

MICHIGAN STATE  
UNIVERSITY

# Project Plan

## IT Metrics Repository

### The Capstone Experience

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*From Students...  
...to Professionals*

# Project Overview



- Metrics - standard of measurement
  - Provides insight on performance compared to...
    - Industry standards
    - Company goals
- Provide Meijer's IT with a means of storing and accessing customizable sets of data



# Functional Specifications



- Ability to create and view metrics
  - Create and select metrics
  - Calculate metrics based on existing metrics
- Generate graph or report
  - across various time dimensions
- Provide metric goals
- Store historical values
  - Up to ten years



# Design Specifications



- User login page
- Create page
  - Create a new metric, attribute or data
- Select page
  - List of metrics and attributes
  - Start year/period and end year/period
- Generate Report
  - Shows the metric graph and table



# Screen Mockup: Login

A screen mockup of a Meijer login page. At the top, the Meijer logo is centered within a white rectangular area that has a grey shadow effect. Below this, the page has a light grey background. The login form is a white rectangle with a thin grey border. Inside the form, the text "LOG IN" is in bold. Below it is a line of text: "Please enter your username and password. [Register](#) if you don't have an account." The form is divided into two sections by a horizontal line. The top section is titled "Account Information" and contains two input fields: "Username:" and "Password:". Below these fields is a checkbox labeled "Keep me logged in". A "Log In" button is located at the bottom right of the form.

**meijer**

**LOG IN**

Please enter your username and password. [Register](#) if you don't have an account.

Account Information

Username:


Password:

☐ Keep me logged in

Log In



# Screen Mockup: Select Metric



Select Create

### SELECT METRIC

Metric 1

Select Metric: Stores - Pharmacies ▾

Select Attribute: # of pharmacies ▾

From

Year: 2008 ▾ Period: 1 ▾

To

Year: 2008 ▾ Period: 12 ▾

Metric 2

Select Metric: Stores - Pharmacies ▾

Select Attribute: # of stores ▾

From

Year: 2008 ▾ Period: 1 ▾


To

Year: 2008 ▾ Period: 12 ▾

Add Metric Generate Report



# Screen Mockup: Create Metric



Select | Create

CREATE METRIC

Metric

Metric Name:

Description:

Owner:

Create Metric

Attribute

Select Metric:

Attribute Name:

Select Type of Data:

Add Attribute

Data

Select Metric:

Select Attribute:

Data Value:

From

Year:  Period:

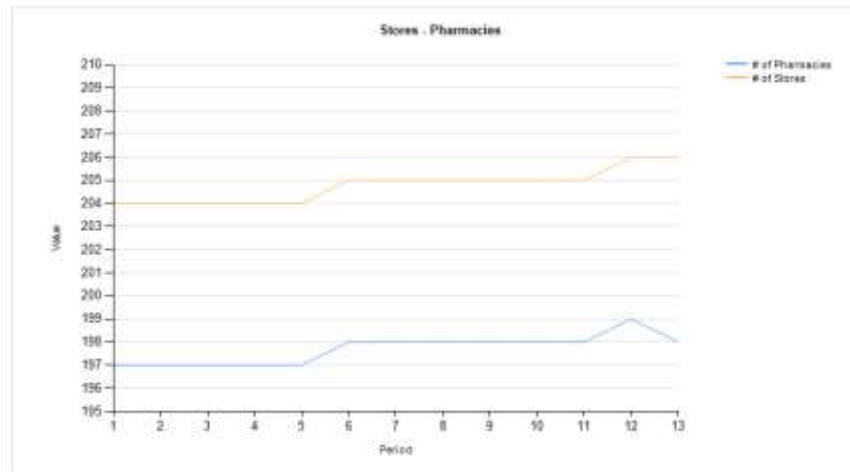
To

Year:  Period:

Add Data



# Screen Mockup: Report



Year	Period	Attribute	Value
2012	1	# of Stores	204
2012	2	# of Stores	204
2012	3	# of Stores	204
2012	4	# of Stores	204
2012	5	# of Stores	204
2012	6	# of Stores	205
2012	7	# of Stores	205
2012	8	# of Stores	205
2012	9	# of Stores	205
2012	10	# of Stores	205
2012	11	# of Stores	205
2012	12	# of Stores	206
2012	13	# of Stores	206

Year	Period	Attribute	Value
2012	1	# of Pharmacies	197
2012	2	# of Pharmacies	197
2012	3	# of Pharmacies	197
2012	4	# of Pharmacies	197
2012	5	# of Pharmacies	197
2012	6	# of Pharmacies	198
2012	7	# of Pharmacies	198
2012	8	# of Pharmacies	198
2012	9	# of Pharmacies	198
2012	10	# of Pharmacies	198
2012	11	# of Pharmacies	198
2012	12	# of Pharmacies	199
2012	13	# of Pharmacies	198





# Technical Specifications



- System Architecture
- System Components
- Environments
  - Development
  - Production
- Database Schema



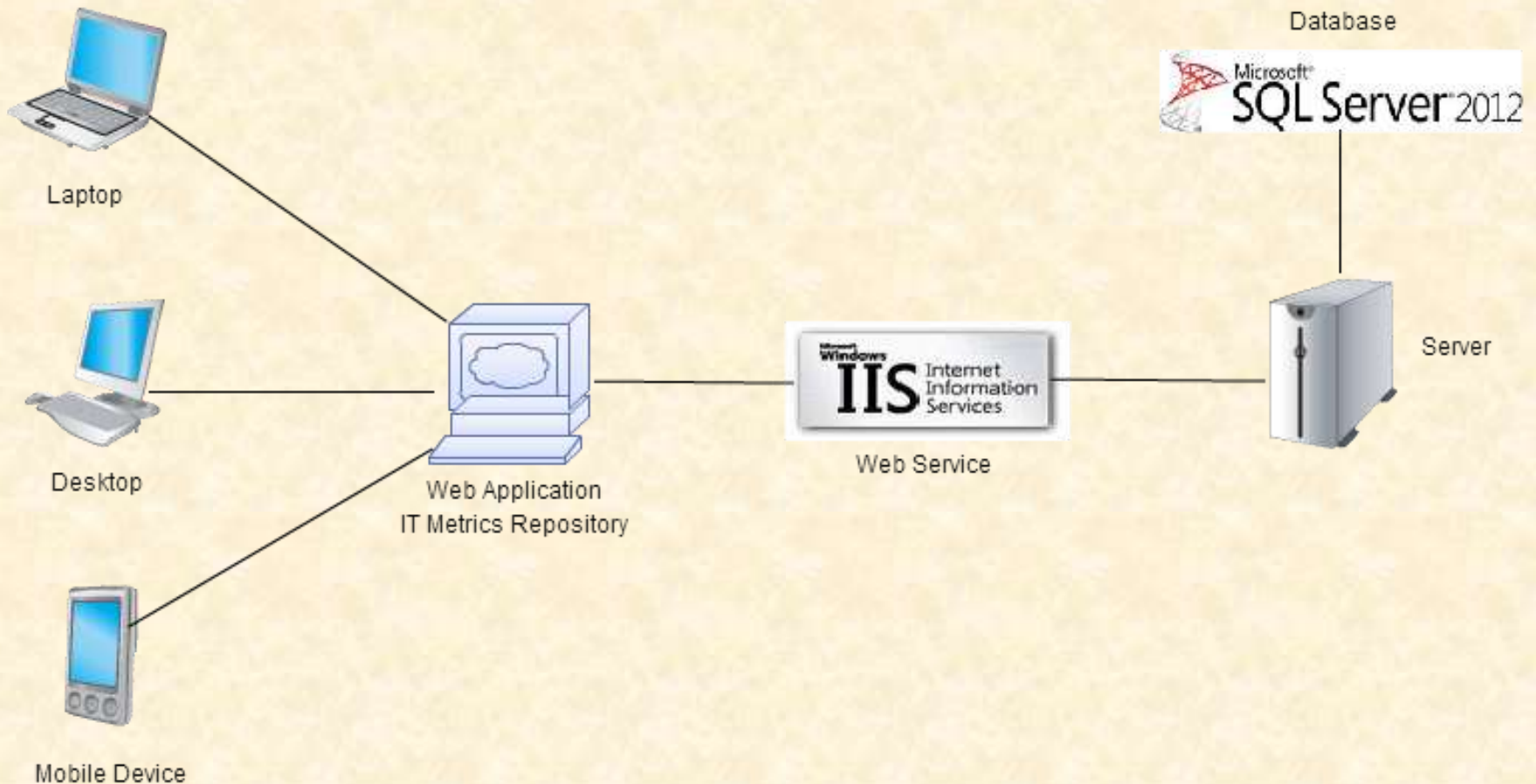
# System Architecture



- .NET web application user interface
  - Desktop, laptop, mobile
- Internet Information Services
  - Application web service
- Server containing a SQL Server 2012 database
  - Reporting Services



# System Architecture



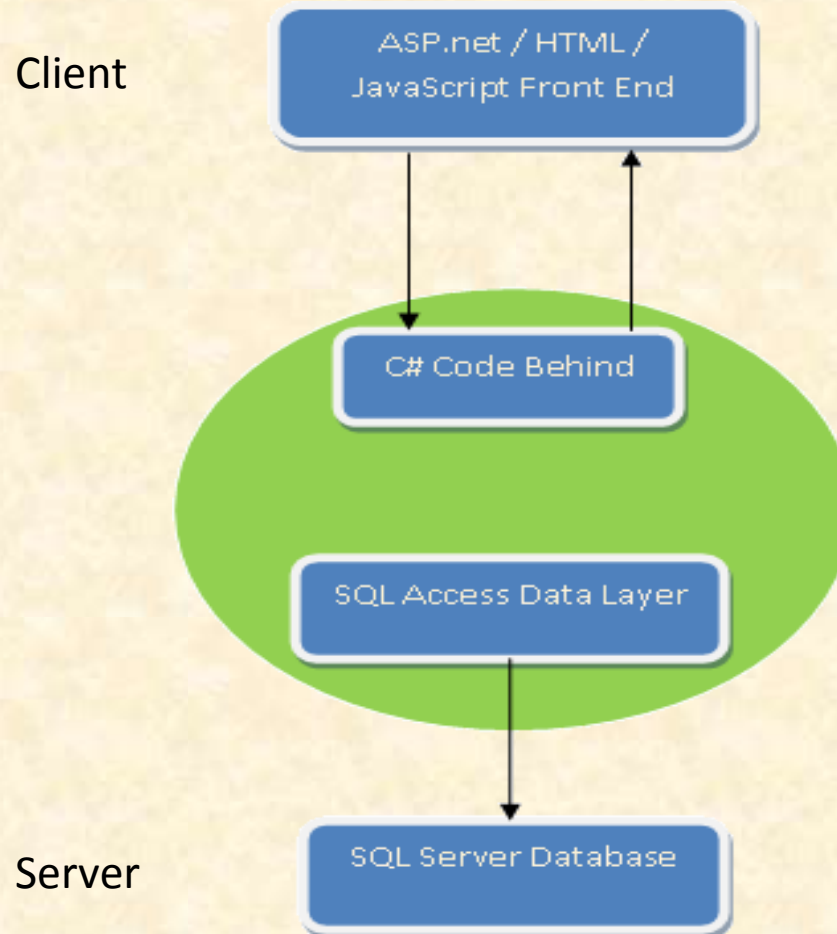
# System Components



- Hardware Platforms
  - Desktop or Laptop
  - Mobile Device
  - Server
- Software Platforms / Technologies
  - .NET Framework using Visual Studio 2012
    - C#.Net (server-side)
    - ASP.Net, javascript (client-side)
    - Data Access Layer (Entity Framework)
  - Internet Information Services
  - SQL Server 2012
    - Reporting Services



# Application Architecture



# Development Environment



- Application implemented on local machines
  - Visual Studio 2012, .Net Framework
- Internet Information Services
  - Resides on local machine
- Commit code changes
  - Team Foundation Server 2012



# Development Environment



- SQL Server Management Studio
  - Access and Manage data on server
- Reporting Services
  - Developed in Visual Studio 2012
  - Deployed onto report server





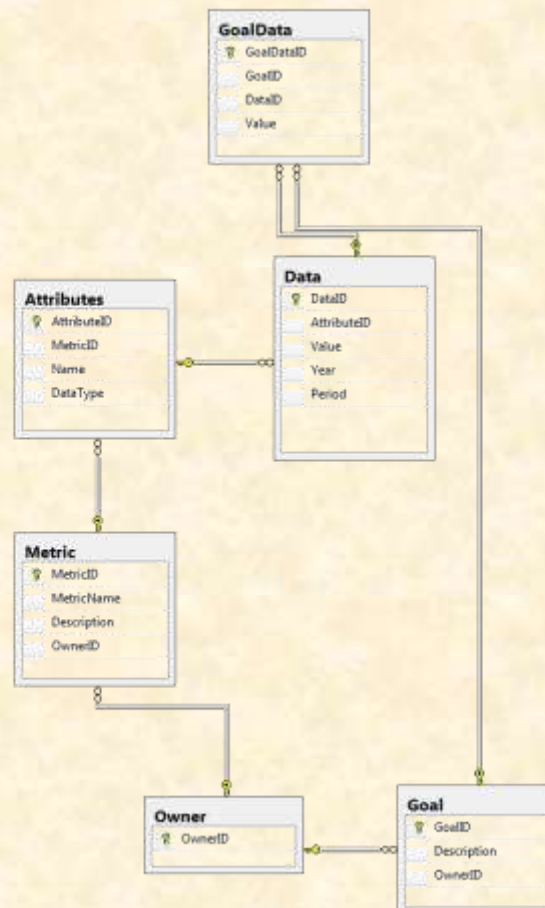
# Production Environment



- Application deployed as web service
  - Internet Information Services (IIS) located on server
- Code files reside in IIS directory structure
- SQL Server 2012 database
- Report Server
  - Resides in SQL Server
  - Stores all reports



# Database Schema



# Testing



- Determine possible user scenarios
  - Three different roles
- Test application under each scenario
  - Different browsers
  - Different devices
- Verify data is stored and received correctly
- Test user role security



# Risks



- Provide mobile-device compatibility
  - Application should be accessible and formatted for mobile use
  - Mitigation: Research methods on mobile compatibility
- SQL Server Reporting Services (SSRS)
  - SSRS to graph metrics
  - Mitigation: Research information on SSRS
- Database Schema
  - Provide an efficient database structure
  - Mitigation: Normalize the database

