#### AddElementCommand

- std::shared\_ptr< GUII</li>gui
- std::shared\_ptr< SDFormat Parserl > sdformatParser
- sdf::ElementPtr parent element
- sdf::ElementPtr new element
- bool is\_currently\_undoable
- bool is\_currently\_redoable
- + AddElementCommand (std::shared\_ptr< GUII > gui, std::shared\_ptr
  < SDFormatParserI > sdformatParser, sdf::ElementPtr parent\_element, sdf::ElementPtr new element)
- bool Execute() override
- bool ExecuteUndo() override
- bool ExecuteRedo() override
- bool IsUndoable() override
- bool IsRedoable() override
- bool IsThreaded() override
- bool ChangesProgramState Irreversibly() override

### DeleteFlementCommand

- std::shared\_ptr< GUII</li>gui
- std::shared\_ptr< SDFormat Parserl > sdformatParser
- sdf::ElementPtr element \_to\_delete
- sdf::ElementPtr element \_to\_deletes\_parent
- bool is\_currently\_undoable
- bool is\_currently\_redoable
- + DeleteElementCommand (std::shared\_ptr< GUII > qui, std::shared\_ptr
- < SDFormatParserI > sdformatParser, sdf::ElementPtr element\_to\_delete)
- bool Execute() override
- bool ExecuteUndo() override
- bool ExecuteRedo() override
- bool IsUndoable() override
- bool IsRedoable() override
- bool IsThreaded() override
- bool ChangesProgramState Irreversibly() override

#### GenericCommand

- std::function< void</li>()> function\_handle
- + GenericCommand(std ::function< void()> function\_handle)
- bool Execute() override
- bool ExecuteUndo() override
- bool ExecuteRedo() override
- bool IsUndoable() override
- bool IsRedoable() override
- bool IsThreaded() override
- bool ChangesProgramState Irreversibly() override

### ModifyAttributeCommand

Commandl

+ virtual bool ExecuteUndo()=0
+ virtual bool ExecuteRedo()=0
+ virtual bool IsUndoable()=0
+ virtual bool IsRedoable()=0
+ virtual bool IsThreaded()=0
+ virtual bool ChangesProgram

+ virtual bool Execute()=0

StateIrreversibly()=0

- std::string file path
- std::shared\_ptr< GUII</li>gui
- std::shared\_ptr< SDFormat Parserl > sdformatParser
- sdf::ParamPtr attribute to modify
- std::string new\_value
- std::string old\_value
- bool is\_currently\_undoable
- bool is\_currently\_redoable
- + ModifyAttributeCommand (std::shared\_ptr< GUII > gui, std::shared\_ptr
- < SDFormatParserl > sdformatParser, sdf::ParamPtr attribute\_to\_modify, std::string new\_value)
- bool Execute() override
- bool ExecuteUndo() override
- bool ExecuteRedo() override
- bool IsUndoable() override
- bool IsRedoable() override
- bool IsThreaded() override
- bool ChangesProgramState Irreversibly() override

# ${\bf Modify Element Command}$

- std::string file\_path
- std::shared\_ptr< GUII</li>gui
- std::shared\_ptr< SDFormat Parserl > sdformatParser
- sdf::ElementPtr element \_to\_modify
- std::string new\_value
- std::string old\_value
- bool is\_currently\_undoable
- bool is\_currently\_redoable
- + ModifyElementCommand (std::shared\_ptr< GUII > gui, std::shared\_ptr
  < SDFormatParserI > sdformatParser, sdf::ElementPtr element\_to\_modify, std::string new\_value)
- bool Execute() override
- bool ExecuteUndo() override
- bool ExecuteRedo() override
- bool IsUndoable() override
- bool IsRedoable() override
- bool IsThreaded() override
- bool ChangesProgramState Irreversibly() override

# OpenFileCommand

- std::string file\_path
- std::shared\_ptr< GUII > gui
- std::shared\_ptr< SDFormat Parserl > sdformatParser
- + OpenFileCommand(std ::shared\_ptr< GUII > gui, std::shared\_ptr < SDFormatParserl > sdformatParser)
- bool Execute() override
- bool ExecuteUndo() override
- bool ExecuteRedo() override
- bool IsUndoable() override
- bool IsRedoable() override
- bool IsThreaded() override
- bool ChangesProgramState Irreversibly() override

## SaveFileCommand

- std::shared\_ptr< GUII</li>gui
- std::shared\_ptr< SDFormat Parserl > sdformatParser
- + SaveFileCommand(std ::shared\_ptr< GUII > gui, std::shared\_ptr < SDFormatParserl > sdformatParser)
- bool Execute()
- bool ExecuteUndo() override
- bool ExecuteRedo() override
- bool IsUndoable() override
- bool IsRedoable() override
- bool IsThreaded() override
- bool ChangesProgramState Irreversibly() override