Next Generation Courseware: Custom Learning Environments
Integrating Research and Collaboration

CHEF Introduction

CHEF (for CompreHensive collaborativE Framework) is a framework designed to expand the paradigm and functionality of course management systems by taking the approach of working to support the activities of scholarly and learning communities over time, in addition to supporting the administrative efficiency we are mostly familiar with. The CHEF framework has been built using (as far as they have been known) and developing further the Open Knowledge Initiative’s APIs. And CHEF is being developed as an open-source project, intended to be collaboratively developed, customized, and implemented at universities across the world.

The first CHEF implementation is a complete re-design of the University of Michigan’s course management system and is called CourseTools.NG (for Next Generation). CourseTools.NG is currently supporting a second pilot semester of nearly a dozen courses with approximately 500 students.

CHEF Architecture in a Nutshell

CHEF is a Client/Server system. CHEF services run on one or more CHEF servers; clients use various means to communicate with the servers to access CHEF. CHEF is a multi-user system, and has features that surface the presence and activity of the current set of users to each other.

CHEF uses the practice of separation of concerns to introduce various metaphors used to organize the development and functionality of the system. These metaphors include tools, services, interface technology, and portals. CHEF also uses the Model View Controller practice, i.e., services handle all modeling while tools handle controller aspects and generate views which are rendered by a template interface technology.

CHEF Project Overview

The CompreHensive collaborativE Framework (CHEF) Project has as its goal the development of a flexible environment for supporting customized learning environments and collaborative work, and doing research on learning and collaborative work. This will involve the identification, design and development of a framework that can effectively accommodate various tools that are used in supporting collaboration, research and learning, and tools necessary for the study of collaborative work and learning. The framework needs to provide organization for the disparate functionality used to support research, collaborative and learning activities and be able to combine locally developed, commercial off the shelf and free off the shelf components.

The initial communities of use that CHEF is targeting include those involved in the scholarly activities of teaching, learning and research at the University of Michigan, and their students and colleagues involved in teaching, learning and research that are outside of the Michigan community.

CHEF is aimed at making available a set of functional elements that can be easily configured by users to accomplish a wide variety of activities. This framework will support existing and emerging capabilities, and will seek to make the integration of new functionality as easy as possible.

In our past and current work we have seen much commonality among the needs and tools used by people in research and teaching/learning communities, and we are seeing the emergence of frameworks for user configurable toolset delivery. CHEF will mobilize our experience, research and user feedback in the effort to develop a comprehensive framework to support these scholarly activities, and make this framework available for wide use through an open-source model.
Implementing CHEF: CourseTools.NG

CourseTools.NG is an enhanced version of the original UM.CourseTools, with improvements that will include greater customization options for users and better support for a variety of pedagogical approaches. Examples of these include individual personal portals (referred to as MyWorkspace) in addition to class portals, the possibility for authentic assessment and e-portfolios, and new capabilities like presence and configurable group collaboration space.

These changes are the result of feedback we have received from individual faculty members, students, focus groups, and surveys. The current pilot phase presents some of the basic CourseTools capabilities within a portal environment in order to gather usage experience which will further guide development efforts.