|  |  |
| --- | --- |
| **Class Name:** Action | |
| **Description:** Contains the operations to perform on (a) Protocol’s rule(s) | |
| **Responsibilities:**  - Add Action  **-** Delete Action  - Add Filter  - Delete Filter  - Hide Field  - Unhide Field | **Collaborations:**  Filter  Field |
| **Comments:**  Contains the steps by which to: Hide, Rename, Annotate, Create Hook | |

|  |  |
| --- | --- |
| **Class Name:** Annotation | |
| **Description:** Contains metadata of the annotation and annotation itself for a Field | |
| **Responsibilities:**  - Add Annotation  - Update Annotation | **Collaborations:** |
| **Comments:**  Attributes include user name, time added, time modified, and the annotation itself | |

|  |  |
| --- | --- |
| **Class Name:** Expression | |
| **Description:** Contained in a Filter | |
| **Responsibilities:**  - Add primitive  - Delete primitive | **Collaborations:** |
| **Comments:**  Contains one or more primitives defined by Berkeley Packet Filter (BPF) syntax | |

|  |  |
| --- | --- |
| **Class Name:** Field | |
| **Description:** Element of ProtoElement that is editable by Rule(s) in a given Protocol | |
| **Responsibilities:**  - Rename  - Change  - Annotate | **Collaborations:**  Action  Hook  Annotation |
| **Comments:**  Contains the following optional and required attributes:  Optional attributes – hidden (Boolean), mask (Bytes), showdtl (String), showmap (String), showvalue (Integer)  Required attributes – longname (String), name (String), pos (Bytes), show, showname (String), size (Bytes), unmaskedvalue (*required only if the length of the current field is not an integer number of bytes*), value (Hex, String) | |

|  |  |
| --- | --- |
| **Class Name:** File | |
| **Description:** Represents the Script, Historical Copy, and PDML | |
| **Responsibilities:**  - Create Historical Copy  - Modify PDML  **-** Update Algorithm | **Collaborations:**  Historical Copy  PDML, Formatter  Script |
| **Comments:**  Abstract class which handles creation, opening, saving, and modifications to PDML original and Script as well as creation of Historical Copies | |

|  |  |
| --- | --- |
| **Class Name:** Filter | |
| **Description:** Contains Expression(s) by which to visualize and modify the PDML capture | |
| **Responsibilities:**  - Add Filter  - Add Expression  - Remove Expression  - Disable  **-** Enable | **Collaborations:**  Expression |
| **Comments:**  Contains one Berkeley Packet Filter (BPF) expression | |

|  |  |
| --- | --- |
| **Class Name:** Formatter | |
| **Description:** Allows to apply rules to Fields in a Protocol for inspection | |
| **Responsibilities:**  - Apply Rules  - Add Rules  - Delete Rules | **Collaborations:**  Rule |
| **Comments:**  Contains Rules specific to **one Protocol** | |

|  |  |
| --- | --- |
| **Class Name:** GUI | |
| **Description:** Interfaces to PFS functionality | |
| **Responsibilities:**  - Visualizes changes | **Collaborations:** |
| **Comments:**  Accepts inputs and outputs to display | |

|  |  |
| --- | --- |
| **Class Name:** HidingAction | |
| **Description:** The steps to Hide or Show a Tag or a Field (and its associated value) | |
| **Responsibilities:**  - | **Collaborations:** |
| **Comments:** | |

|  |  |
| --- | --- |
| **Class Name:** HistoricalCopy | |
| **Description:** File Class subtype which contains captured network data within PFS | |
| **Responsibilities:**  - Creation of PDML file  - Storage of PDML file | **Collaborations:**  PDML |
| **Comments:**  Attributes include identification as unmodifiable and metadata | |

|  |  |
| --- | --- |
| **Class Name:** Hook | |
| **Description:** Steps to update a value of specific attributes of a Field | |
| **Responsibilities:**  - Create Hook  - Remove Hook  - Update Field | **Collaborations:**  Script  Field |
| **Comments:**  Contains file path to a Script and the input parameters to Script’s algorithm (*associated values of specific attributes defined in the Field*) | |

|  |  |
| --- | --- |
| **Class Name:** Packet | |
| **Description:** Element of the PDML file | |
| **Responsibilities:**  - Display  - Hide | **Collaborations:**  Rule |
| **Comments:**  Contains one ProtoElement and the following required attributes: num (Integer), len (Bytes), caplen (Bytes), and timestamp (Float) | |

|  |  |
| --- | --- |
| **Class Name:** PDML | |
| **Description:** Allows by subtype to modify and analyze network data within PFS | |
| **Responsibilities:**  - Update Field  - Apply Rule  - Save Changes | **Collaborations:**  Field  Rule |
| **Comments:**  Attributes include identification as modifiable and metadata | |

|  |  |
| --- | --- |
| **Class Name:** Protocol | |
| **Description:** Contains Packets by which the matching Formatter can modify | |
| **Responsibilities:**  - Display  - Hide | **Collaborations:**  Rule |
| **Comments:**  Contains one or more Packets | |

|  |  |
| --- | --- |
| **Class Name:** ProtoElement | |
| **Description:** Element of each Packet in a PDML file | |
| **Responsibilities:**  - Edit Field  - Hide Field  - Rename Field  **-** Annotate Field | **Collaborations:**  Rule  Annotate |
| **Comments:** *\* indicates optional attributes*  Contains at least one Field element and the following attributes: name (String), longname\* (String), size (Bytes), and pos (Bytes) | |

|  |  |
| --- | --- |
| **Class Name:** RenamingAction | |
| **Description:** Steps by which to rename a value associated with a field | |
| **Responsibilities:**  - | **Collaborations:** |
| **Comments:** | |

|  |  |
| --- | --- |
| **Class Name:** Rule | |
| **Description:** Properties by which to build the Formatter to modify the Protocol | |
| **Responsibilities:**  - Add Action  - Delete Action  - Add Filter | **Collaborations:**  Action  Filter |
| **Comments:**  Contains Filters and Actions | |

|  |  |
| --- | --- |
| **Class Name:** Scanner (or ProtocolIdentifier) | |
| **Description:** Scans PDML to identify existing and non-existing Formatters for each Protocol | |
| **Responsibilities:**  - Identify Protocols  - Identify Formatters  - Create Formatter | **Collaborations:**  Protocol  Formatter |
| **Comments:**  Reads through Protocols in a modifiable PDML | |

|  |  |
| --- | --- |
| **Class Name:** Script | |
| **Description:** A File which contains a Python algorithm by which to update Field(s) | |
| **Responsibilities:**  - Accepts input parameters  - Accepts modifications to algorithm  - Returns value by running algorithm | **Collaborations:**  File |
| **Comments:**  Contains modifiable algorithm and file path | |