bknr

CODENAME: SPUTNIK

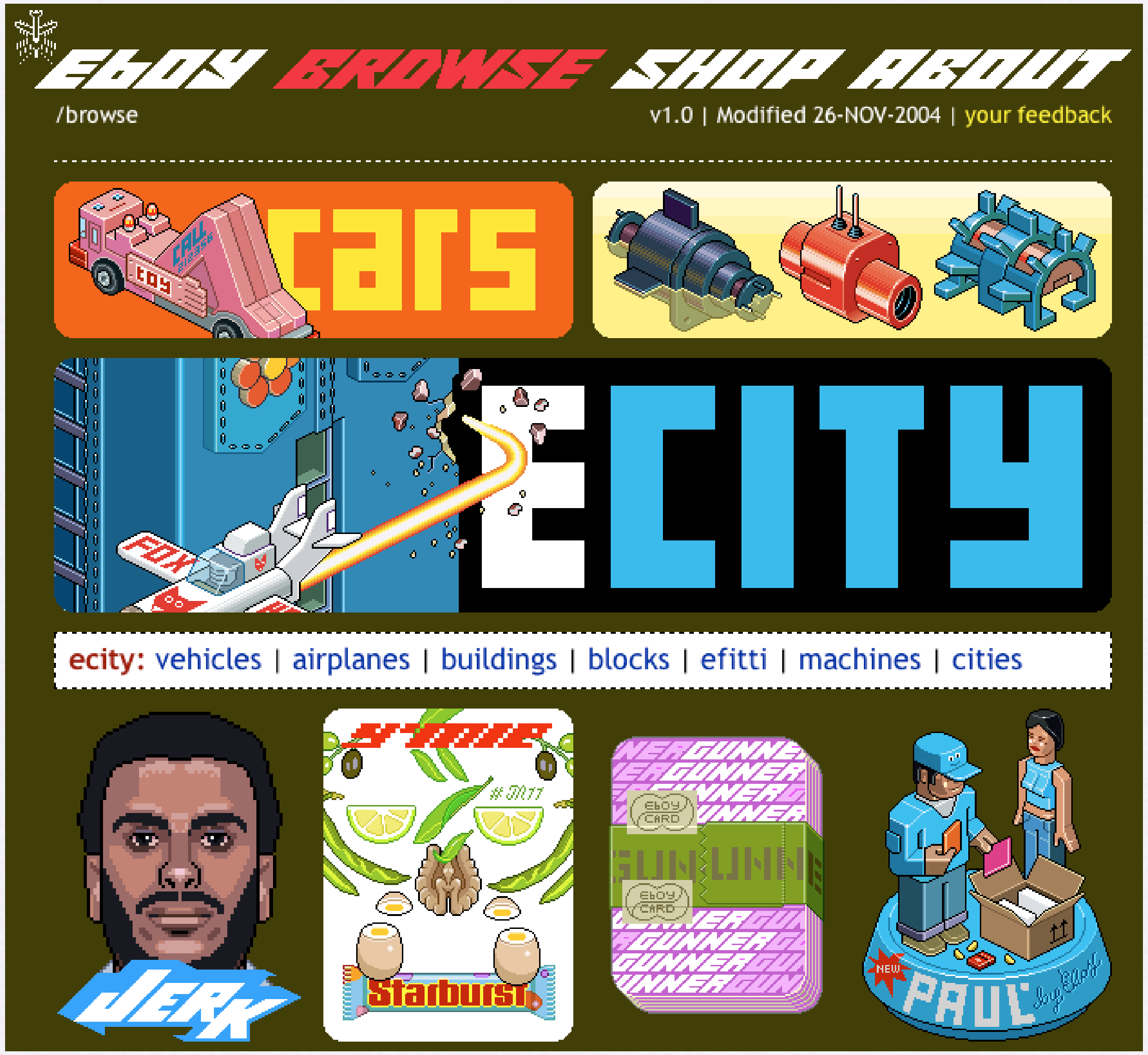
BKNR?

- Baikonour is a russian satellite launch platform

BKNR?

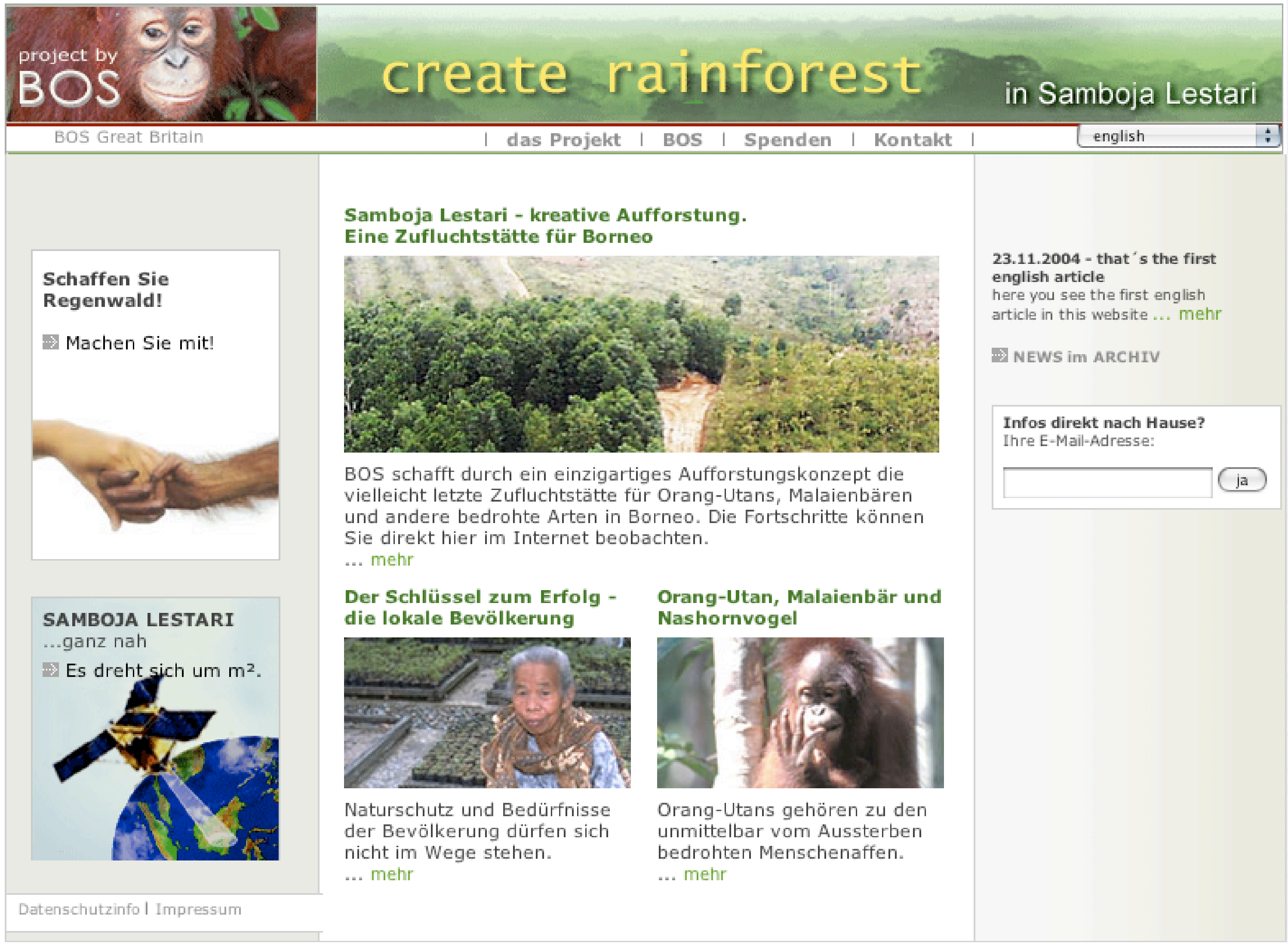
- BKNR is a LISP satellite launch platform
  - LISP applications are satellites
  - BKNR has facilities to help you build applications:
    - indices, datastore, XML import/export, web framework, templates

Cool applications


EBOY BROWSE SHOP ABOUT
/browse
v1.0 | Modified 26-NOV-2004 | your feedback
cars
ECITY
ecity: vehicles | airplanes | buildings | blocks | efitti | machines | cities
JERK
Starburst
GUNNER
eBoy CARD
NEW
PAUL by eBoy

- eboy.com website

Cool applications



Samboja Lestari - kreative Aufforstung. Eine Zufluchtstätte für Borneo

BOS schafft durch ein einzigartiges Aufforstungskonzept die vielleicht letzte Zufluchtstätte für Orang-Utans, Malaienbären und andere bedrohte Arten in Borneo. Die Fortschritte können Sie direkt hier im Internet beobachten. ... mehr

Der Schlüssel zum Erfolg - die lokale Bevölkerung

Naturschutz und Bedürfnisse der Bevölkerung dürfen sich nicht im Wege stehen. ... mehr

Orang-Utan, Malaienbär und Nashornvogel

Orang-Utans gehören zu den unmittelbar vom Aussterben bedrohten Menschenaffen. ... mehr

Schaffen Sie Regenwald!

Machen Sie mit!

SAMBOJA LESTARI
...ganz nah

Es dreht sich um m².

23.11.2004 - that´s the first english article
here you see the first english article in this website ... mehr

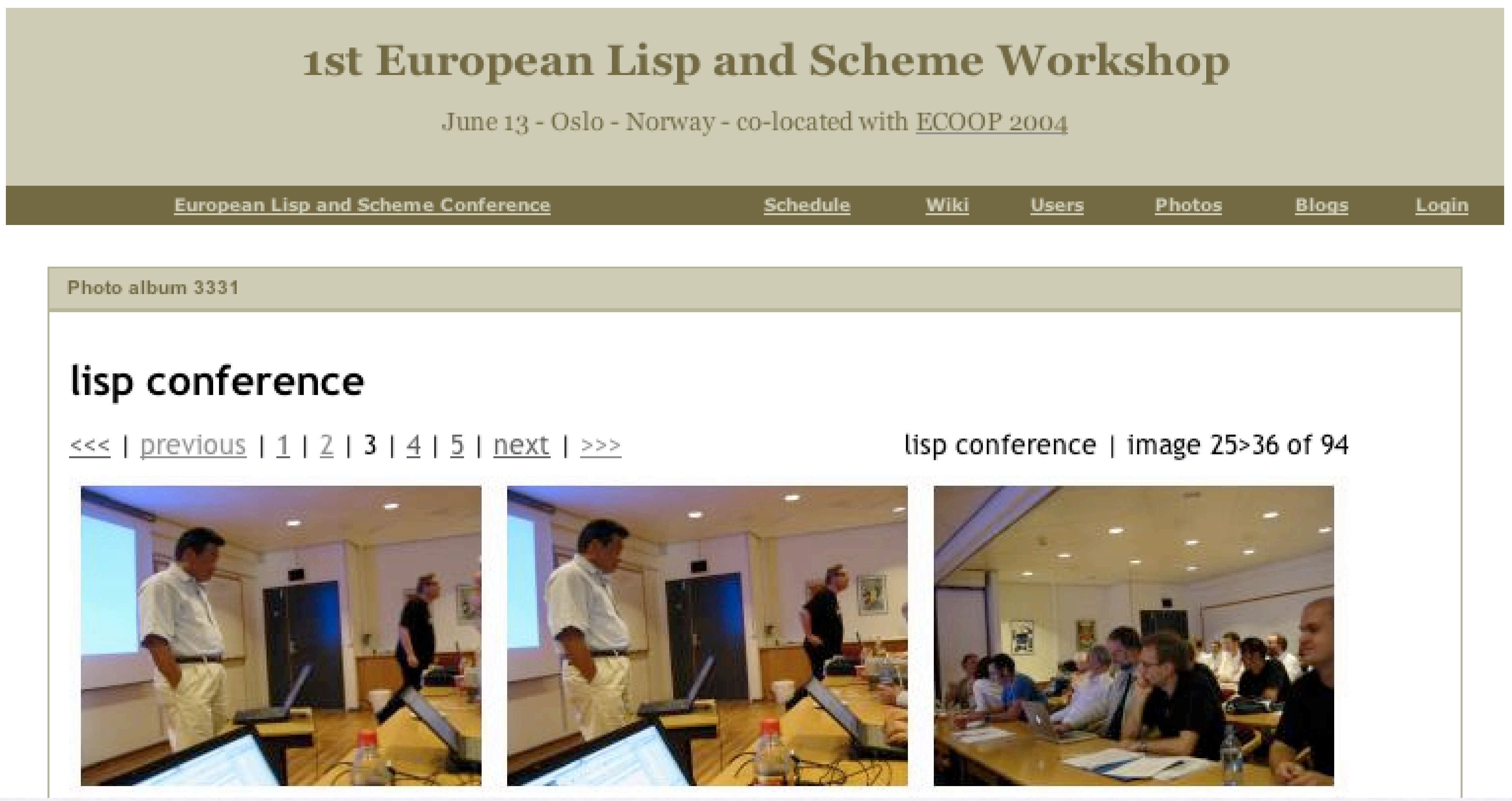
NEWS im ARCHIV

Infos direkt nach Hause?
Ihre E-Mail-Adresse:

Datenschutzinfo | Impressum

- BOS creates rainforest

Cool applications



1st European Lisp and Scheme Workshop

June 13 - Oslo - Norway - co-located with ECOOP 2004

European Lisp and Scheme Conference
Schedule
Wiki
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Photo album 3331

lisp conference

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lisp conference | image 25>36 of 94

- European Lisp Workshop temporary website (1 day of hacking in a park in Oslo)

Cool applications

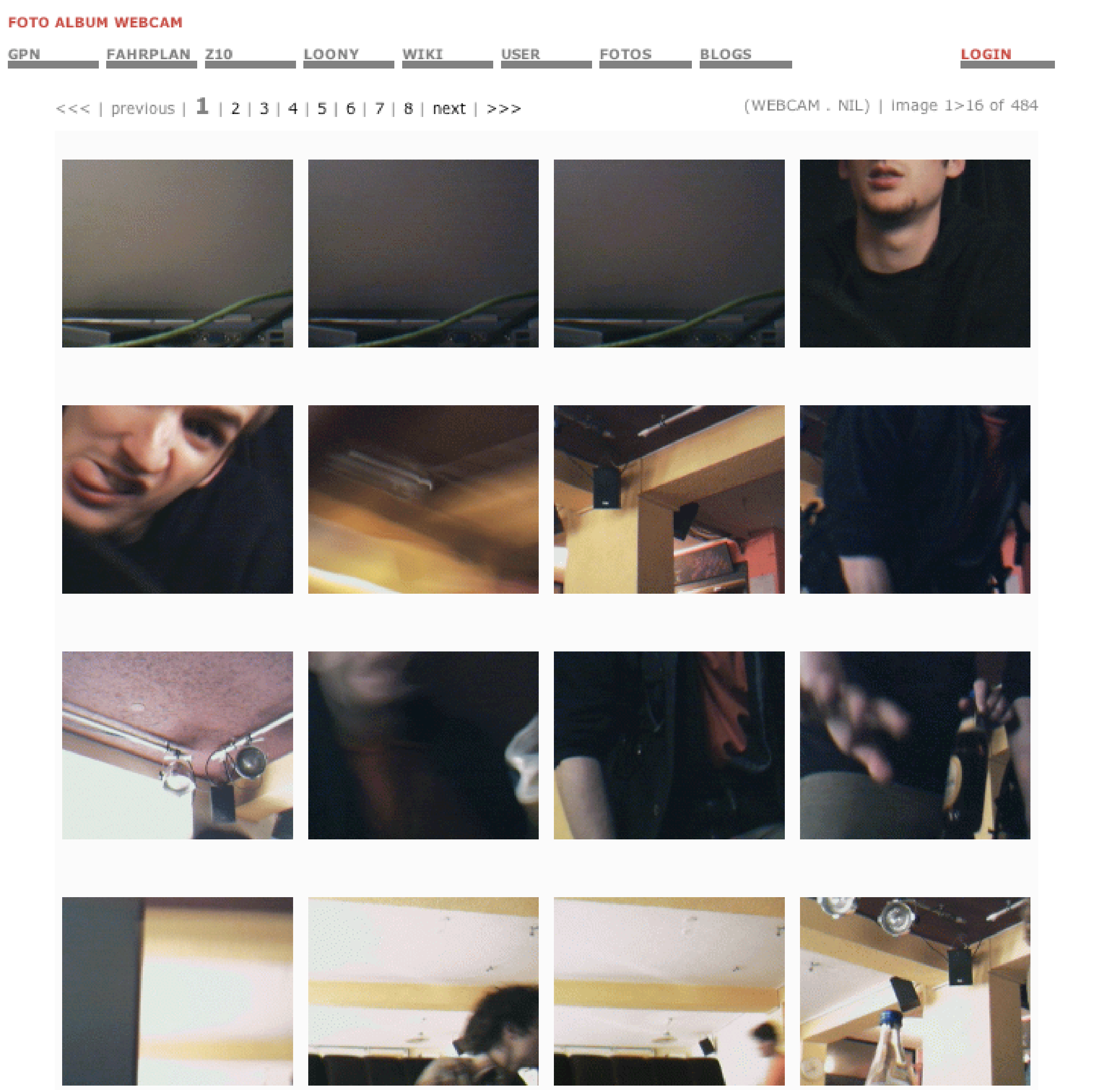
FOTO ALBUM WEBCAM
GPN
FAHRPLAN
Z10
LOONY
WIKI
USER
FOTOS
BLOGS
LOGIN
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(WEBCAM . NIL) | image 1>16 of 484

- GPN (hacker convention) website (Interactive tamagotchi DJ)

BKNR datastore

- Prevalence datastore
  - All data is held in RAM
    - RAM is cheap, data is small
  - Transactions are made explicit in the sourcecode
  - Executed transactions are logged to disk

BKNR datastore

- Transactions are declared with DEFTRANSACTION
  - Defines a function TX- that will be executed in transaction context
  - The main form gets the store locks, executes the transaction, and writes the calling form to disk if no error occured

BKNR datastore

```
(deftransaction incf-counter ()
  (incf (tutorial-store-counter *store*)))
```

```
(PROGN (DEFUN TX-INCF-COUNTER ()
         (UNLESS (IN-TRANSACTION-P) (ERROR 'NOT-IN-TRANSACTION))
         (INCF (TUTORIAL-STORE-COUNTER *STORE*)))
       (DEFUN INCF-COUNTER (&REST #:G8462)
         (EXECUTE (MAKE-INSTANCE 'TRANSACTION :FUNCTION-SYMBOL
                              'TX-INCF-COUNTER :TIMESTAMP
                              (GET-UNIVERSAL-TIME) :ARGS #:G8462))))
```

BKNR Datastore

- On store creation, the existing transaction log is loaded, and all the transactions are executed
- Previously: SEXP-based syntax
- Now: binary format (much faster)

BKNR Datastore

- Persistent state can also be snapshotted
- The store can have subsystems that are able to snapshot persistent state
- Most important subsystem:
  - the object subsystem

Object Datastore

- Declare persistent classes
  - Persistent slots or transient slots
  - Transactions to create an object, to delete an object, to modify slot values
  - Initialization protocol: initialize the persistent instance (once for all times), initialize the transient instance (on restore)

Object Datastore

- At snapshot time, the persistent slots are written to a snapshot file, the transaction-log is removed
    - References are saved too
    - References to deleted objects can be handled with relaxed references

Object Datastore

- DEFINE-PERSISTENT-CLASS macro
- Transactions: MAKE-OBJECT, DELETE-OBJECT, CHANGE-SLOT-VALUES
- Query functions: STORE-OBJECT-WITH-ID, CLASS-INSTANCES

BKNR Indices

- Now we have persistence, but traditional databases have indices, and a query language
- We want to use LISP as our query language
- However, we don't want to write indexing code for each class

BKNR Indices

- Use MOP to add indices to CLOS classes
- Add slot indices with additional slot options
  - INDEX-TYPE, INDEX-INITARGS
  - INDEX-READER, INDEX-VALUES, ...

BKNR Indices

- Standard indices:
  - SLOT-INDEX, SLOT-STRING-INDEX
  - ARRAY-INDEX
  - CLASS-INDEX

BKNR Indices

- Indices can be added by defining an object that obeys the Index Protocol
  - INDEX-ADD, INDEX-REMOVE, INDEX-CREATE, ...

BKNR Indices

- The Object Datastore is implemented using BKNR Indices (class index, ID index)
- Indices can be added to DEFINE-PERSISTENT-CLASS

Blobs in the datastore

- Binary Large Objects can be stored using the Blob subsystem
- Binary data is stored as files in the BLOB-ROOT directory
- Special transactions to create a BLOB from a File, from a Stream, from an array

XML Import/Export

- Exchanging data with the rest of the world is important
    - XML is the most used data format
- Data layout can (somewhat) be defined using a DTD
- It would be nice to map from XML to CLOS objects

XML Import/Export

- Use CXML to parse DTDs and parse and validate XML files
- Using the parsed DTD, create your CLOS classes
  - Classes are mapped to XML Elements
  - Slots can be mapped to Elements or Attributes

XML Import/Export

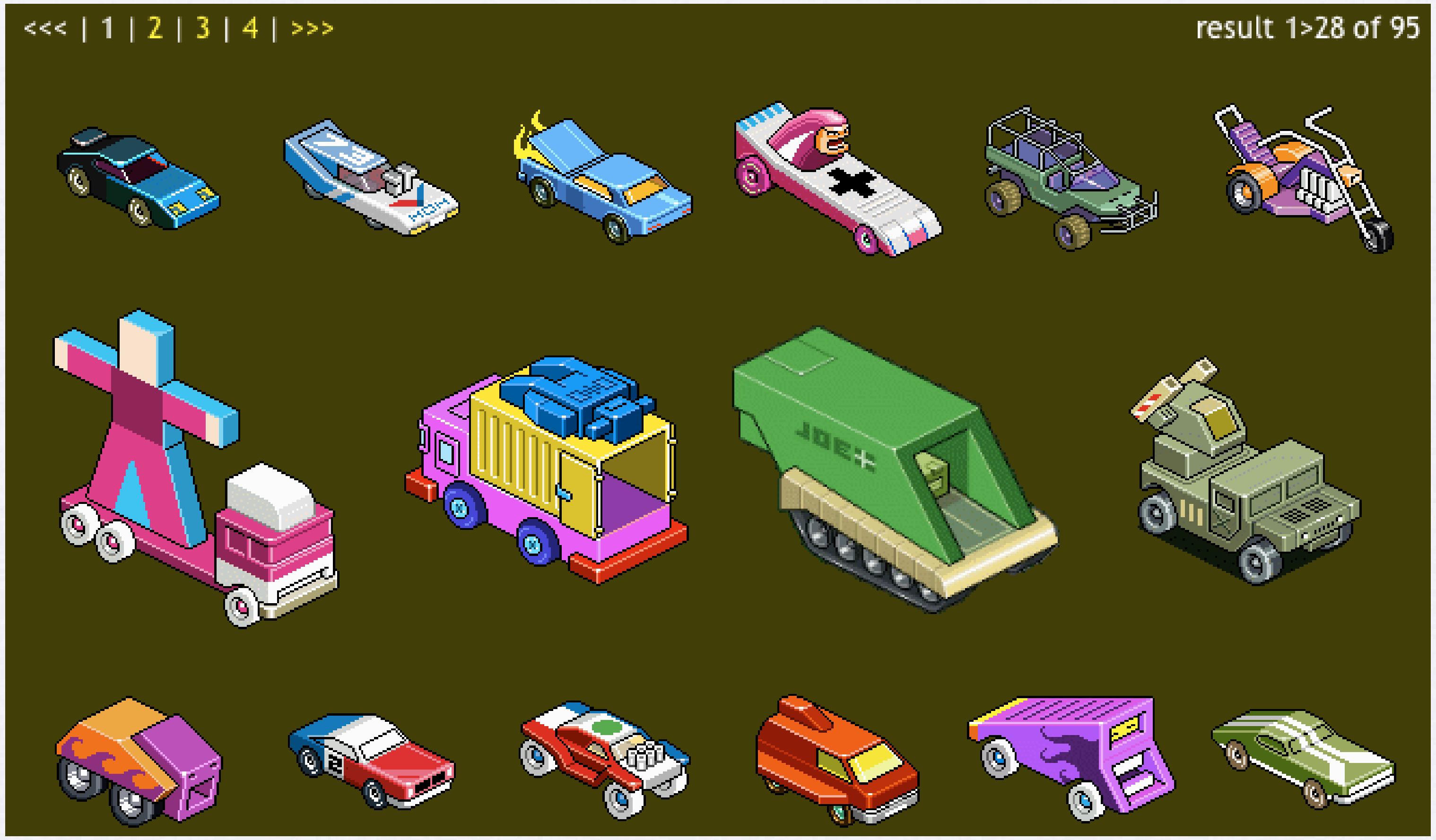
- Import and Export CLOS Objects
- Add indices to CLOS Objects to query XML data
- XML Import/Export will soon be added to the Object Datastore (just a few MOP modifications)

BKNR Web Framework

- Web Framework based on AllegroServe
  - Object-oriented handler architecture
  - Sessions, users, images, blogs, rss feeds, statistics, formular handling, HTML generating macros
  - XHTML Templates, allows to call LISP code in Templates

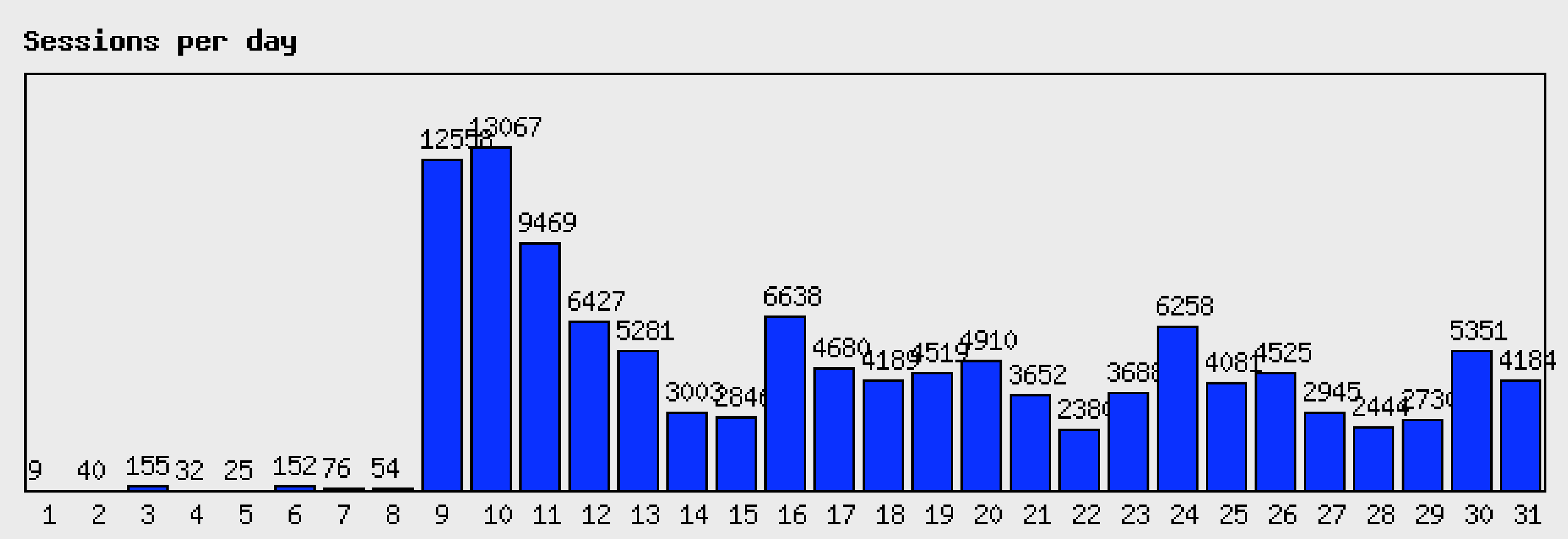
BKNR Web Framework

- eboy.com
  - Lots of graphics, intelligent layouter, graphic games



BKNR Web Framework

- Quite fast, actually
- eboy.com uses a reverse proxy setup



BKNR Web Framework

- GPN (hacker convention) website
- Written in 2 days
- Wiki, blogs, conference timeline, webcams, Tamagotchi MP3 DJ

BKNR: Future

- Release the Web Framework with documentation
- Filesystem handlers (implement dynamic LISP files and LISP directories)
- Mail server + IMAP server (add LISP spam filters, ...)
- LISP OS: LISP compiler + datastore + network