PianoTrackr

Instrument Management System

Team: TEAM

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Design Overview

Executive Summary

PianoTrackr enables piano technicians to keep track of and report on a myriad of data relevant to their jobs in one compact, easy to use application accessible from any browser.

Capabilities

PianoTrackr is an innovative new system that will greatly simplify and streamline the way that instrument repair technicians will mange their work tracking system. This system is designed to help a piano technician perform the routine record-keeping aspects of his or her job as efficiently as possible. From the home page a list of instruments, new requests for work to be done, filing a report of work completed or generating a report on work previously recorded are all one click away.

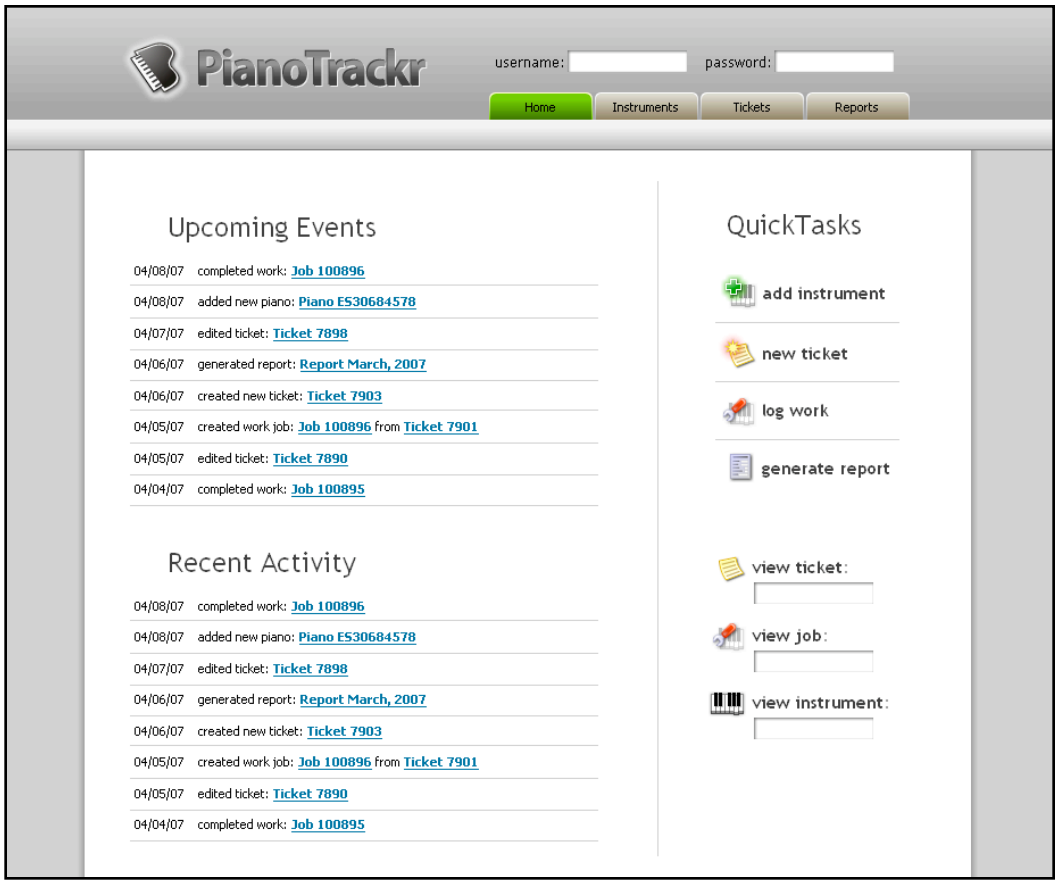

Fig 1. Home Page prototype

The heart and soul of PianoTrackr, of course, is the ability to track pianos and the work done on pianos. To this end, a technician can quickly access a comprehensive and powerful list of all pianos he is responsible for. From this list of pianos, adding a new piano or viewing the instrument details of an existing piano are both one click away. If the

technician is looking for a particular piano, he can quickly filter the list by typing text queries to zero in on the pianos of interest. For example, typing “practice room” would instantly filter the list and only show pianos located in a practice room.

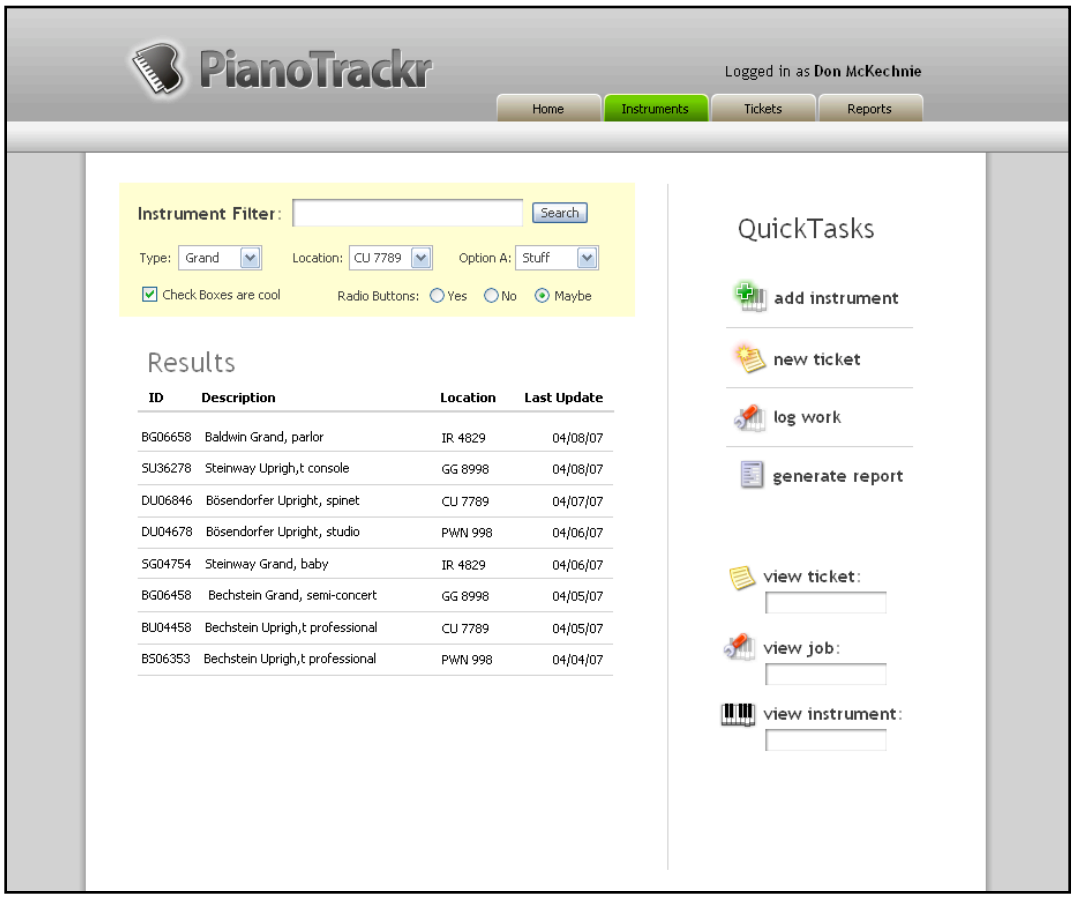

Fig 2. Piano List page prototype

Once the technician has found the piano they want to look at in more detail, they can go to the detailed information page for that piano. This page will provide the technician with an at-a-glance overview of all relevant information about that piano and a log of the work that has been recently logged for that piano. From this page, the technician can easily edit the details of the piano or log new work done on that piano.

Having accurate information about the work done on pianos is at least as important as the pianos themselves, so we will work hard to make sure the capabilities for logging work in PianoTrackr are second to none. When logging work, piano technicians will first select the particular category that their work falls into (a tuning, a voicing, a repair of a hydration system, etc.) and will then be presented with a detailed input form tailored to the information relevant to the type of work they selected. Once saved, a work log will be quickly accessible from the page of the piano it was done on or from a general page devoted to finding archived work entries. Of course, if a technician makes a mistake on

a work record, fixing it is as easy as finding the record and changing the mistaken information.

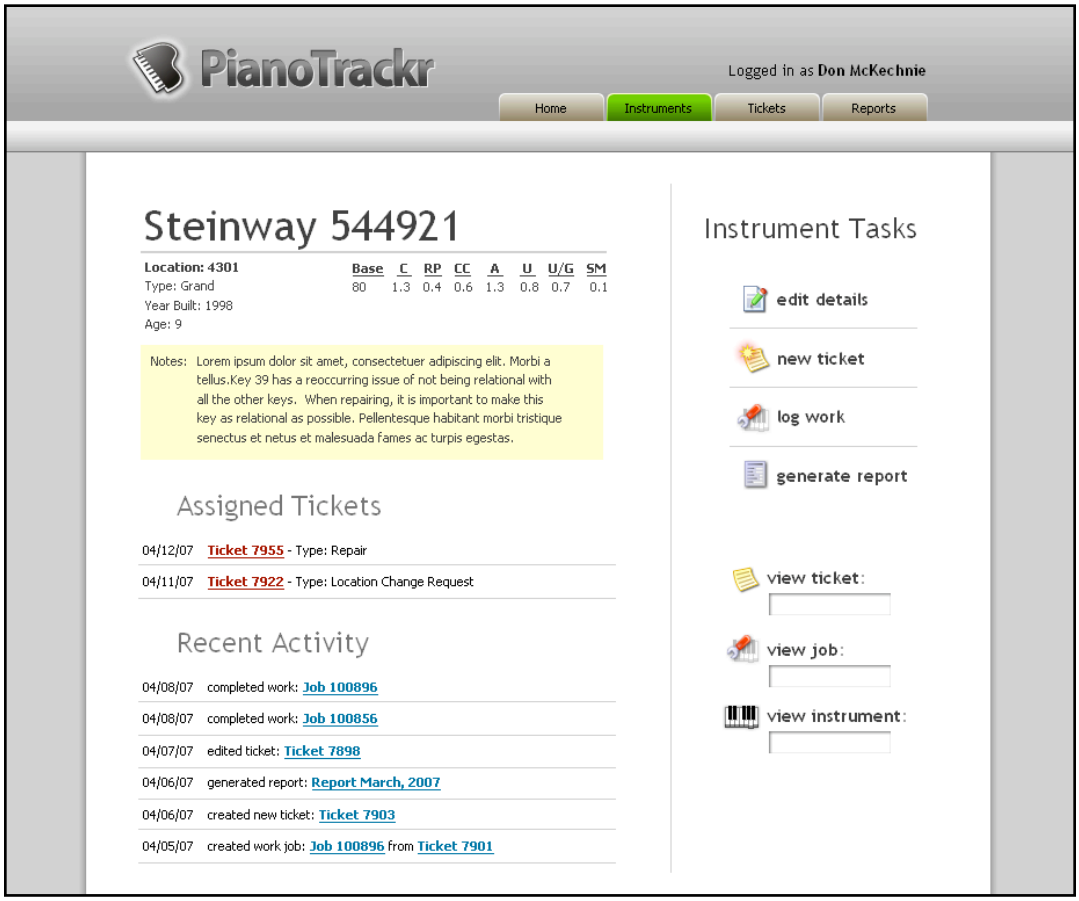

Fig 3. Piano Detail page prototype

Reports are a regularly occurring and vital part of many businesses, and piano maintenance is no exception. PianoTrackr comes with built-in reporting functionality so that a technician can easily and rapidly generate and print or export the reports that are relevant to their job. The first version of PianoTrackr will come with a handful of common weekly and annual report types.

Taking a cue from common issue-tracking systems used by corporations large and small, PianoTrackr allows both users of the system and customers (that is, the users of the pianos) to file requests for work to be done, which are called tickets. Technicians using the system will then be alerted to these tickets, and can respond appropriately by doing the necessary work and marking the ticket as fixed, assigning the ticket to another technician if appropriate or, if the ticket is an irrelevant or duplicate request, mark it as such and ignore it.

The planned first version of PianoTrackr will make any piano technician's life easier by focusing on providing a core set of features that are incredibly simple and intuitive to

use, but there is always room for improvement. Please see the section at the end of this paper for a description of some of the kinds of features you could expect from future implementations of PianoTrackr.

Technical Details

PianoTrackr is a web-based application written in PHP with a MySQL based data store. The PHP code is written based on a custom-built object-relational mapping <http://en.wikipedia.org/wiki/Object-Relational_Mapping> library and a similarly custom-built model-view-controller pattern <http://en.wikipedia.org/wiki/Model-view-controller> based application framework. Using self-built, lightweight libraries in conjunction with a well designed relational database schema to store the application's data allows us to rapidly develop an application and focus on its interface and how a customer will experience it, rather than getting mired in the details of implementation.

The object-relational mapping library will allow a developer to define PHP objects that will intelligently self-define certain behaviors based on the schema of a given database table. Support for relationships between object and database transactions will be included.

The MVC framework will use the classes defined using the object-relational mapping library for models. Controllers will be defined as PHP classes with methods acting as actions. Views will be stored as Smarty <http://smarty.php.net> templates.

Deliverable Stages

1. The core of the system is tracking of pianos and work done on pianos (tunings, voicings, etc.), so this will be the primary feature of the first released version of PianoTrackr. User management with different levels of privileges will also be completed, as this is critical to ensuring the security and usefulness of the application. Support for filing and tracking "work to be done" tickets will also be completed. At least basic reporting capabilities will be completed, with a more robust and customizable reporting system to follow in a later release.

2. Data migration from previous systems (e.g. FileMaker databases) could be made available as a purchasable service in the future. This would almost certainly be highly valuable to any customer with large quantities of data stored in a previously used system.

3. An enhanced reporting module, with more reports and more user-customizable aspects of reports. The ability to export the system's data could also be added in case a user needs to do some very complicated analysis that is beyond the built-in abilities of the system.

4. An accounting and budgeting module would be added, allowing users to store and edit accounts and budgets tied to the rest of the system.

5. A module for tracking stock and tracking items on loan would be added.

Depending on customer needs and preferences, milestones 2–5 could be rearranged so that the customer could get the features wanted most fastest.