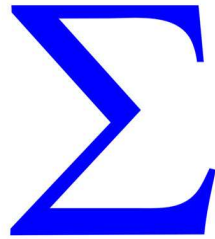


Cover Zero Application Instructions



Proposal Project Name: ScheduleSync Cover Zero Training Scheduler

Student Name: Delvon Fontenot

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Application Design and Testing

Design Document

Class Design

Below is the ER diagram for the application. Provided in the diagram are the classes that are required for the database. The classes are Coach, Appointment, Athlete, Address, City, and Country. The relationships of the classes are as followed:

- A Coach can have one to many Appointments
- An Athlete can have one to many Appointments
- An Address can have one to many Athletes
- A City can have one to many Addresses
- A Country can have one to many Cities

In the diagram below, class primary keys are represented with the gold key symbol. Class foreign keys are indicated by the red diamond. The athlete class uses single class inheritance for the corner and safety classes.

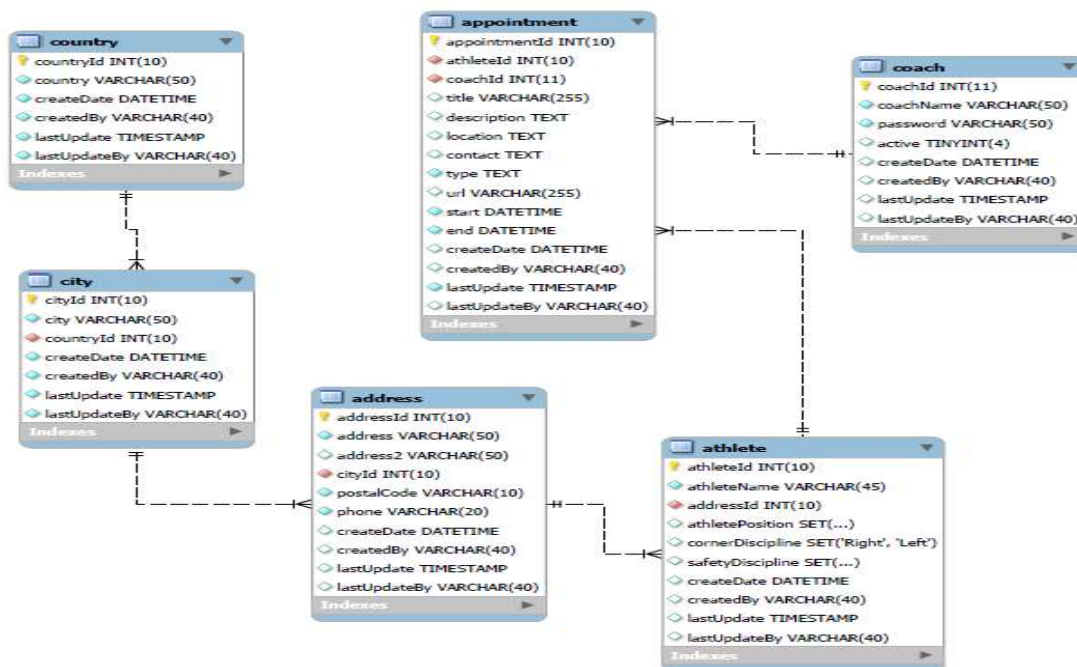


Figure 1: ERD

UI Design

Below is a low fidelity wireframe of the ScheduleSync application. The application is designed with a user-friendly user interface that will make interacting with the application as straight-forward as possible. Figure 2 illustrates the main scheduling window that most of the viewing interaction will take place. Figures 3 and 4 illustrate the Appointment and Athlete windows which will contain most of the athlete and schedule interactions.

The wireframe for the main scheduling window is divided into several functional areas:

- Appointments Section:**
 - Navigation: Radio buttons for 'Week' and 'Month' views, a 'Load Requested' button, and a 'Load All' button.
 - Search: A search bar labeled 'Appointment Displayed for December'.
 - Table: A table with columns for Name (job title), Position, Address, and Zip. It contains several rows of data.
 - Buttons: 'View/Edit', 'New', and 'Delete' buttons are located below the table.
- Athletes Section:**
 - Search: A search bar labeled 'Athletes'.
 - Table: A table with columns for Name (job title), Position, Address, and Zip. It contains several rows of data.
 - Buttons: 'View/Edit', 'New', and 'Delete' buttons are located below the table.
- Report Section:**
 - Buttons: 'Select Report' (dropdown) and 'Generate Report'.
- Footer:** An 'Exit' button is located at the bottom right of the window.

Figure 2: Main Window Scheduling Wireframe

The Appointment wireframe contains the following fields and controls:

- Appointment ID: Text input field.
- Athlete Name: Text input field.
- Type: Text input field.
- Coach: Text input field.
- Date: Date picker (calendar icon).
- Time: Time picker (calendar icon).
- Buttons: 'Save' and 'Close' buttons.

Figure 4: Appointment Wireframe

The Athlete wireframe contains the following fields and controls:

- Athlete ID: Text input field.
- Name: Text input field.
- Position: Text input field.
- Discipline: Text input field.
- Address: Text input field.
- Phone: Text input field.
- City: Text input field.
- Country: Text input field.
- Buttons: 'Save' and 'Close' buttons.

Figure 3: Athlete Wireframe

Unit Test Plan

Introduction

Purpose

The testing of the application will be done with unit testing. The purpose of the unit testing is to validate method functionality. The tests included in the document: test the setting of the athlete discipline to make sure the athletes are linked with the correct position and discipline, and verifies setting the correct stored procedure to view the correct athlete position.

Overview

The stored procedure for viewing the athlete position is set via a method based on the athlete and type of athlete selected. If the athlete is a corner (IsCorner = true) the method returns true and selects information only related to athletes that are corners. If the athlete is not a corner (IsCorner = false), the method returns false and selects information related to athletes that are safeties (not corners).

The other test is needed to verify the method for selecting the athlete discipline based on his position. It also checks if the selected athlete IsCorner value is true or false and sets the athlete discipline based on the bool returned.

Test Plan

Items

I will be using the xUnit testing framework for .Net to complete the testing of the methods. The methods that will be tested are Setsp_AthleteID(IsCorner) and SetAthleteDiscipline(IsCorner). IsCorner is a bool that checks if an athlete is a corner or not. It returns true if the athlete is a corner and false if the athlete is a safety. IsCorner bool will be the input for the methods. For the Setsp_AthleteID method, the optional output values are

“sp_viewEditCornerByID” or "sp_viewEditSafetyByID" based on the value of IsCorner. These outputs need to be tested for in the Unit tests. For the SetAthleteDiscipline method, the optional output values are "cornerDiscipline" or "safetyDiscipline" and are also based on the value of IsCorner. These outputs need to be validated as well in the Unit tests.

Features

xUnit testing framework provides the Theory attribute. This attribute allows more than one execution of the same test method. After test completion, the results will be displayed as pass or failed. Failed results will show the output of the method.

Deliverables

The test results showing successful method execution of the above stated methods.

Tasks

- Acquire xUnit testing framework from NuGet.
- Create new test class library.
- Create test class
- Create test methods
- Provide methods with inputs and expected outputs
- Run test

Needs

The testing will be done in Visual Studio 19 using the latest version of the xUnit testing framework. It is good practice to create the test methods before the actual application code. The methods are expected to fail until successful logic is in place to provide a passing test. The inputs and expected results are also needed to perform the tests.

Pass/Fail Criteria

The tests pass if the actual results match the expected results of the methods based on the input. A failed test will show actual results that do not match the expected results.

Specifications

Below is a screenshot of the test code for performing the tests.

```
public class SetAthleteTests
{
    [Theory]
    [InlineData("sp_viewEditCornerByID", true)]
    [InlineData("sp_viewEditSafetyByID", false)]
    0 references | Delvon Fontenot, Less than 5 minutes ago | 1 author, 1 change
    public void SetSp_AthleteIDShouldSetSp(string expected, bool isCorner)
    {
        // Act
        string actual = Schedule.SetSp_AthleteID(isCorner);

        // Assert
        Assert.Equal(expected, actual);
    }

    [Theory]
    [InlineData("cornerDiscipline", true)]
    [InlineData("safetyDiscipline", false)]
    0 references | Delvon Fontenot, Less than 5 minutes ago | 1 author, 1 change
    public void SetAthleteDisciplineSouldSetDiscipline(string expected, bool isCorner)
    {
        // Act
        string actual = Schedule.SetAthleteDiscipline(isCorner);

        // Assert
        Assert.Equal(expected, actual);
    }
}
```

Figure 5: xUnit tests

Procedures

To complete the testing process, create the unit tests for the methods to be tested. This requires inputs needed to produce the desired output. After creating the test methods, the Theory attribute is used to provide data for each test that needs to be performed by the methods. Click run to run the tests and results will be provided by the framework.

Test Number	Description / Method	Input	Expected	Actual	Pass/Fail
1	SetSp_AthleteID	IsCorner = True	"sp_viewEditCornerByID"	"sp_viewEditCornerByID"	Pass
2	SetSp_AthleteID	IsCorner = False	"sp_viewEditSafetyByID"	"sp_viewEditSafetyByID"	Pass
3	SetAthleteDiscipline	IsCorner = True	"cornerDiscipline"	"cornerDiscipline"	Pass
4	SetAthleteDiscipline	IsCorner = False	"safetyDiscipline"	"safetyDiscipline"	Pass

Unit Test Results

Here is a screenshot of the test results. All tests pass as the actual results match the expected result, indicating that the `SetSp_AthleteID` and `SetAthleteDiscipline` methods of the `Schedule` class outputs are expected based on the inputs.

Test	Duration
✓ CooverZeroScheduling.Tests (4)	167 ms
✓ CooverZeroScheduling.Tests (4)	167 ms
✓ SetAthleteTests (4)	167 ms
✓ SetAthleteDisciplineSouldSetDiscipline (2)	165 ms
✓ SetAthleteDisciplineSouldSetDiscipline(expected: "cornerDiscipline", isCorner: True)	1 ms
✓ SetAthleteDisciplineSouldSetDiscipline(expected: "safetyDiscipline", isCorner: False)	164 ms
✓ SetSp_AthleteIDShouldSetSp (2)	2 ms
✓ SetSp_AthleteIDShouldSetSp(expected: "sp_viewEditCornerByID", isCorner: True)	1 ms
✓ SetSp_AthleteIDShouldSetSp(expected: "sp_viewEditSafetyByID", isCorner: False)	1 ms

Figure 6: Passed xUnit tests

Source Code

Source code for the application is included with the other files provided.

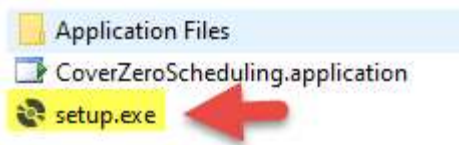
User Guide

Introduction

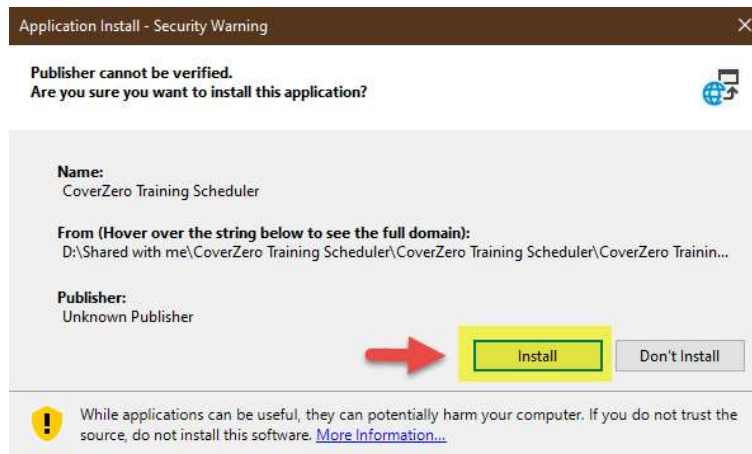
This guide provides the steps necessary to setup and run the ScheduleSync Cover Zero Training Application on Windows. It provides steps to create a user, login, and procedures needed to manage athletes and training appointments. It also provides information on viewing reports along with other features included in the application.

Installation

1. Extract the provided zip file.
2. Run the setup.exe file in the extracted folder.



3. If prompted with the Security Warning below, select Install. The application will begin the install process.



4. After completed the application will run and you will be prompted with a login screen.

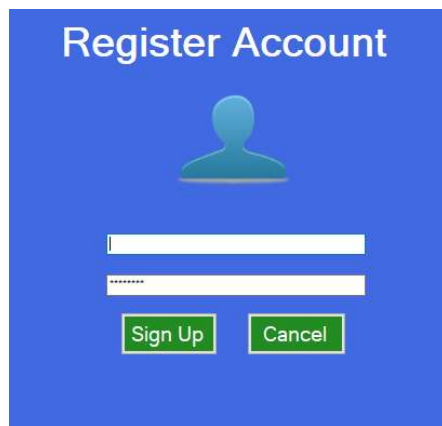
Using the Application

Signup and Login

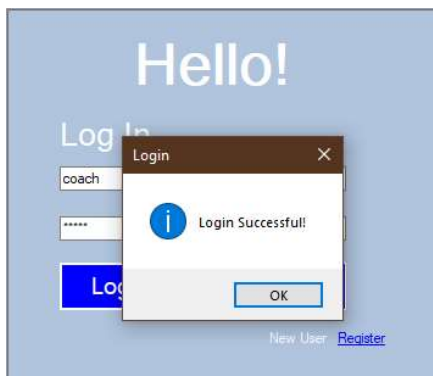
1. *If you are a new user, Click the "Register" link in the bottom right corner of the app.*



2. *You will be prompted with the following screen. Enter the desired Username and password and click Sign-up.*



3. *If the username and password is valid and not already take your account will be registered. Click OK and you will be returned to the login screen where you can use your account to login.*
4. *Login with the account you created.*



5. Once logged in, you will be presented with the main scheduling window.

Cover Zero Training

Section for managing Appointments

Section for creating Reports

Appointments

View Appointments: Nov 30, 2020 ☒ Week ☐ Month Load Requested

Load All

Appointments Displayed for: All of your Appointments are Displayed Search For ...

Type	Athlete	Start	End	AthleteID	AppointmentID	Coach
------	---------	-------	-----	-----------	---------------	-------

Upcoming Appointments: None View/Edit New Delete

Athletes

Section for managing Athletes

Search for...

AthleteID	Position	Name	Phone #	Address	City	Country	Zip
30	Corner	Patrick Robinson	(548) 255-5...	Rolling Oaks	New Orleans	US	77497
31	Corner	Marshall Lattimore	(504) 784-9...	3221 Red St	New Orleans	US	77497
33	Safety	Marcus Williams	(548) 255-5...	Rolling Oaks	New Orleans	US	77497
34	Safety	Malcolm Jenkins	(589) 748-7...	3221 Red St	New Orleans	US	77497
38	Safety	C.J. Gardner-Johnson	(664) 488-7...	209 West St	Houston	US	77574
47	Corner	Ken Crawley	(558) 877-4...	Left St	Houston	US	77574
48	Safety	P.J. Williams	(585) 874-8...	East St	New Orleans	US	77497
37	Corner	Jarvis Jenkins	(337) 948-5...	142 Pine St	Cancun	Mexico	33587

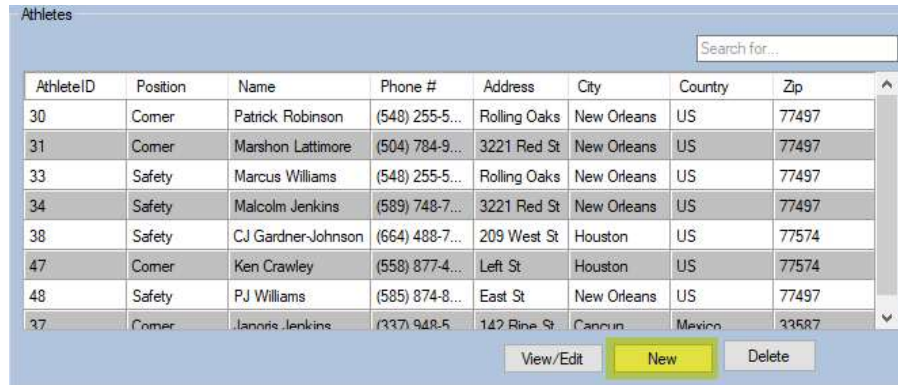
View/Edit New Delete

Exit

Scheduling

Create an Athlete *

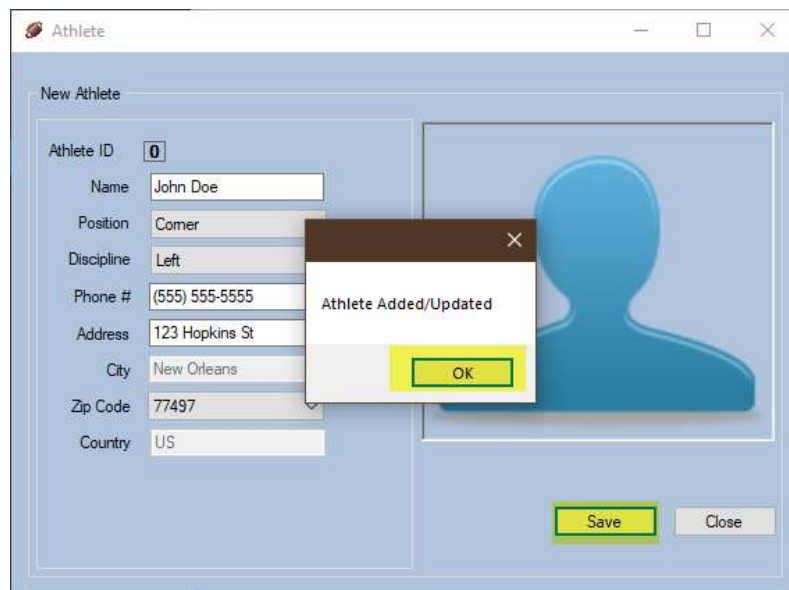
1. In the athlete section of the scheduling window, there will be a list of athletes currently signed up for Cover Zero Training. If there are no athletes available you



AthleteID	Position	Name	Phone #	Address	City	Country	Zip
30	Comer	Patrick Robinson	(548) 255-5...	Rolling Oaks	New Orleans	US	77497
31	Comer	Marshon Lattimore	(504) 784-9...	3221 Red St	New Orleans	US	77497
33	Safety	Marcus Williams	(548) 255-5...	Rolling Oaks	New Orleans	US	77497
34	Safety	Malcolm Jenkins	(589) 748-7...	3221 Red St	New Orleans	US	77497
38	Safety	CJ Gardner-Johnson	(664) 488-7...	209 West St	Houston	US	77574
47	Comer	Ken Crawley	(558) 877-4...	Left St	Houston	US	77574
48	Safety	PJ Williams	(585) 874-8...	East St	New Orleans	US	77497
37	Comer	Jannoris Jenkins	(337) 948-5...	142 Pine St	Cancun	Mexico	33587

will need to create an athlete before you create and appointment for the athlete. To do so, click **New** in the athlete section.

2. Enter the required information on the athlete and click **Save** (Save will be disabled unless all correct required information is entered). Athlete will be added to the database. Click OK.



New Athlete

Athlete ID:

Name:

Position:

Discipline:

Phone #:

Address:

City:

Zip Code:

Country:

Athlete Added/Updated

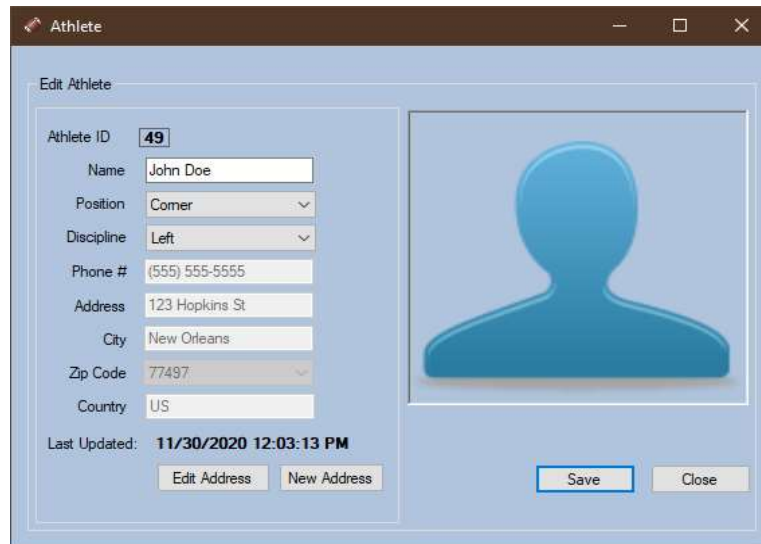
OK

Save **Close**

* Data presented is for test and demonstration purposes only

View/Edit an Athlete [†]

1. To View/Edit an athlete, select the athlete from the list in the athlete section of the scheduling window and click **View/Edit** double click the athlete.
2. This will bring up the Edit Athlete window where you can make any changes needed to the athlete or address information. The **Edit Address** button will enable editing of the current address. The **New Address** button will clear the current



information, allowing you to create a new address for the athlete. When you are done, click **Save** to save changes or **Close** if no changes are needed.

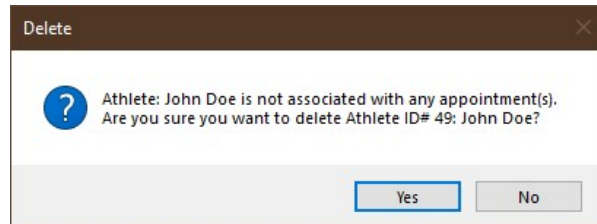
Delete an Athlete

1. To delete an athlete, select the athlete that you would like to delete and click **Delete**.
2. If the athlete is associated with an appointment with any coach, you will be notified and deletion of the athlete will not be allowed.



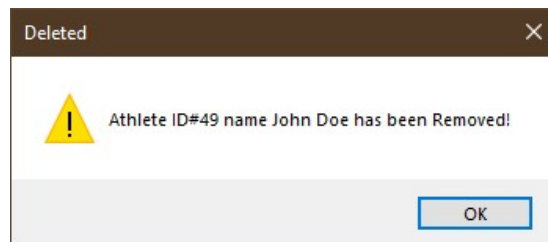
[†] Data presented is for test and demonstration purposes only

3. If the athlete is not associated with appointment with any coach, you will be prompted to confirm deletion of the athlete.



Click Yes if you would like to proceed or No if you do not wish to delete the athlete.

4. You will be prompted upon successful deletion of the athlete.



Search Athlete

1. Using the search feature, you can search athlete information for position, name, or city. Type the search criteria in the search box in the athlete section. Search results will highlight any athlete information found in the search criteria.

Example:


Athletes

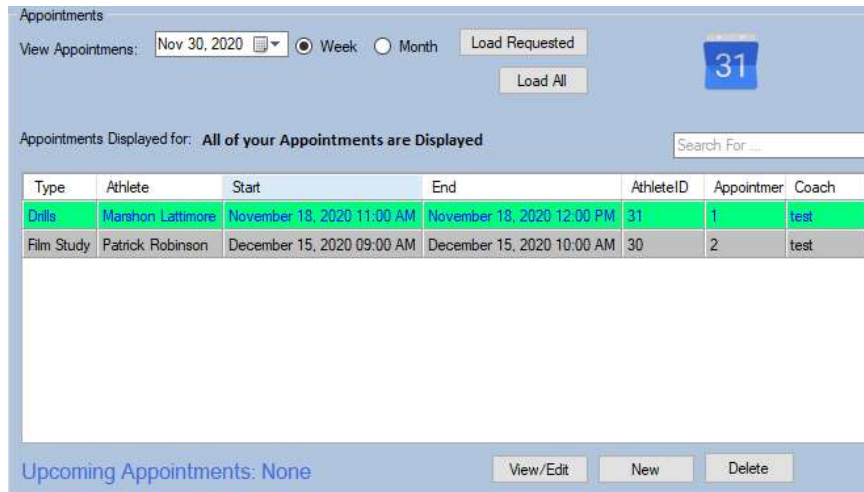
Safe

AthleteID	Position	Name	Phone #	Address	City	Country	Zip
30	Corner	Patrick Robinson	(548) 255-5...	Rolling Oaks	New Orleans	US	77497
31	Corner	Marshon Lattimore	(504) 784-9...	3221 Red St	New Orleans	US	77497
33	Safety	Marcus Williams	(548) 255-5...	Rolling Oaks	New Orleans	US	77497
34	Safety	Malcolm Jenkins	(589) 748-7...	3221 Red St	New Orleans	US	77497
38	Safety	CJ Gardner-Johnson	(664) 488-7...	209 West St	Houston	US	77574
47	Corner	Ken Crawley	(558) 877-4...	Left St	Houston	US	77574
48	Safety	PJ Williams	(585) 874-8...	East St	New Orleans	US	77497
37	Corner	Janoris Jenkins	(337) 948-5...	142 Pine St	Cancun	Mexico	33587

View/Edit New Delete

Create an Appointment[‡]

3. In the Appointment section of the scheduling window, all of the appointment for the current user (coach) will be displayed in the list. If you have no appointments available you can create a new appointment by clicking 

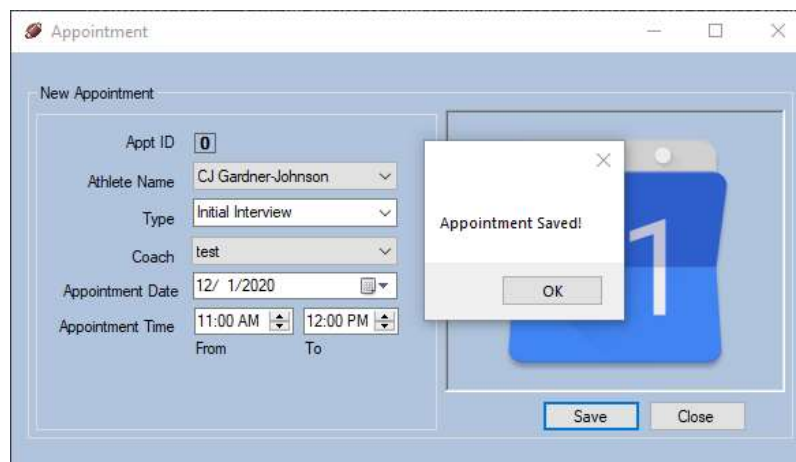


The screenshot shows the 'Appointments' window. At the top, there's a 'View Appointments:' section with a date dropdown set to 'Nov 30, 2020', radio buttons for 'Week' (selected) and 'Month', and buttons for 'Load Requested' and 'Load All'. A calendar icon shows the date '31'. Below this, it says 'Appointments Displayed for: All of your Appointments are Displayed' with a search bar. A table lists appointments:

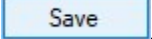
Type	Athlete	Start	End	AthleteID	Appointmer	Coach
Drills	Marshall Lattimore	November 18, 2020 11:00 AM	November 18, 2020 12:00 PM	31	1	test
Film Study	Patrick Robinson	December 15, 2020 09:00 AM	December 15, 2020 10:00 AM	30	2	test

At the bottom, it says 'Upcoming Appointments: None' and has buttons for 'View/Edit', 'New', and 'Delete'.

4. You will be presented with the New Appointment window where you can enter the required information for the appointment. Select athlete from the current athlete pool, select or enter the appointment type, and select the appointment times and date.[§]



The screenshot shows the 'New Appointment' window. It has fields for 'Appt ID' (0), 'Athlete Name' (CJ Gardner-Johnson), 'Type' (Initial Interview), 'Coach' (test), 'Appointment Date' (12/ 1/2020), and 'Appointment Time' (11:00 AM to 12:00 PM). There are 'Save' and 'Close' buttons at the bottom. A small dialog box titled 'Appointment Saved!' with an 'OK' button is overlaid on the window.

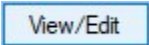
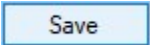
Appointment information will be validated on clicking . ** Once validated, the appointment information will be saved to the database. Click OK.

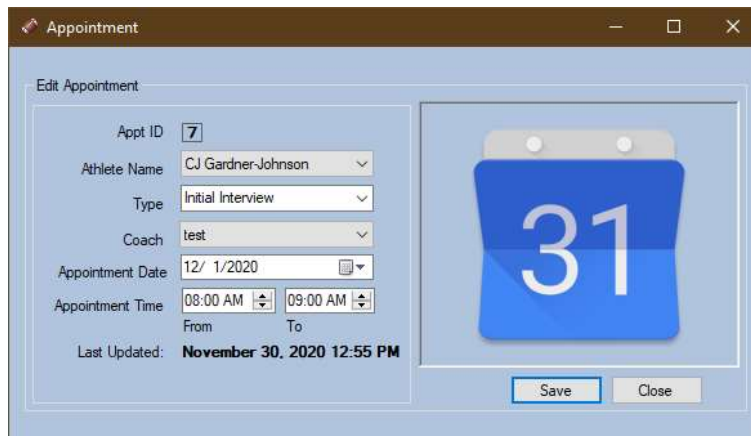
[‡] Data presented is for test and demonstration purposes only

[§] You can create an appointment for any coach currently registered

** Appointments are not currently allowed on weekends, before 9 am, and after 5 pm.


View/Edit an Appointment ^{††}

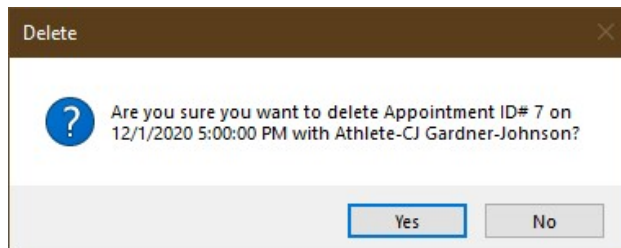
1. To View/Edit an appointment, select the appointment that you would like to view from the list in the appointment section of the scheduling window and click  or double click the athlete.
2. This will bring up the Edit Appointment window where you can make any changes needed to the appointment information. When you are done, click  to



save changes or  if no changes are needed.

Delete an Appointment

1. To delete an appointment, select the appointment that you would like to delete and click .
2. You will be prompted to confirm deletion of the appointment.



Click Yes if you would like to proceed or No if you do not wish to delete the appointment.

^{††} Data presented is for test and demonstration purposes only

3. You will be prompted upon successful deletion of the appointment.



Search Appointment

1. Using the search feature, you can search appointment information for type or athlete name. Type the search criteria in the search box in the appointment section. Search results will highlight any appointment information found in the search criteria. Example:

Appointments

View Appointments: Nov 30, 2020 ☒ Week ☐ Month Load Requested Load All

Appointments Displayed for: All of your Appointments are Displayed drills

Type	Athlete	Start	End	AthleteID	Appointment	Coach
Drills	Marshon Lattimore	November 18, 2020 11:00 AM	November 18, 2020 12:00 PM	31	1	test
Film Study	Patrick Robinson	December 15, 2020 09:00 AM	December 15, 2020 10:00 AM	30	2	test

Upcoming Appointments: None View/Edit New Delete

Upcoming Appointment

1. If you have an appointment within the next hour, you will be notified at the bottom of the appointment section of the appointment. Example:

Upcoming Appointment: 11/30/2020 2:00:00 PM

Appointments by Date

1. To view your appointments by week, select the day of the week that you would like to view from the date picker in the appointment section, then select the week radio button, and click **Load Requested**. Example:

Appointments

View Appointments: Nov 17, 2020 ☒ Week ☐ Month **Load Requested** Load All

Appointments Displayed for: Monday, November 16, 2020 - Friday, November 20, 2020 Search For ...

Type	Athlete	Start	End	AthleteID	Appointment	Coach
Drills	Marshon Lattimore	November 18, 2020 11:00 AM	November 18, 2020 12:00 PM	31	1	test

Upcoming Appointment: 11/30/2020 2:00:00 PM View/Edit New Delete

2. To view your appointment by month, select the month that you would like to view appointments for from the date picker in the appointment section, then select the week radio button, and click **Load Requested**. Example:

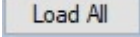
Appointments

View Appointments: December ☐ Week ☒ Month **Load Requested** Load All


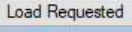

Appointments Displayed for: December - 2020 Search For ...

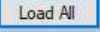
Type	Athlete	Start	End	AthleteID	Appointment	Coach
Film Study	Patrick Robinson	December 15, 2020 09:00 AM	December 15, 2020 10:00 AM	30	2	test
Film Study	CJ Gardner-Johnson	November 30, 2020 02:00 PM	November 30, 2020 03:00 PM	38	8	test

Upcoming Appointment: 11/30/2020 2:00:00 PM View/Edit New Delete

3. To view all of your appointments, click . Example:


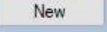

Appointments

View Appointments: December  ☐ Week ☒ Month  

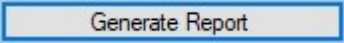


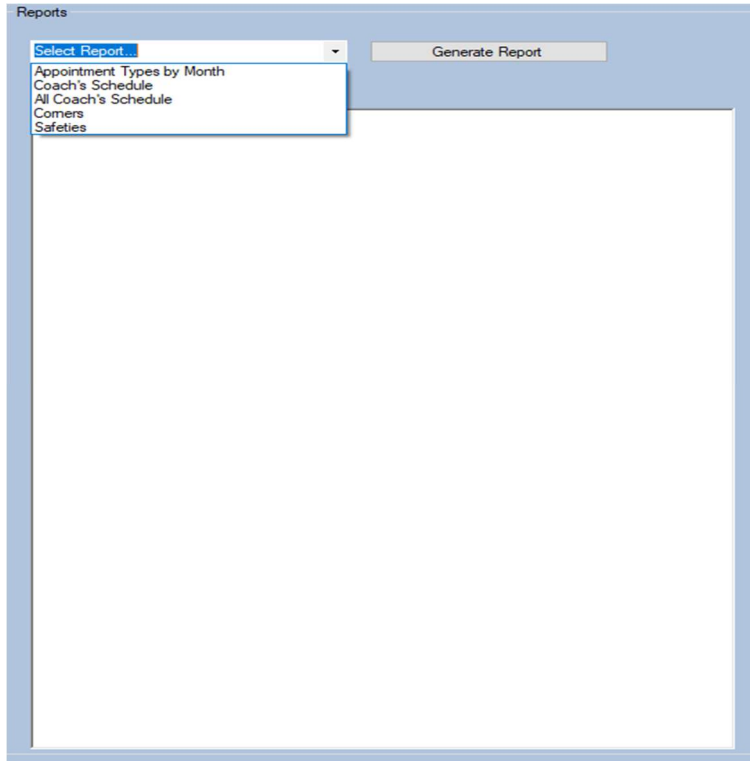
Appointments Displayed for: All of your Appointments are Displayed

Type	Athlete	Start	End	AthleteID	Appointment	Coach
Drills	Marshon Lattimore	November 18, 2020 11:00 AM	November 18, 2020 12:00 PM	31	1	test
Film Study	Patrick Robinson	December 15, 2020 09:00 AM	December 15, 2020 10:00 AM	30	2	test
Film Study	CJ Gardner-Johnson	November 30, 2020 02:00 PM	November 30, 2020 03:00 PM	38	8	test

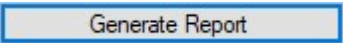
Upcoming Appointment: 11/30/2020 2:00:00 PM   

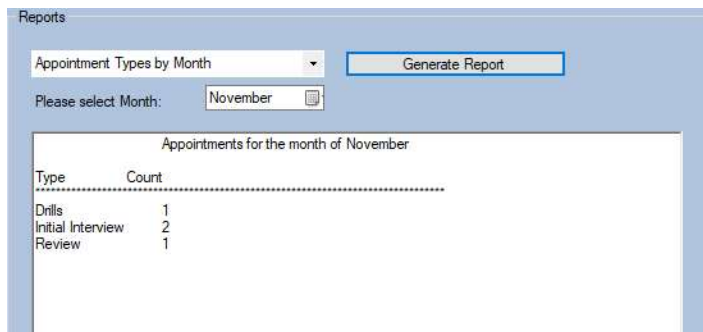
Reporting

1. The reporting for the application is currently available on screen in the reporting section. To view a specific report, select the report from the dropdown menu in this section and click . In the screenshot below is the current list of the reports available.



The screenshot shows a web interface titled "Reports". On the left, there is a dropdown menu labeled "Select Report:" with a list of options: "Appointment Types by Month", "Coach's Schedule", "All Coach's Schedule", "Comers", and "Safeties". To the right of the dropdown is a button labeled "Generate Report".

2. To view Appointment Types by month for all coaches, select Appointment type by Month, then choose the month, and click .



The screenshot shows the same web interface as before, but now the dropdown menu is set to "Appointment Types by Month". Below the dropdown, there is a label "Please select Month:" followed by a text box containing "November" and a calendar icon. To the right is the "Generate Report" button. Below these elements is a table titled "Appointments for the month of November".

Type	Count
Drills	1
Initial Interview	2
Review	1

3. To view a Coach's schedules, select Coach's Schedule, select the coach, and click

Generate Report

Reports

Coach's Schedule

Select Coach: test

All appointments for Coach test

Coach	Type	Start	End
test	Drills	11/18/2020 11:00:00 AM	11/18/2020 12:00:00 PM
test	Film Study	11/30/2020 2:00:00 PM	11/30/2020 3:00:00 PM
test	Film Study	12/15/2020 9:00:00 AM	12/15/2020 10:00:00 AM

4. To view all coach's schedule, select All Coach's Schedule and click

Generate Report

Reports

All Coach's Schedule

All appointments for all Coaches

Coach	Type	Start	End
Delvon	Consultation	12/16/2020 9:00:00 AM	12/16/2020 10:00:00 AM
Delvon	Review	11/20/2020 12:00:00 PM	11/20/2020 1:00:00 PM
Delvon	Initial Interview	11/20/2020 11:00:00 AM	11/20/2020 12:00:00 PM
Delvon	Initial Interview	11/24/2020 12:00:00 PM	11/24/2020 1:00:00 PM
test	Drills	11/18/2020 11:00:00 AM	11/18/2020 12:00:00 PM
test	Film Study	12/15/2020 9:00:00 AM	12/15/2020 10:00:00 AM
test	Film Study	11/30/2020 2:00:00 PM	11/30/2020 3:00:00 PM

5. To view all corners or safeties, select Corners or Safties and click

Generate Report

Reports

Corners

Defensive Backs by Position

DB	Discipline	Position
Patrick Robinson	Right	Cornor
Marshon Lattimore	Right	Cornor
Janoris Jenkins	Left	Cornor
Ken Crawley	Left	Cornor

Reports

Safeties

Defensive Backs by Position

DB	Discipline	Position
Marcus Williams	Free	Safety
Malcolm Jenkins	Strong	Safety
CJ Gardner-Johnson	Strong	Safety
PJ Williams	Strong	Safety