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Magit

UI based on console

System Design

Objects are stored in memory as nearly as possible to the format they are saved in files (according to the design specifications of Magit). Few additional fields that required for system operation marked as transient and recovered in runtime when loading a repository from folder or xml.

Major Classes

MagitConsole

- **Main Menu** – The main method (PSVM) is inside it, manages the system runtime and menu functionality

- **MenuItem** – Enum class that manages the menu items

- **Magit** - The most significant class in the module, has methods that responsible for any operation the user selects in the main menu. Uses the Repository and MagitFilesUtils classes from the MagitEngine module

MagitEngine – major classes

- **Repository –** The main class in the system, responsible for almost any operation on an existing repository, and for creating a new one and loading a one from folder
    - Nested class **RepoFileUtils** – Responsible for any operation on the filesystem

MagitFileUtils – Contains static methods responsible for file system operation that happens before Repository instance creation (or loading from file\xml)

- **XmlRepoImporter –** Responsible for creating repository from xml file. Uses methods from Repository and MagitFilesUtils classes
- **Xml.generated package –** Classes that were generated from the given Magit xml schema file. When loading an xml – a repository representation using this classes is generated and the **XmlRepoImporter** class converts it to my Magit repository representation.

- **Blob, MagitFolder, Commit and Branch –** represents those git object types
- **Sha1Able** – interface implemented by Blob, MagitFolder and Commit classes, requires implementing the calcSha1() function
- **MagitObject** – parent class for Blob and MagitFolder

Known issues

- Xml loading of empty repository throws an exception and backs to the main menu
- Loading of a repository from folder with no commits is not allowed (normal behavior - throws an exception and backs to the main menu)

Modules:

- **MagitEngine.jar** – Main logic engine, processes all user command and operation
- **MagitConsole.jar** – Manages the runtime and all end-user I\O.
  The UI in ex1 is based on console so this module is unique for ex1 and will be neglected in the next exercises