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Achievement Hound

Regis University

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*This case study is dedicated to Regis
University, its students, and its affiliates.*

Foreword

This case study showcases the application Achievement Hound that was created for the Department of Pharmacy at Regis University.

Acknowledgements

We would like to acknowledge the team members that took this application from ideation to execution for Regis University.

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Acronyms

Use the template *acronym.tex* together with the Springer document class `SVMono` (monograph-type books) or `SVMult` (edited books) to style your list(s) of abbreviations or symbols in the Springer layout.

Lists of abbreviations, symbols and the like are easily formatted with the help of the Springer-enhanced `description` environment.

ABC	Spelled-out abbreviation and definition
BABI	Spelled-out abbreviation and definition
CABR	Spelled-out abbreviation and definition

Chapter 1

Achievement Hound

Abstract Faculty in the Department of Pharmacy Practice are experiencing a need to have faculty-specific data; like mission and service work, scholarship and teaching; to be stored in a database that can be later accessed to create reports, and bibliographies. Achievement Hound is an application where the user will be able to create, read, and export relevant database fields in a professional manner. The app follows Systems Development Lifecycle(SDLC) or Application development life cycle.

1.1 Purpose

The purpose is to design and develop a database-driven web application where faculty and staff can create, read, update, and delete relevant database fields associated with their work and achievements in the areas of scholarship, teaching, service and mission.

1.2 Problem

The faculties in the School of Pharmacy is in need of a program that will allow the faculties to organize faculty-specific data in an efficient and effective way. Furthermore, there is a need for data analytics to be run on relevant faculty-specific data for the purposes of trend analysis and forecasting for both internal and external stakeholders.

1.3 Background

This application is a software solution for the faculty at the School of Pharmacy to create a monthly report "template" which includes the fields and page elements envisioned in a typical monthly report. This template will be the basis for the "view" that is created for the application being built here. Pharmacy faculty need to provide samples of data types like what might be found in the mission section, or teaching section, or service section of a typical monthly report. The inputs for the application will be managed through a web page where faculty and staff have a dedicated account page with specific fields. Which can include the ability to import data that has been exported from bibliographic databases like Mendeley or Zotero.

1.4 Procedures and Roles

Development was started in a well-planned manner. Mainly there are six steps that every researcher draws and follows.

- 1) Determine and define the research questions
- 2) Select the cases and determine data gathering and analysis techniques
- 3) Prepare to collect the data
- 4) Collect data in the field
- 5) Evaluate and analyze the data
- 6) Prepare the report

1) Pharmacy faculty needs to provide samples of data types, in terms of what information they would need in a mission section, or teaching section, or service section of a typical monthly report.

2) The report must be able to export a monthly report for the Regis University Rueckert-Hartman College for Health Professions School of Pharmacy.

2) User inputs data into each category to create database for faculty members.

3) This application is not designed to facilitate a bibliographic management tool like Zotero, Endnote, Refworks, etc...

1.5 Data Collection

Data will be collected from the School of Pharmacy's previous report, database, and archive. A sample of the data input is shown in Fig. 1.1 that would be needed to generate a report through Achievement Hound.

```
{
  "report_type" : "monthly",
  "report_year" : "2018",
  "report_month" : "april",
  "category" : "accomplishment",
  "school/dean office" :
  {
    event:
    {
      "date" : "april 6th",
      "event_name" : "an MMI day",
      "type" : "interview",
      "attainer" : "8 candidates",
      "from" : "4th",
      "to" : "4th",
      "where" : "at school",
      "reason" : "for the Class of 2022",
      "result" : "All 8 were admitted and 4 deposited"
    }
    event:
    {
      "date" : "april 6th",
      "event_name" : "An IPE session",
      "type" : "joining",
      "attainer" : "3rd year students",
      "from" : "the Rocky Vista University Doctor of Osteopathy
program 4th year pharmacy students",
      "to" : "4th",
      "where" : "at school",
      "reason" : "interprofessional competencies",
      "result" : "Faculty from both schools participated. Both
PharmD and DO students found the event valuable in attaining the interprofessional
competencies."
    }
  }
  event:
  {
    "date" : "april 19th",
    "event_name" : "second RHCHP IPE day",
```

Fig. 1.1 JSON structure of Achievement Hound data

1.6 Analysis

A sample conversion from a .csv file to a .pdf file was made to show that an efficient and effective export of a monthly report was possible through this application.

1.7 Research Goals

This has similar research goals to the case study of Database Driven Course Design App. To utilize existing software engineering design principles to design, develop, implement a database driven web application for faculty-specific data to support the existing data report system. Another research goal is to learn and practice the SDLC (software development life cycle) with a project setting.

1.8 Research Questions

The research questions helped in the development of the application from a faculty perspective. Some of the research questions were considered before initiating the application development for Achievement Hound.

- 1) How can we design a simple application that allows faculties to input faculty-specific data and also export the data as a form of a report?
- 2) How should we design the application so that it will be efficient and useful for faculty members at the university setting?
- ‘3) How does the features provided by Achievement Hound improve the efficiency of the current database system that the School of Pharmacy has?
- 4) How can we design the application software so that it is practical, user-friendly, and secured for the school’s data?

1.9 Design Methods

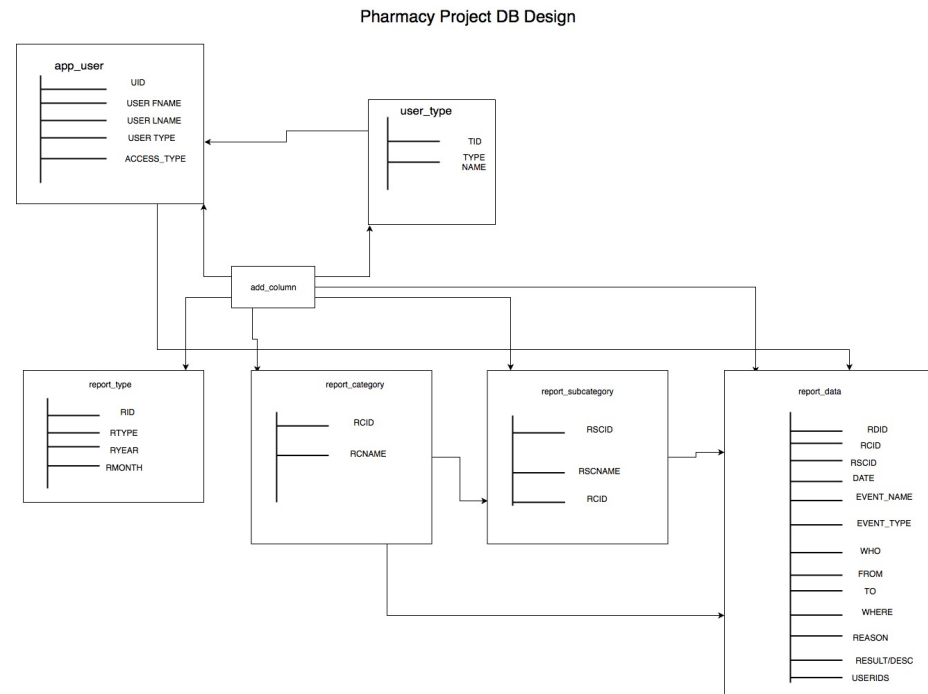


Fig. 1.2 Database Design

1.10 Mock Design

This is a mock design of the front end of Achievement Hounds' sign up, login, dashboard, and registered user list.

The Sign Up Page features a dark header with navigation links: Sign Up, About, Contact, and Login. The Regis University logo is positioned on the left. The main content area is titled "Who are you?" and includes a "User Information" section with input fields for "First name" and "Last name", each with a "This field can't be blank" error message. Below this is a "How to contact you?" section with input fields for "Email" (containing "example@gmail.com") and "Phone number" (containing "303-252-9876"). To the right is a "Securize your account !" section with input fields for "Password" (containing "Type your password") and "Password (confirm)" (containing "Type your password again"). A large blue "Sign up !" button is at the bottom.

Fig. 1.3 Sign Up Page

The Login Page features a dark header with navigation links: Sign Up, About, Contact, and Login. The Regis University logo is positioned on the left. The main content area includes input fields for "Email" (containing "Enter Your Email") and "Password" (containing "Enter Password"). A large blue "Login" button is at the bottom. At the very bottom, there is a link: "SIGN UP ABOUT CONTACT US".

Fig. 1.4 Login Page

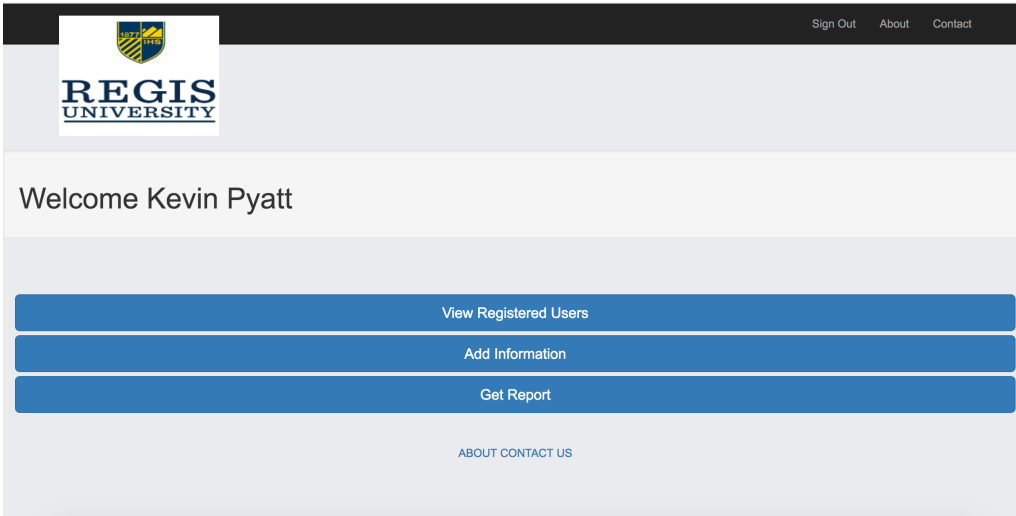


Fig. 1.5 Dashboard Page

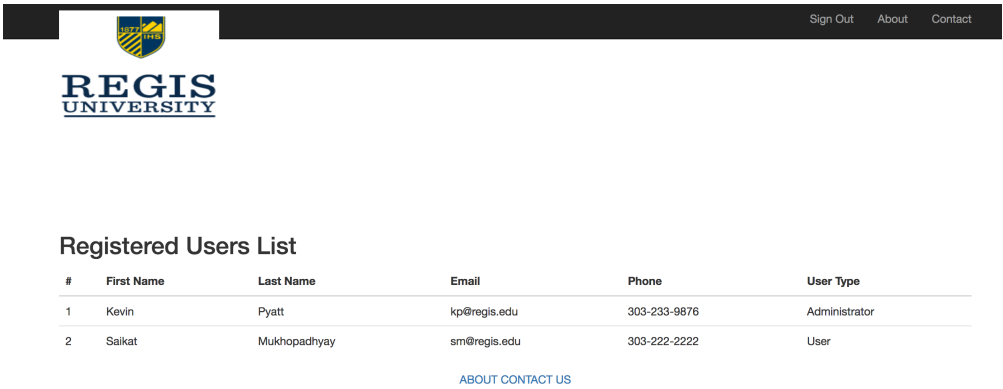


Fig. 1.6 Registered Users List Page

1.11 App Basic Design

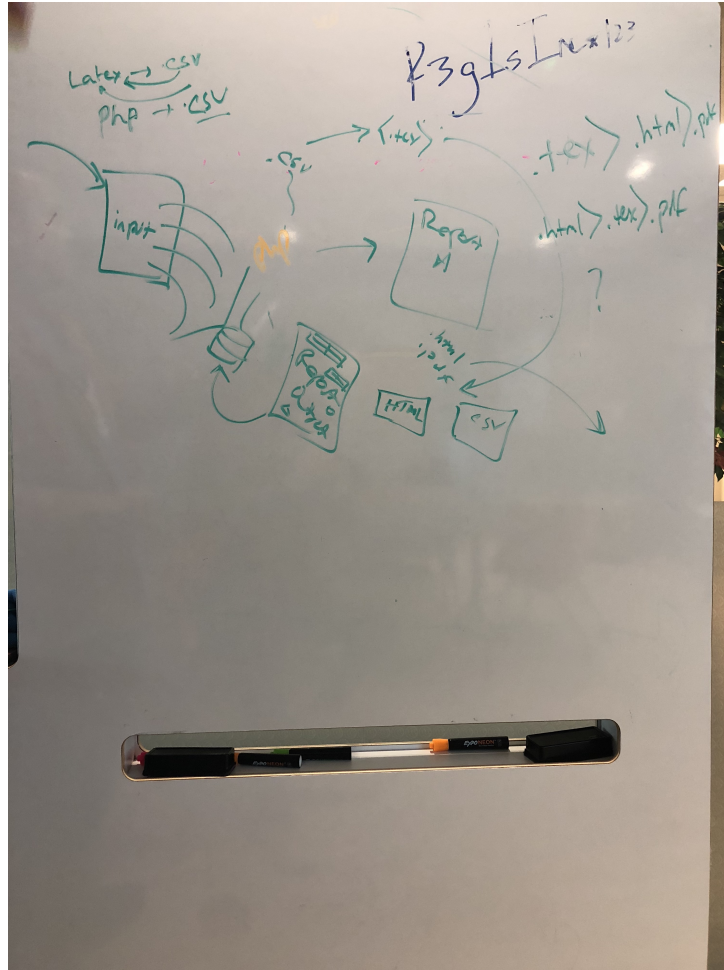


Fig. 1.7 Basic App Design at Achievement Hound Meeting at Regis University



Fig. 1.8 Basic Flow Diagram

1.12 Design Goals

To create a new user friendly system that would allow Regis University faculties store a database that can be later accessed to create reports, and bibliographies into a form of a "monthly report."

Focus of the design was to make Achievement Hound user friendly so that faculties can utilize the program to assist with faculty-specific data entries and reports.

1.13 Development

From inspecting the needs of the faculties at the School of Pharmacy, we mainly focused our development on database, user input structure, export of data, and conversion of data into a report.

1.14 Conclusion

The application is made to be user friendly so that faculty can easily use it. Development was made in every aspect of the application to improve its efficiency.

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Glossary

CLI A command-line interface or command language interpreter, also known as command-line user interface, console user interface and character user interface, is a means of interacting with a computer program where the user issues commands to the program in the form of successive lines of text.

Database A database is an organized collection of data, generally stored and accessed electronically from a computer system. Where databases are more complex they are often developed using formal design and modeling techniques.

Heroku Heroku is a platform as a service (PaaS) that enables developers to build, run, and operate applications entirely in the cloud.

SQL SQL is a domain-specific language used in programming and designed for managing data held in a relational database management system, or for stream processing in a relational data stream management system.

PHP Hypertext Preprocessor is a server-side scripting language designed for Web development, and also used as a general-purpose programming language.