Designing Library APIs

How to Make Users

Love Your Library

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Linux.conf.au 2008

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This should

be easy!

Huge topic!

Libraries

are good

Application

Programming

Interface

Languages

Choosing an

Implementation

Language

API Design

Goals

Ease of

Use

Think of

the Future

Getting

Started

First

Pass

Bad Example

```
int fprintf (FILE *strm, const char *fmt, ...) ;

    int fputs (const char *s, FILE *strm) ;

size_t fread (void *ptr, size_t size, size_t n, FILE *strm) ;
```

Bad Example

```
int mylib_read (some_t * data) ;

int mylib_write (some_t * data) ;
```

Bad Example

```
HWND CreateWindowEx (

    DWORD dwExStyle, LPCTSTR lpClassName,

    LPCTSTR lpWindowName, DWORD dwStyle,

    int x, int y, int nWidth, int nHeight,

    HWND hWndParent, HMENU hMenu,

    HINSTANCE hInstance, LPVOID lpParam

    ) ;
```

Good Example

```
void cairo_move_to (cairo_t *cr, double x, double y) ;

void cairo_line_to (cairo_t *cr, double x, double y);
```

Namespacing

Validating the

Design

Now to

Implementation

Multiple

APIs

Error

Reporting

Language

Bindings

Problems and

Pitfalls

Other

Considerations

Resources

- Joshua Bloch "How to design a Good API and why it matters" (Google video and a set of slides).

- Rusty Russell's "Interface Simplicity Spectrum".