Interactive Directory Kiosk
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Background and Motivation
Students and visitors to the VCEA buildings find themselves regularly lost or in need of information. By using an automated system, users can readily have access to directions and key information without disruption to staff and faculty creating a better experience for everyone.

Project Goals
- Create interactive directory kiosk software that…
  - Displays VCEA Information
  - Routes users around VCEA buildings
  - Supports touch and voice control
  - Provides administrative controls
  - Has a modular framework

Search
- Allow users to search a database for information
- Display overview of results
- Display information on user selection
- Broken into three pages to allow more usable filtering: Classes, Faculty, and Rooms

Interactive Map
- Displays locations of supported buildings
- Easily expandable to new buildings
- Color coded by room type
- Gives users the options to route to selected room

Routing
- A* implementation to find the shortest path from kiosk location to any room
- Accessibility option to only use elevators

Floor Plan Analysis
- SimpleCV was used to analyze an outlined floor plan
- Creates XML with location and size of each room

Database
- Stores information on buildings, classes, and faculty
- Microsoft SQL Server 2008

Bus Routes
- Displays estimated location of Pullman transit buses
- Weekend route support
- Ability to display overview of most routes or individual routes

Administrative Controls
- Built-in collection of tools for local kiosk modification and database editing
- Tools:
  - XML Editors: settings, colors, fonts, weather conditions, database information
  - Database editor
  - External Tools: Database initializer, floor plan analyzer

Glossary
- A* (A star): Computer algorithm that uses heuristics to compute the best path between two points. Widely used in path finding and graph traversal (Wikipedia)
- SimpleCV: An open-source framework for building computer vision applications (simplecv.org)
- SQL: A computer programming language used for database management (Dictionary.com)
- XML: A markup language that defines a set of rules for encoding documents (Wikipedia)

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