**Request for Comments:** CP372 A1 Protocol

**Authors:** Troy Nechanicky, nech5860, 150405860 | Frank

**Date:** January 26, 2018

**Description:**

This is a protocol for a multi-client single-server application that supports storing book records.

Record components: ISBN-13, title, author, publisher, year

Clients:

* Request a connection with the server
* SUBMIT, UPDATE, GET, and REMOVE records
  + ISBN is required for SUBMIT and UPDATE requests. If an ISBN is included in any request, the client ensures that it is valid

Server:

* Accepts requested connections and supports multiple simultaneous connections
* Maintains a list of records submitted by clients. It is not persistent. All clients interact with the same list
* Processes messages received from a client:
* SUBMIT: add the given record to the list (if the ISBN is unique)
* UPDATE: update a relevant record in the bibliography list
* GET: send to the client a list of records matching the request. Client may request list in BibTeX format
* REMOVE: remove the specified record from the list

**Client Protocol Format:**

Request Connection:

Bibliographic information is expected in the following format (order does not matter):

ISBN <ISBN>

TITLE <title>

AUTHOR <author>

PUBLISHER <publisher>

YEAR <year>

SUBMIT/UPDATE:

<request type>

<bibliographic information>

*Note:*

* A valid ISBN is required for all SUBMIT/UPDATE requests.
* The ISBN in a SUBMIT request must be unique.
* An ISBN cannot be updated through an UPDATE request.

GET:

GET

ALL

BIBTEX

<bibliographic information>

*ALL:* request effects all records

*BIBTEX:* asks server to return records in the BibTeX format

*Note:* if ALL is not used, then at least one of ISBN, TITLE, AUTHOR, PUBLISHER, and YEAR must be specified

REMOVE:

REMOVE

ALL

<bibliographic information>

*Note:* if ALL is not used, then at least one if ISBN, TITLE, AUTHOR, PUBLISHER, and YEAR must be specified

The server will request confirmation before records are removed. A response of “Y” will confirm, while a response of “N” will cancel the remove.

**Server Protocol Format:**

Acknowledge/Accept request:

SUBMIT

1 of:

SUCCESS: Record added  
ERROR: Duplicate ISBN

UPDATE

SUCCESS: Record(s) updated

GET

ISBN  
TITLE  
AUTHOR  
YEAR  
PUBLISHER

@book{

isbn={<isbn>}

title = {<title>},

author = {<author>},

year = {<year>}

publisher = {<publisher>},

}

ERROR: Invalid request <request>  
ERROR: Invalid field <field>  
ERROR: Invalid ISBN  
ERROR: Matching record not found

**Synchronization Policies:**

**Error Handling:**

**Server-side Data Structures:**