LIBRARY IN A WEEK

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C++Now 2014

INTRO

WHAT IS THIS SESSION?

- Workshop

  - Learn by doing

  - Different topic every year

  - "Self Organizing"

- Platform for learning from peers

  - About C++, Boost Development, etc

- Community Building

  - Create contributors

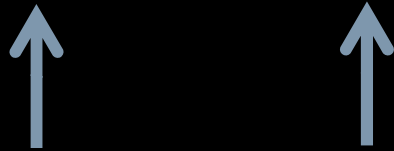 - Create connections

WAYS TO PARTICIPATE

- Please participate!
    - Session(s) are meant to be interactive
    - Shaped/run by the participants
- Things you can do
    - Research, Write Code, Present
    - Come to morning sessions and provide input

TOPIC – C++ TEMPLATE ENGINE

AN EXAMPLE – SIMPLE TEMPLATE

//user.tpl – ctemplate format

Hello {{NAME}}!

Text between braces is a tag to be replaced by application

AN EXAMPLE – APPLICATION (CTEMPLATE)

```cpp
//user.cpp…

…
int main() {
    std::string user = getenv("USER");
    ctemplate::TemplateDictionary dict("example");
    dict["NAME"] = user;  //fill in the NAME element
    std::string output;
    ctemplate::ExpandTemplate("example.tpl",
                        ctemplate::DO_NOT_STRIP,
                        &dict, &output);
    ...
}
```

WHY TEMPLATE ENGINE? - MOTIVATION

- Very popular technique in many languages

  - Separate the application code from display

  - Allow non-programmers to customize

- Examples:

  - Web backend development

  - Source to source code generation

  - Flexible report generation

SECTION EXAMPLE

//example2.tpl– ctemplate format

{{#PERSONS}}{{NAME}} is {{AGE}} years old {{/PERSONS}}

Section allows for multiple (or zero) matches

MORE ADVANCED EXAMPLE

- Dust – Javascript Library

- Live example….

- http://akdubya.github.io/dustjs/#dust

DIMENSIONS OF DESIGN

- Design of the markup Language

    - Separators

    - Features

    - Complexity

- Design of the Library

    - Simple to use

    - Header only (nice to have)

    - More here!!!

APPROXIMATE PLAN

- day 1: Get Organized
  - Selection of focus sections to attack
  - Assignments and teaming
- day 2: Initial Presentations
  - Initial solutions
  - Tool selections
- day 3 & 4: More solution presentations
- day 5: Wrap up – future directions

TOOLS & RESOURCE

- Other Libraries

    - ctemplate is a C++ templating engine originally from Google http://code.google.com/p/ctemplate/

    - ctpp is a C++ tempalating engine http://ctpp.havoc.ru/en/whatis.html

    - Smarty is a PHP template engine http://www.smarty.net/docsv2/en/

    - dust is a javascript template engine http://akdubya.github.io/dustjs/

- C++11 is language of choice

- Github Repository

    - git clone https://github.com/JeffGarland/liaw2014.git

- Mailing List

http://mail-lists.crystalclearsoftware.com/listinfo.cgi/liaw2014-crystalclearsoftware.com

NEXT STEPS

- Meet for lunch – outside Flug

- Presentations for Tues