Developing a business intelligence process for a training module in SharePoint 2010
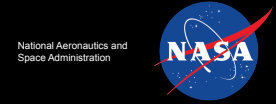
Author: Bryce Schmidtchen
Los Angeles Pierce College

Pierce College

National Aeronautics and Space Administration

Abstract

Prior to this project, training information for the employees of the National Center for Critical Processing and Storage (NCCIPS) was stored in an array of unrelated spreadsheets and SharePoint lists that had to be manually updated. By developing a content management system through a web application platform named SharePoint, this training system is now highly automated and provides a much less intensive method of storing training data and scheduling training courses.

This system was developed by using SharePoint Designer and laying out the data structure for the interaction between different lists of data about the employees. The automation of data population inside of the lists was accomplished by implementing SharePoint workflows which essentially lay out the logic for how data is connected and calculated between certain lists.

The resulting training system is constructed from a combination of five lists of data with a single list acting as the user-friendly interface. This interface is populated with the courses required for each employee and includes past and future information about course requirements.

The employees of NCCIPS now have the ability to view, log, and schedule their training information and courses with much more ease. This system will relieve a significant amount of manual input and serve as a powerful informational resource for the employees of NCCIPS in the future.

Introduction

- My name is Bryce Schmidtchen and I am currently an upcoming sophomore studying Computer Engineering at Los Angeles Pierce College. This summer I have worked alongside Colby Albasini (SAIC) and Dr Wanda Solano (NASA) within the NCCIPS facility at NASA's Stennis Space Center.

- Currently, all employees of NCCIPS are required to partake in an extensive amount of training through OSHA, NASA, SAIC, NCCIPS, and other related entities.

- The system that NCCIPS' training information was handled through in the past was very laborious for those employees who handle the processing of this information and required a significant amount of manual input.

- Therefore, the implementation of this training module that utilizes a business intelligence process will streamline the process of keeping track of training development information and scheduling training courses significantly.

Training Module
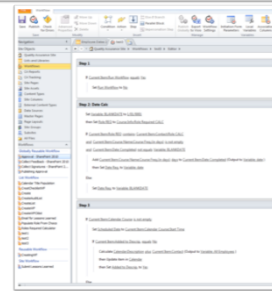
- SharePoint is a web application platform in the Microsoft Office server Suite.
- The training module was developed through SharePoint Designer, a specialized HTML editor and web design software. This software is solely used for developing SharePoint sites, workflows, and pages.

Objectives

- Replace the currently insufficient system of scheduling, tracking, and storing employees' training course information with a training module built with SharePoint, a web application platform, that will automate these tasks as much as possible for the employees of NCCIPS.

- Develop a content management system based on a unique data structure of multiple database lists to properly calculate and manage the training development information for all of the employees. This results in a user-friendly system to be used by the NCCIPS employees that allows them to comfortably view, log, and schedule their training development.

- Design this system so that its development is flexible enough to anticipate the future changes in employee structure or how training is fulfilled at NCCIPS.

Location

- The mission of the National Center for Critical Information Processing and Storage (NCCIPS) is to provide Tier III secure processing and storage facilities for nationally sensitive, critical, or classified Federal information.

Diagram

- Display of the population connections between all five lists within the training module.
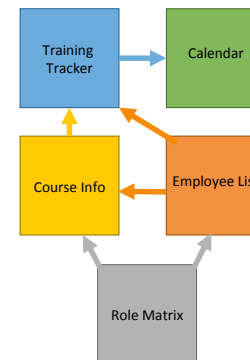
Challenges

- One of the main challenges that I faced was assuring that the training module's functions correctly suited the needs of the employees of NCCIPS. These functions not only included how the training module would store training information but also how easily the module's functionalities were to understand and edit if need be.

- Additionally, through the initial planning of the training module I drafted a sample of how the relationships between all of the SharePoint lists would function. As development progressed, the structure of the lists initially planned had to be continually modified and reconsidered to ensure that the simplest and most practical design was implemented.

Outcomes

- The final training module is a functional combination of five separate lists of data. The Training Tracker list acts as the main user interface for all employees of NCCIPS. This list allows the users of the system to easily log, schedule, and record the training information for NCCIPS employees.

- The user now has the ability to add a new item to the Training Tracker list and select an employee's name from a drop-down list as well as a course name. Based on the employee's role and the date entered for the employee's date of completion for that certain course, the system automatically calculates the date needed for that employee's next course and reminds them via email 90 days before the course is due.

- A SharePoint Workflow was implemented in the Training Tracker list to automate the data population processes from the parent lists. A SharePoint Workflow simply lays out the logic for how that data is connected and calculated between and within certain lists.

- The NCCIPS facility now has a functional training module that will enable its employees to efficiently log, schedule, and record training information. Throughout my internship, I have learned a tremendous amount of information about working to functionally implement a new system within a government facility such as NCCIPS. The experience has been gratifying in that this system will directly alleviate stresses from employees in NCCIPS that had to handle the previous training system.