| Type | Domain |
| Description: | The feature model results are saved using a Feature Description Language (FDL) |
| Extension: | na |
| Link (url): | na |
| Last Update: | 07-25-2020 by Luciano Marchezan |