

Java

Practical Test, 25/01/2010 14:00

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General Information

- Length of three hours
 - Time will not be prolonged
- Printed materials are allowed
- Usage of network sources is prohibited
 - Except Java API documentation (without tutorials) and lecture materials
- Network communication (email, chat, etc.) is also prohibited

Test Assignment

- Implement simple non-relational database with command interface
- Database stores records which has following form:
{ "key" : value, ... }
- Values can be integers or strings
- Each record is identified by its identifier
 - Identifier is also part of the record
- Database should provide its own command prompt
 - Invalid command syntax should be handled properly

Test Assignment

- Command interface should support following operations:

set <schema>[/id] <record>

get <schema>[/id]

get <schema>?key=value&...

delete <schema>[/id]

Test Assignment

- Database content should be loaded from and saved to a file specified as a program argument
 - File format is not specified
- Schema is a collection of records
 - Automatically defined by its first usage
- Set to an existing id updates the record value
- When printing record, its id should be included
- Database should generate ids for new records if not specified by user
 - Use `java.util.UUID` class for this purpose

Examples

```
> set books { "name" : "Thinking in Java" }  
{ "id" : f5d88e74-6474-4294-9cf0-12a7d8258b39, "name" : "Thinking in Java" }  
> get books/f5d88e74-6474-4294-9cf0-12a7d8258b39  
{ "id" : f5d88e74-6474-4294-9cf0-12a7d8258b39, "name" : "Thinking in Java" }  
> set books/f5d88e74-6474-4294-9cf0-12a7d8258b39 { "name" : "Thinking in C++" }  
{ "id" : f5d88e74-6474-4294-9cf0-12a7d8258b39, "name" : "Thinking in C++" }  
> get books?name="Thinking in Java"  
> get books?name="Thinking in C++"  
{ "id" : f5d88e74-6474-4294-9cf0-12a7d8258b39, "name" : "Thinking in C++" }  
> delete books/f5d88e74-6474-4294-9cf0-12a7d8258b39  
{ "id" : f5d88e74-6474-4294-9cf0-12a7d8258b39, "name" : "Thinking in C++" }
```

Assignment and Examples

- Assignment and examples can be downloaded at <http://aiya.ms.mff.cuni.cz/~hosekp/java/base.zip>