

## **Library management system**

The Book class defines a book within a library, with attributes for title, author, and ISBN. Its str() method converts the book into a string representation.

The Checkout class represents a book checkout, with attributes for user ID and ISBN. Its str() method converts the checkout into a string representation.

The User class represents a library user, with attributes for name and user ID. Its str() method converts the user into a string representation.

The Library class manages books, with methods to add, list, and return books, as well as save/load data to/from a JSON file.

The UserManager class manages users, with methods to add and list users.

The CheckoutManager class manages checkouts, with methods to checkout, return, and check the status of books.

The main() function presents a menu for users to choose actions like adding books or users, checking out or returning books, and saving or loading data. The log() function records operations, including user ID, ISBN, title, author, and the operation itself, into a file named library.log.

The logging.basicConfig() function configures the logging module, setting the log file name and the logging level to INFO, which captures informational messages.