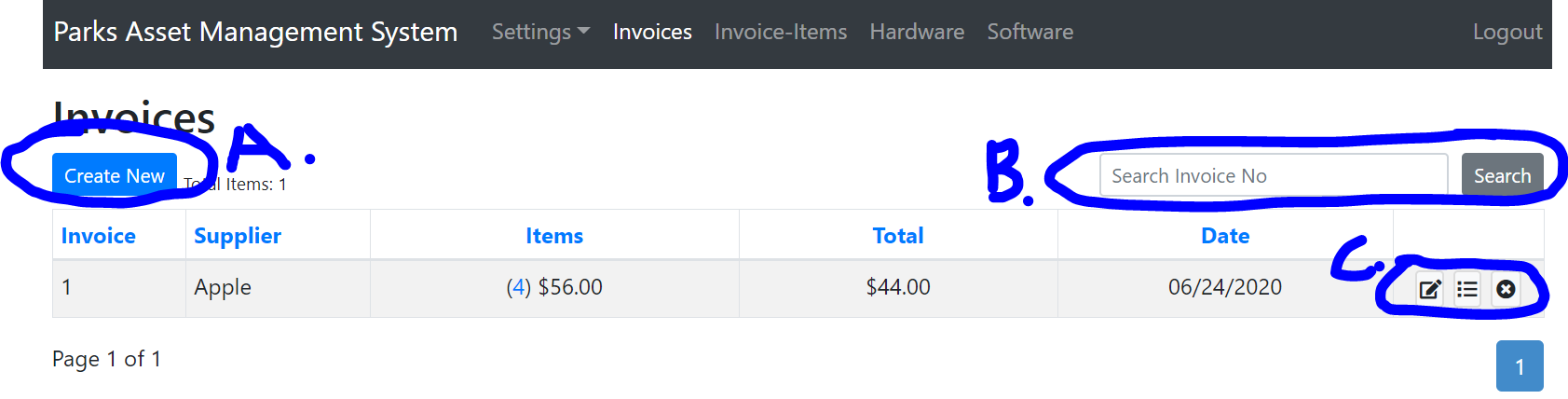
**Parks Asset Management System v.1**Updated: June 4, 2020  
Created by: C. Klippel  
Application Details: .NET, Entity Framework 4.8, Razor UI, BootStrap 4.3.1, JQuery 3.4.1

**Purpose:**A web-based application to accurately capture invoices (purchases) of assets made by the Parks IT Division. In addition, the application can accurately track the location of the asset and who currently is in possession of the asset. The system can also capture locations (parks), buildings, and rooms (including addresses, longitude and latitude, room types, capacity, and amenities). The application pulls in Park Users via Active Directory, which includes first and last name, email, and username. The system authenticates login via BC-Identity (AD). The application also has roles set up; therefore, specific actions within the application can be performed only by certain users.

**Audit:**The System creates logs of the following tables: Invoices, Invoice Items, and Assets. The logs are triggered by Create, Update, and Delete. Captures the action, the user, and the date/time. **Layout:**The layout for all pages is basically the same. At the top, you will have the navigation bar. Above the grid you will see the page name, and the total items. At the bottom of the grid displays the current page and the total pages. The bottom right navigates you through all the pages.

  
  
A. “Create New” – Clicking here takes you to insert a new record.  
B. Search box, you can search for a specific invoice number.  
C. These are the admin tools: the “pencil” button is to edit the record, the “bullet list” button is to see the details, and the “X” button is to delete.  
  
**Basic Functionality:**  
An invoice must be created first, then you can create an invoice item. Invoice items are the lines or items that you find on a typical Invoice. There is no limit to how many items you can have per Invoice. There is a limit to how many assets per invoice item - 1000. Creating an invoice item will populate the Assets Table. Hardware/Software type asset is simply a Type field stored in the Assets Table. You can only delete or edit an asset. If you need to create more assets, you must increase the quantity on the invoice item form that is associated to that asset. Only unique Make/Model or Manufacturer/Product combinations per Invoice.  
  
**Login**:  
- A active AD account is required, and at least one application role is required to log into the application.

**Roles**:  
View Invoices - Allows a user to View Invoices  
Create Invoices - Allows a user to Create Invoices  
Edit Invoices - Allows a user to Edit Invoices  
Delete Invoices - Allows a user to Delete Invoices  
View Invoice Items - Allows a user to View Invoice Items  
Create Invoice Items - Allows a user to Create Invoice Items  
Edit Invoice Items - Allows a user to Edit Invoice Items  
Delete Invoice Items - Allows a user to Delete Invoice Items  
View Hardware - Allows a user to View Hardware Assets  
Edit Hardware - Allows a user to Edit Hardware Assets  
Delete Hardware - Allows a user to Delete Hardware Assets  
View Software - Allows a user to View Software Assets   
Edit Software - Allows a user to Edit Software Assets  
Delete Software - Allows a user to Delete Software Assets  
Manage Suppliers - Allows a user to Create, Edit, and Delete Suppliers  
Manage Manufacturers - Allows a user to Create, Edit, and Delete Manufacturers  
Manage Products - Allows a user to Create, Edit, and Delete Products  
Manage Locations - Allows a user to Create, Edit, and Delete Locations  
Manage Buildings - Allows a user to Create, Edit, and Delete Buildings  
Manage Rooms - Allows a user to Create, Edit, and Delete Rooms  
Manage Users - Allows a user to Edit Users and their Roles

**Pages / Forms:  
  
Invoices**   
-List of Invoices. Create, Update, and Delete.  
Cannot delete if you have Invoice Items associated to the Invoice. Those Invoice Items must be removed first.

PO\* (Purchase Order Number)  
Invoice Number\*  
Supplier\* (List of Suppliers)  
Total Price\* (not calculated)  
Purchase Date\*  
  
\*required  
---  
  
**Invoice Items**   
-List of Invoice Items or Lines that are typically included on an Invoice. Create, Update and Delete.   
Cannot delete an Invoice Item without removing the associated assets (Hardware / Software) first. Invoice items are either a Hardware or Software type. You then select the category that coordinates with it (e.g. Hardware type has Laptop, Computer, Monitor, Printer).  
  
Hardware**:**  
Invoice\* (List of invoices)  
Asset Type\* (Hardware or Software)  
Asset Category\* (List of Categories per Asset Type)  
Make\* (List of Makes per Type and Category)  
Model\* (List of Models per Type, Category, and Make)  
Quantity\*  
Unit Price\*  
End of Warranty\*  
Notes  
--  
*Default Values*  
-This inserts values into the list fields below upon initial creation of entry  
Date Received  
Serials (List serials by comma, max 25 length, can’t be duplicates in list or db, regex)  
Location  
Building  
Room  
Assigned User

Software**:**  
Invoice\* (List of invoices)  
Asset Type\* (Hardware or Software)  
Asset Category\* (List of Categories per Asset Type)  
Manufacturer\* (List of Makes per Type and Category)  
Product\* (List of Models per Type, Category, and Make)  
License Types\* (User, Hardware-Single, Hardware-Multi)  
License Key (Only for License-Single Type)  
Quantity\*  
Unit Price\*  
Expiration Date\*  
Notes  
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Default Values for License Type - User  
-This inserts default values for the asset fields below.  
Date Received  
Assigned User

Default Values for License Type - Hardware-Single  
-This inserts default values for the asset fields below.  
Date Received  
Assigned Asset

Default Values for License Type - User  
-This inserts default values for the asset fields below.  
Date Received  
License Keys (List serials by comma, max 25 length, can’t be duplicates in list or db, regex)  
Assigned User  
  
\* required

**Hardware   
-**List of Hardware Assets. Edit and Delete.   
Assets are associated to an Invoice Item. Make and Model are updated via the Invoice Item.   
You can add more Assets by increasing the quantity on the associated Invoice Item.Item Number\*\* (Invoice number plus Invoice Item Number)  
Asset Category\*\*  
Make\*\*  
Model\*\*  
Date Received\* (Should be pre-filled)  
Asset Tag\* (4 or 6 digits)  
Serial\* (25 max length)  
Mac Address  
End of Warranty\*\*  
Status\* (Active / Surplus)  
Location\*  
Building  
Room  
Assigned User (List of Active Users)  
Notes  
  
\*\* read only  
\* required

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**Software**Item Number\*\* (Invoice number plus Invoice Item Number)  
Asset Category\*\*  
Manufacturer\*\*  
Product\*\*  
Date Received\* (Should be pre-filled)  
License Type\*\*  
License Key (Only for Hardware-Single, Multi License Types)  
Expiration Date\*\*  
Status\* (Active / Surplus)  
Assigned User (Only for User License Types, List of Active Users)  
Assigned Asset (Only for Hardware-Single, Multi License Types, List of Active Assets)  
Notes  
  
\*\* read only  
\* required

**Maintenance Tables**  
(Manufactures, Products, Suppliers, Locations, Buildings, Rooms, Users)

**Manufacturers**  
-List of Manufacturers. Create, Update, and Delete. Can only Delete if there are no products or invoice items associated.  
  
Name\*  
Display Name  
Description  
Email  
Phone  
URL  
Active\* ^ (Yes or No)  
Notes  
  
\* required  
  
**Products**  
-List of Products. These relate directly to a Manufacturer. They have an Asset Type, Asset Category, and Manufacturer tied to it. Create, Update and Delete. Can only delete if there is no Invoice Item associated to it. Updating the manufacturer (selecting a different manufacturer from the list) will update the invoice items that are associated to this product.

Asset Type\* (Hardware or Software)  
Asset Category\* (List of Categories based on Asset Type)  
Manufacturer\* (List of active Manufacturers)  
Name\*  
Display Name  
Description  
Active\* ^ (Yes or No)  
Notes  
  
\* required  
  
**Suppliers**  
-List of Suppliers. Create, Update, and Delete. Can only delete if no Invoices are associated to it.  
  
Name\*  
Display Name  
Contact Name  
Description  
Email  
Phone  
URL  
Address 1  
Address 2  
City  
State (List of States)  
Postal Code  
Active\* ^ (Yes or No)  
Notes  
  
\* required  
  
**Locations**  
-List of Locations / Parks. Create, Update, and Delete. Can only delete if there are no buildings or Assets associated to it.   
  
Name\*  
Display Name  
Code  
Description  
Phone  
Address 1  
Address 2  
City  
State (List of States)  
Postal Code  
Longitude  
Latitude  
Lead Manager (List of Active Users)  
Active\* ^ (Yes or No)  
Notes  
  
\* required  
  
**Buildings**  
-List of Buildings. Create, Update, and Delete. Can only delete if there are no rooms or Assets associated to it. Updating the location (selecting a different location from the list) will update the assets that are associated to this building.  
  
Location\* (List of Active Locations)  
Name\*  
Display Name  
Code  
Description  
Phone  
Address 1  
Address 2  
City  
State (List of States)  
Postal Code  
Longitude  
Latitude  
Active\* ^ (Yes or No)  
Notes  
  
\* required

**Rooms**  
-List of Rooms. Create, Update, and Delete. Can only delete if there are no Assets associated to it. Updating the location (selecting a different location from the list) and/or the building (selecting a different building from the list) will update the assets that are associated to this room.  
  
Location\* (List of Active Locations)  
Building\* (List of Active Buildings)  
Name\*  
Display Name  
Description  
Capacity  
Room Type\* (List of Room Types)  
Amenities (Checkboxes of Amenities)  
Longitude  
Latitude  
Active\* ^ (Yes or No)  
Notes  
  
\* required

**Users**  
-List of Users. Pulled from Active Directory. Update only.  
  
Name\*\*  
Active\* ^ (Yes or No)  
Roles (Checkboxes of all Roles)  
Notes  
  
\* required  
\*\* read only

^ If an item’s active status is changed to ‘No’, it will not show in the list of its type. However, it will still show in the edit form where a list of that type is contained. Once you select a different item in that list it will no longer appear.

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**Database**:  
  
List of Tables and basic descriptions:  
  
**Amenities** – Table of amenities that are available for a room (e.g. white board, projector, etc)  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[Name] [varchar](150) NULL,

[Sequence] [int] NOT NULL,

[Active] [bit] NOT NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**AssetCategories** – Categories for Hardware/Software Assets  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[Name] [varchar](150) NULL,

[Description] [varchar](300) NULL,

[AssetTypeId] [int] NULL,

[Active] [bit] NOT NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**Assets** – Main table of all assets  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[InvoiceItemId] [int] NULL,

[AssetTag] [int] NULL,

[Serial] [varchar](150) NULL,

[LicenseKeyMulti] [varchar](150) NULL,

[MacAddress] [varchar](255) NULL,

[StatusId] [int] NULL,

[DateReceived] [datetime] NULL,

[LocationId] [int] NULL,

[BuildingId] [int] NULL,

[RoomId] [int] NULL,

[AssignedAssetId] [int] NULL,

[AssignedUserId] [int] NULL,

[Notes] [varchar](500) NULL,

[Display] [bit] NOT NULL,

[IsDeleted] [bit] NOT NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**AssetStatus** – Status of an Asset. Active / Surplus   
 [Id] [int] IDENTITY(1,1) NOT NULL,

[Name] [varchar](150) NULL,

[Description] [varchar](300) NULL,

[Active] [bit] NOT NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**AssetTypes** – Types of Assets. Hardware / Software  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[Name] [varchar](150) NULL,

[Description] [varchar](300) NULL,

[Active] [bit] NOT NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**AuditLogs** – Logs of changes made to Invoices, Invoice Items and Asset tables  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[PrimaryKeyId] [int] NOT NULL,

[TableName] [varchar](255) NULL,

[ColumnName] [varchar](255) NULL,

[OperationName] [varchar](255) NULL,

[OldValue] [varchar](max) NULL,

[NewValue] [varchar](max) NULL,

[ModifiedBy] [int] NULL,

[DateModified] [datetime] NULL,

[ModifiedByName] [varchar](255) NULL,  
  
**Buildings** – List of buildings (Park Buildings) associated to a Location  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[Name] [varchar](150) NULL,

[DisplayName] [varchar](300) NULL,

[Code] [varchar](10) NULL,

[Description] [varchar](300) NULL,

[Phone] [varchar](30) NULL,

[LocationId] [int] NULL,

[Latitude] [decimal](12, 7) NULL,

[Longitude] [decimal](12, 7) NULL,

[Geography] [geography] NULL,

[AddressLine1] [varchar](255) NULL,

[AddressLine2] [varchar](255) NULL,

[CityId] [int] NULL,

[StateId] [int] NULL,

[PostalCode] [varchar](20) NULL,

[Active] [bit] NOT NULL,

[IsDeleted] [bit] NOT NULL,

[Notes] [varchar](500) NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**Cities** – Table of Cities (Broward cities as of now)  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[Name] [varchar](150) NULL,

[StateId] [int] NULL,

[Active] [bit] NOT NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**InvoiceItems** – Items / Lines related to an Invoice  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[InvoiceId] [int] NULL,

[InvoiceItemNumber] [int] NULL,

[AssetTypeId] [int] NULL,

[AssetCategoryId] [int] NULL,

[ManuId] [int] NULL,

[ProductId] [int] NULL,

[LicenseTypeId] [int] NULL,

[LicenseKeySingle] [varchar](8000) NULL,

[UnitPrice] [decimal](18, 2) NULL,

[ExpirationDate] [datetime] NULL,

[Notes] [varchar](500) NULL,

[IsDeleted] [bit] NOT NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**Invoices** – Table of Purchase orders  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[PONumber] [varchar](50) NULL,

[InvoiceNumber] [varchar](50) NULL,

[SupplierId] [int] NULL,

[PurchaseDate] [datetime] NULL,

[TotalPrice] [decimal](18, 2) NULL,

[IsDeleted] [bit] NOT NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**LicenseTypes** – Software License Types  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[Name] [varchar](150) NULL,

[Sequence] [int] NULL,

[Description] [varchar](300) NULL,

[Active] [bit] NOT NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**Locations** – Table of Locations / parks  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[Name] [varchar](300) NULL,

[DisplayName] [varchar](300) NULL,

[Code] [varchar](10) NULL,

[Description] [varchar](300) NULL,

[Phone] [varchar](30) NULL,

[Latitude] [decimal](12, 7) NULL,

[Longitude] [decimal](12, 7) NULL,

[Geography] [geography] NULL,

[AddressLine1] [varchar](255) NULL,

[AddressLine2] [varchar](255) NULL,

[CityId] [int] NULL,

[StateId] [int] NULL,

[PostalCode] [varchar](20) NULL,

[LeadManagerId] [int] NULL,

[Active] [bit] NOT NULL,

[IsDeleted] [bit] NOT NULL,

[Notes] [varchar](500) NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**Manufacturers** – Table of Manufacturers  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[Name] [varchar](150) NULL,

[DisplayName] [varchar](150) NULL,

[Description] [varchar](300) NULL,

[SupportUrl] [varchar](150) NULL,

[SupportPhone] [varchar](30) NULL,

[SupportEmail] [varchar](200) NULL,

[Notes] [varchar](500) NULL,

[Active] [bit] NOT NULL,

[IsDeleted] [bit] NOT NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**Products** – Table of Products related to a Manufacturer, Asset Type, and Asset Category  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[Name] [varchar](150) NULL,

[DisplayName] [varchar](150) NULL,

[Description] [varchar](300) NULL,

[ManuId] [int] NULL,

[AssetTypeId] [int] NULL,

[AssetCategoryId] [int] NULL,

[Active] [bit] NOT NULL,

[IsDeleted] [bit] NOT NULL,

[Notes] [varchar](500) NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**Roles** – Table of Roles available for the application for a User  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[Name] [varchar](150) NULL,

[Description] [varchar](300) NULL,

[Active] [bit] NOT NULL,

[Sequence] [int] NOT NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**RoomAmenities** – Amenities associated to a room  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[RoomId] [int] NOT NULL,

[AmenityId] [int] NOT NULL,

[IsDeleted] [bit] NOT NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**Rooms** – Table of Rooms, with Building associated  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[Name] [varchar](150) NULL,

[DisplayName] [varchar](300) NULL,

[Description] [varchar](300) NULL,

[RoomTypeId] [int] NULL,

[BuildingId] [int] NULL,

[Latitude] [decimal](12, 7) NULL,

[Longitude] [decimal](12, 7) NULL,

[Geography] [geography] NULL,

[Capacity] [int] NULL,

[Active] [bit] NOT NULL,

[IsDeleted] [bit] NOT NULL,

[Notes] [varchar](500) NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**RoomTypes** – Table of Room Types (e.g. Office, Meeting room)  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[Name] [varchar](150) NULL,

[Sequence] [int] NOT NULL,

[Active] [bit] NOT NULL,

[IsDeleted] [bit] NOT NULL,

[Notes] [varchar](500) NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**States** – Table of US States  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[Code] [varchar](10) NULL,

[Name] [varchar](150) NULL,

[Active] [bit] NOT NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**Suppliers** – Table of Suppliers  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[Name] [varchar](150) NULL,

[DisplayName] [varchar](150) NULL,

[Description] [varchar](300) NULL,

[Url] [varchar](255) NULL,

[Phone] [varchar](20) NULL,

[Email] [varchar](150) NULL,

[ContactName] [varchar](150) NULL,

[AddressLine1] [varchar](255) NULL,

[AddressLine2] [varchar](255) NULL,

[City] [varchar](100) NULL,

[StateId] [int] NULL,

[PostalCode] [varchar](20) NULL,

[Notes] [varchar](500) NULL,

[Active] [bit] NOT NULL,

[IsDeleted] [bit] NOT NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**UserRoles** – User and the Roles associated to them  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[UserId] [int] NOT NULL,

[RoleId] [int] NOT NULL,

[IsDeleted] [bit] NOT NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,  
  
**Users** – Table of users, Imported from AD  
 [Id] [int] IDENTITY(1,1) NOT NULL,

[EmployeeId] [varchar](50) NULL,

[Email] [varchar](500) NULL,

[Phone] [varchar](20) NULL,

[UserName] [varchar](50) NULL,

[FirstName] [varchar](50) NULL,

[LastName] [varchar](50) NULL,

[Division] [varchar](50) NULL,

[Park] [varchar](50) NULL,

[Active] [bit] NOT NULL,

[AdminCreated] [bit] NOT NULL,

[Notes] [varchar](500) NULL,

[CreatedBy] [int] NULL,

[ModifiedBy] [int] NULL,

[DateAdded] [datetime] NULL,

[DateModified] [datetime] NULL,