HTNP: A Prospectus

Team k-BANK

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Why HTNP?
Web Development: A Steep Learning Curve

- A web designer needs to be very familiar with:
  - HTML
  - CSS
  - JavaScript
- For different functionalities, designers would want:
  - Flash
  - ActionScript
  - Perl
  - Python
  - Ruby on Rails
  - PHP
  - etc.
What is HTNP?
HTNP Is...

- A language that simplifies the web page creation process
- Rapid prototyping made easier
- Fast, simple and easy
- HTNP is Totally Not PHP
...Totally Not PHP

• Automatic promotion of primitives to common web paradigms
• Includes control for standardized and original DOM Objects
• Built-in support for CSS and JavaScript
Hello, World (Wide Web)!

Page helloWorld(title: "Hello, World Page")
{
    "Hello, World",
    ":-)"
};

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title>Hello, World Page</title>
</head>
<body>
Hello, World<br/>
:-)<br/>
</body>
</html>
A Schematic of the Compiler
Grammatical Concepts

• Primitive types:
  – Number
  – String
  – DOMObject

• Derived types:
  – Array
  – Attribute
  – Extended DOMObjects:
    • Box
    • Link
    • Text
    • etc.
Breaking it Down

Link a(href: "www.google.com"); // Define a Link called a

Page example(title: "example") {
  Box(border: "1px solid") {
    a, "", a, "", a
  }
}; // Define a Page called example

// Define an anonymous Box as a child of example
// The children of the Box are references to the Link

The result:

www.google.com
www.google.com
www.google.com
Development Tools
Validation and Testing

- **Unit Testing**
  - Test all methods individually covering as many lines of code

- **Acceptance Testing**
  - Test to make sure all tutorial examples work
  - Test to make sure compiler does proper error checking and handling
What Worked

• Scheduling regular group meetings early allowed us to identify our target domain quickly
  – Gave us the freedom to focus on implementing HTNP’s many low-level features
  – Meeting each other early allowed us to discover our mutual interests and choose a domain accordingly

• Being passionate about our language and realizing our strengths let us work at an accelerated pace
Lessons Learned

• Match the scope of the project to the schedule at hand
  – Setting realistic goals early allows for better organization and fewer trips to the drawing board
• Choosing a smaller kernel of our target goal for initial implementation is a good compromise between ambition and feasibility
• Designing the reference manual early is key
Conclusion

• HTNP consolidates much of HTML, JavaScript, and CSS into a simple form
  – Fully compatible with the remaining aspects of those languages
• Quick and easy to learn and use
  – Facilitates rapid prototyping of web designs
• Provides all of the power of a traditional programming language
Questions?