

FitDeck

Team Members:

- Shane Trentham
- Daphne Williams

Requirements List:

User Interface

1. Start Window
 - 1.1. When the user first opens the application, the signup/login window will appear.
 - 1.2. Once profile is created on the current device, the opening window will show their profile until they decide to logout.
2. User Profile
 - 2.1. Profile Creation
 - 2.1.1. When the user selects "Sign Up" from the opening window, a new window will open to allow the user to sign up for the app.
 - 2.1.2. The user will be prompted for:
 - 2.1.2.1. Username
 - 2.1.2.2. Email address
 - 2.1.2.3. Password.
 - 2.1.3. Once they've selected a unique combination, they will be asked to enter their other necessary credentials.
 - 2.1.3.1. Name
 - 2.1.3.2. Birth Date
 - 2.1.3.3. Weight
 - 2.1.3.4. Height
 - 2.1.4. Otherwise, they will receive an error message be prompted to reenter the information if:
 - 2.1.4.1. Their email is currently attached to a separate account.
 - 2.1.4.1.1. This will be checked by running through the data base to see if the email exists in it.
 - 2.1.4.2. Their email is in invalid format.
 - 2.1.4.2.1. If it doesn't follow the pattern "[email provider].com/.net/.edu etc.
 - 2.1.4.3. Or their username's already in use.

- 2.1.4.3.1. This will be checked by running through the database to see if the username exists.
 - 2.1.5. The information will be stored in the database once the attempt is successful.
 - 2.1.6. They will be logged into the application.
 - 2.1.7. They will be sent to the Profile Home Screen.
 - 2.2. Login
 - 2.2.1. Should they need to, the user will be able to login again from their device or from a separate device.
 - 2.2.2. When “Log in” is selected from the opening window, the Login window will appear.
 - 2.2.2.1. The user will be asked to enter their email/username and password.
 - 2.2.2.1.1. If the login is unsuccessful, an error message will display to the user.
 - 2.2.2.1.1.1. This will be checked by running through the database and checking for the username.
 - 2.2.2.1.1.2. Once the username is found it will check if the password entered matches the password stored.
 - 2.2.2.2. When they successfully login, the Profile Home Screen will open.
- 2.3. Profile Home Screen
 - 2.3.1. If the user has created a profile previously and remains logged in, this will be the opening screen.
 - 2.3.2. This window will display all of the user’s entered personal and health information.
 - 2.3.2.1. Username
 - 2.3.2.2. Name
 - 2.3.2.3. Age
 - 2.3.2.4. Height
 - 2.3.2.5. Weight
 - 2.3.3. A logout button will take them back to the Login window.
 - 2.3.4. Once the user creates workouts, all general information pertaining to them will also be displayed here.
 - 2.3.5. The user will be able to see their progress on this page.
 - 2.3.5.1. Their weekly stats will be featured as:
 - 2.3.5.1.1. A graph from Sunday-Saturday for each:
 - 2.3.5.1.1.1. Time spent working out.
 - 2.3.5.1.1.2. Calories burned.

2.3.5.1.2. A weekly average of will also be shown of the following:

2.3.5.1.2.1. Time spent working out.

2.3.5.1.2.2. Calories burned.

2.3.6. There will be a section below all of their information dedicated to the workout schedule.

2.3.6.1. From here, they will be allowed to:

2.3.6.1.1. Add a new routine.

2.3.6.1.1.1. They will be prompted to either create a new workout or select from predetermined workouts.

2.3.6.1.1.1.1. If they choose create, they will be sent to the Workout Creation page.

2.3.6.1.1.1.2. If they choose predetermined, they will be sent to the Predetermined Workout page.

2.3.6.1.2. Select a workout to begin.

2.3.6.1.2.1. A list of created workouts (if applicable) will be displayed based on the current day.

2.3.6.1.2.2. When the user wants to begin a workout, they will simply select which workout they decide to.

2.3.6.1.2.2.1. A new Begin Workout window will open.

2.3.6.1.2.3. If no workouts have been created, this section will remain empty.

2.3.6.1.3. Set rest day(s).

2.3.6.1.3.1. When the user chooses to set their rest days, the Rest Day window is opened.

2.3.6.1.4. Edit their created routines list.

2.3.6.1.4.1. There will be the option for the user to "Edit" the routine(s).

2.3.6.1.4.1.1. They will be sent to an Edit Workout window.

2.4. Workout Creation

2.4.1. The user will be shown a new window with 2 main categories to choose from which will expose the breakdown of each section.

2.4.1.1. Muscle Groups:

2.4.1.1.1. The user will be shown different muscle groups to begin selecting exercises which will further breakdown, if needed, based on the group.

2.4.1.1.1.1. Arms

2.4.1.1.1.1.1. Biceps

2.4.1.1.1.1.2. Triceps

2.4.1.1.1.1.3. Forearms

2.4.1.1.1.2. Shoulders

2.4.1.1.1.2.1. Deltoid

2.4.1.1.1.2.2. Traps

2.4.1.1.1.3. Legs

2.4.1.1.1.3.1. Quads

2.4.1.1.1.3.2. Hamstrings

2.4.1.1.1.3.3. Glutes

2.4.1.1.1.3.4. Calves

2.4.1.1.1.4. Chest

2.4.1.1.1.5. Back

2.4.1.1.1.5.1. Lats

2.4.1.1.1.5.2. Middle Back

2.4.1.1.1.5.3. Lower Back

2.4.1.1.1.6. Abdominals

2.4.1.1.2. For each of the choices, the user will be sent to an Exercise window containing a list of exercises of that muscle type.

2.4.1.2. Workout Types:

2.4.1.2.1. From here, they'll be able to pick which type of exercise they prefer based on the four main types of fitness.

2.4.1.2.1.1. Balance

2.4.1.2.1.2. Strength

2.4.1.2.1.3. Endurance

2.4.1.2.1.4. Flexibility

2.4.1.2.1.4.1. For each of the choices, the user will be sent to an Exercise window containing a list of exercises of that type.

2.4.2. Each exercise will have a text box accompanying it for the user to enter any necessary information to better their workout or better track their progress.

2.4.3. They will be able to continue choosing exercises and grouping them into supersets if they choose to do so.

- 2.4.3.1. By choosing “Create Superset” they will be able to combine 2 or more exercises in to a set
- 2.4.4. The user will continue this process until they are ready to save the workout.
 - 2.4.4.1. They will choose “Done” which will prompt the user to:
 - 2.4.4.1.1. Name the list.
 - 2.4.4.1.2. Choose a day they want to execute the workout every week via checkboxes.
 - 2.4.4.1.2.1. They will have to select from Sunday-Saturday or Any day.
 - 2.4.4.1.2.2. If any day of the week is a permanent rest day, the day will not be available to check.
 - 2.4.4.1.3. This will take the user back to the previous page (Profile Home Screen).
- 2.5. Predetermined Workout
 - 2.5.1. Should the user select this option, they will be prompted, just as with the Create Workout window, to choose either a muscle group or exercise type as follows:
 - 2.5.1.1. Muscle Groups:
 - 2.5.1.1.1. The user will be shown different muscle groups to begin selecting exercises which will further breakdown, if needed, based on the group.
 - 2.5.1.1.1.1. Arms
 - 2.5.1.1.1.1.1. Biceps
 - 2.5.1.1.1.1.2. Triceps
 - 2.5.1.1.1.1.3. Forearms
 - 2.5.1.1.1.2. Shoulders
 - 2.5.1.1.1.2.1. Deltoid
 - 2.5.1.1.1.2.2. Traps
 - 2.5.1.1.1.3. Legs
 - 2.5.1.1.1.3.1. Quads
 - 2.5.1.1.1.3.2. Hamstrings
 - 2.5.1.1.1.3.3. Glutes
 - 2.5.1.1.1.3.4. Calves
 - 2.5.1.1.1.4. Chest
 - 2.5.1.1.1.5. Back
 - 2.5.1.1.1.5.1. Lats
 - 2.5.1.1.1.5.2. Middle Back
 - 2.5.1.1.1.5.3. Lower Back
 - 2.5.1.1.1.6. Abdominals

2.5.1.1.2. For each of the choices, the user will be sent to a Routine window containing a list of workouts targeting that muscle type(s).

2.5.1.2. Workout Types:

2.5.1.2.1. From here, they'll be able to pick which type of exercise they prefer based on the four main types of workout.

2.5.1.2.1.1. Balance

2.5.1.2.1.2. Strength

2.5.1.2.1.3. Endurance

2.5.1.2.1.4. Flexibility

2.5.1.2.1.4.1. For each of the choices, the user will be sent to a Routine window containing a list of routines of that type.

2.5.2. When the routine is chosen, the user will be prompted to save this work out.

2.5.2.1. It will be stored in the database under the preset name.

2.5.2.2. The user will need to choose the day of the week, via checkbox, to save it under:

2.5.2.2.1. Sunday-Saturday.

2.5.2.2.1.1. If any day of the week is a permanent rest day, the day will not be available to check.

2.5.2.2.2. Any Day.

2.6. Exercises

2.6.1. Based on the selected muscle or type of workout, the window that opens will have a list of exercises pertaining to the muscle or type.

2.6.2. The user will select which exercise they would like and hit add.

2.6.3. This will bring them back to the Workout Creation window or the Edit Specific Workout window, depending on where they previously were.

2.7. Routines

2.7.1. Based on the muscle or type of workout, the window that opens will list general workout routines of that category.

2.7.2. The user will choose which workout best suits their needs and can add it to their schedule.

2.7.3. Once chosen, the user returns to the Predetermined Workout window.

2.8. Begin Workout

2.8.1. When this window opens, it will show the list of exercises in the selected workout.

2.8.2. A button to begin the workout will also be present.

2.8.2.1. When pressed, a stopwatch timer will start and remain counting up.

2.8.2.1.1. While counting up, there will also be two buttons to:

2.8.2.1.1.1. Pause the timer.

2.8.2.1.1.1.1. This button will be replaced by Resume while the timer is stopped.

2.8.2.1.1.1.1.1. When Resume is pressed, the button will read Pause again and the timer will resume counting up.

2.8.2.1.1.2. Stop the timer.

2.8.2.1.1.2.1. When the timer is stopped, it will signal the end of workout.

2.8.2.1.1.2.2. This will open the End of Workout window.

2.9. Rest Day

2.9.1. The window opened will be simplistic, with checkbox options to:

2.9.1.1. Make the current day a rest day.

2.9.1.2. Choose which day(s) of the week to be rest day(s).

2.9.1.2.1. Sunday-Saturday

2.9.1.2.1.1. If the day of the week has workouts assigned to it, it will not be available to check as a rest day.

2.9.2. The checkbox for current day will reset each day.

2.9.3. The checkboxes for each day of the week will be saved in the database.

2.9.3.1. To alter this, the user would need to do so manually.

2.10. Edit Workouts

2.10.1. This window will display all of the created workouts and will allow the user to edit or delete a routine by selecting the workout and pressing either edit or delete.

2.10.1.1. Edit

2.10.1.1.1. This will open and display the list of exercises in the selected workout in an Edit Specific Workout window.

2.10.1.2. Delete

2.10.1.2.1. This will prompt the user to select a routine to delete.

2.10.1.2.1.1. Once selected, a dialog box will appear to make sure the user would like to delete it.

2.10.1.2.1.1.1. The user will hit “Ok” to delete.

2.10.1.2.1.1.1.1. This workout will be removed from the user’s view and from the database.

2.10.1.2.1.1.1.2. The dialog box will close.

2.10.1.2.1.1.2. “Cancel” will cause the box to close and the routine will remain.

2.10.1.3. Once all editing/deleting is complete, hitting the done button will bring the user back to the main Profile Home Screen.

2.11. Edit Specific Workout

2.11.1. When a particular workout is chosen to be edited, all of the exercises will be displayed, grouped into their supersets if that applies.

2.11.2. Editing

2.11.2.1. Exercises can be added by selecting the add option

2.11.2.1.1. This will send them to the Add Exercise window, which is similar to the Workout Creation window without naming or saving the workout under a day of the week.

2.11.2.2. Each selected workout will be moved at the user’s discretion.

2.11.2.2.1. The user may create supersets at this point as well.

2.11.2.3. Each superset may also be moved around according to the user.

2.11.2.4. The scheduled day will be allowed to be edited by pressing the day in question and selecting which day(s) they would like to change.

2.11.3. Deleting

2.11.3.1. The user can tap delete on an exercise and will be prompted to delete the exercise.

2.11.3.1.1. A dialog box will appear to make sure the user would like to delete the exercise.

2.11.3.1.1.1. The user will hit “Ok” to delete it.

2.11.3.1.1.1.1. This exercise will be removed from the user’s view and the database.

2.11.3.1.1.1.2. The dialog box will close.

2.11.3.1.1.2. Hitting “Cancel” will cause the box to close and the exercise will remain.

2.11.3.2. The user can tap delete on a superset and will be prompted to delete the set.

2.11.3.2.1. A dialog box will appear to make sure the user would like to delete the superset.

2.11.3.2.1.1. The user will hit "Ok" to delete it.

2.11.3.2.1.1.1. This superset will be removed from the user's view and the database.

2.11.3.2.1.1.2. The dialog box will close.

2.11.3.3. Hitting "Cancel" will cause the box to close and the superset will remain.

2.11.4. Once all changes are made and ready to be saved, the user should press the save changes button.

2.11.4.1. This will remove all previous change(s) and save the current one(s) in the database.

2.11.4.2. This will bring the user back to the Edit Workouts window.

2.12. Add Exercise

2.12.1. The user will be shown a new window with 2 main categories to choose from which will expose the breakdown of each section.

2.12.1.1. Muscle Groups:

2.12.1.1.1. The user will be shown different muscle groups to begin selecting exercises which will further breakdown, if needed, based on the group.

2.12.1.1.1.1. Arms

2.12.1.1.1.1.1. Biceps

2.12.1.1.1.1.2. Triceps

2.12.1.1.1.1.3. Forearms

2.12.1.1.1.2. Shoulders

2.12.1.1.1.2.1. Deltoid

2.12.1.1.1.2.2. Traps

2.12.1.1.1.3. Legs

2.12.1.1.1.3.1. Quads

2.12.1.1.1.3.2. Hamstrings

2.12.1.1.1.3.3. Glutes

2.12.1.1.1.3.4. Calves

2.12.1.1.1.4. Chest

2.12.1.1.1.5. Back

2.12.1.1.1.5.1. Lats

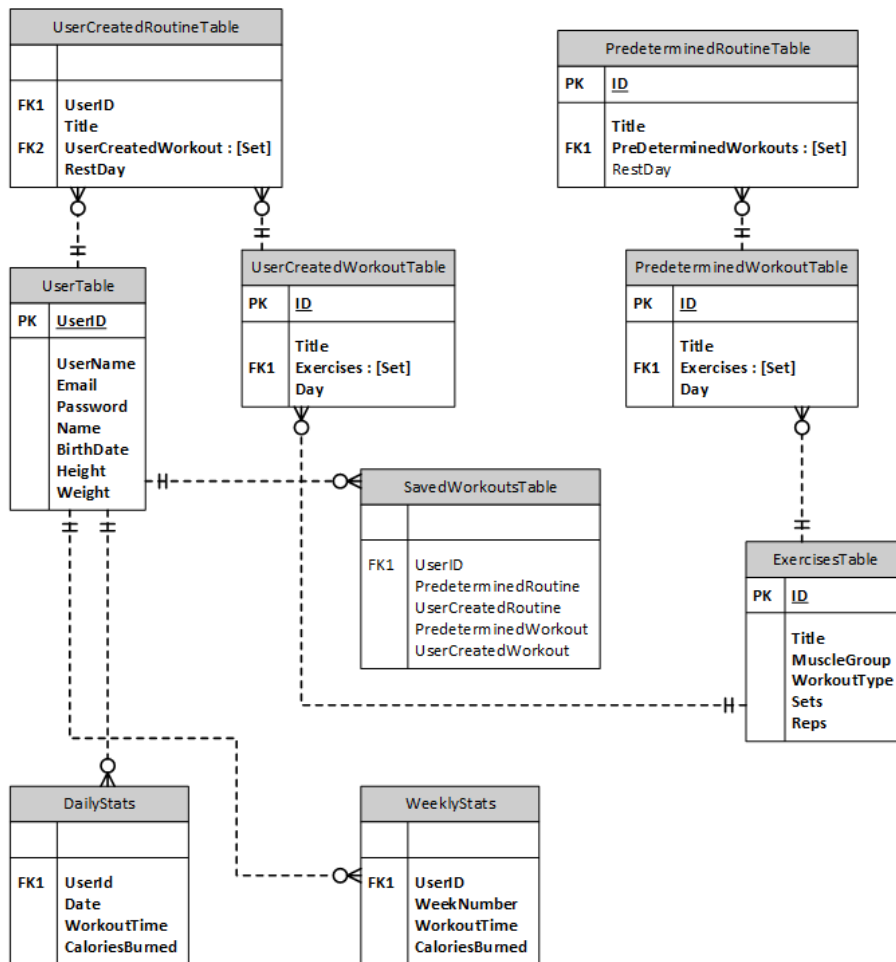
2.12.1.1.1.5.2. Middle Back

2.12.1.1.1.5.3. Lower Back

2.12.1.1.1.6. Abdominals

- 2.12.1.1.2. For each of the choices, the user will be sent to an Exercise window containing a list of exercises of that muscle type.
 - 2.12.1.2. Workout Types:
 - 2.12.1.2.1. They will be able to pick which type of exercise they prefer based on the four main types of fitness.
 - 2.12.1.2.1.1. Balance
 - 2.12.1.2.1.2. Strength
 - 2.12.1.2.1.3. Endurance
 - 2.12.1.2.1.4. Flexibility
 - 2.12.1.3. For each of the choices, the user will be sent to an Exercise window containing a list of exercises of that type.
 - 2.12.2. Hitting the done button will take the user back to the Edit Specific Workout page.
- 2.13. End of Workout
 - 2.13.1. The results of the finished workout will display to the user:
 - 2.13.1.1. Time spent.
 - 2.13.1.2. Calories burned.
 - 2.13.2. The results will be stored in the database.
 - 2.13.3. The results will be averaged in with previous results from the week (starting on Sunday).
 - 2.13.3.1. These results will be sent to the display on the home page.
 - 2.13.4. The user can press the button to exit this screen and will return to the Profile Home Screen.

Database:



1. Building Initial Database

- 1.1. .NET will populate the User table upon creating a new account
- 1.2. .NET will be activate when user is logging in (authentication)
- 1.3. We will add the initial workout plans when creating the database

2. Updating database

- 2.1. .NET will update the Saved Workouts Table when the user adds a new or predetermined Workout/Plan
- 2.2. .NET will update the Saved Workouts table when the user creates a new routine/exercise
- 2.3. .NET will add to the Exercises table when user creates a new exercise
- 2.4. .NET will add to the User Created Workout table when user creates new workout
- 2.5. NET will add to the User Created Routine table when user creates new routine
- 2.6. .NET will update daily/weekly stats upon completion of a workout

3. User Authentication

- 3.1. Sign in with Apple will be used since we are targeting iOS exclusively
- 3.2. Create a simplistic User Authentication

Design Description

The app will initially open up to a startup screen for the user that shows them only two options: to either login to an existing account or to create a new account. If the user is new and would like to create a profile, they will be taken to a new screen that will ask them for a unique combination of a username, an email address in the correct format, and a password that is a minimum of six characters long and contains at least one letter, one number, and one special character. They will then select to “sign up” for the account which, before moving on, will make a call to the database to ensure that there is no other account containing this username/email/password combo. If an account already uses either their username or email address, their email is in the incorrect format, or the password doesn’t meet the requirements, they will receive an error message corresponding to the specific error and will remain on the create account screen until all the conditions are met. Once the user is able to sign up, they will be sent to a new screen in order to finish creating their profile; here, they will enter their name, birthdate, weight and height which will finish creating a new profile and initialize the User object to be stored in the UserTable of the database.

They will now select “create” to create their profile and this will send them to their profile which will replace the initial startup screen as the screen that appears when the app is opened; should the user ever use the app on another device or log out on their current device, they will be shown the initial startup screen. This page houses all of the user’s information entered and is the hub for the user’s progress and workouts. At the top of the page, the user will be able to

view all of the health data: their name, username, email, height, and weight will be viewable. Below this, graphs will eventually display, showing the user's health statistics of their calories burned in each workout and time spent in each workout daily as well as a weekly average of both areas. Below all of this, the user's workout data will be visible; there will always be the option to add a workout to their list and once workouts are added, they will also be visible here and include the options to edit or delete a workout.

To add a workout to their list, the user will need to select the add button which will prompt them to either create a workout or to choose from a list of preselected workouts; either selection will take them to a new screen. If create a workout is selected, this new screen will display 2 columns, one containing a list of muscles groups and the other containing a list of exercise types. The user will be able to choose which muscle group or exercise type to add an exercise to their new workout queue; each Exercise object, which is a basic exercise, possess both a muscle group and a type and will appear accordingly. When a category is selected, the user will see a new screen that will list every exercise of the designated type; they can choose which one they would like and select the "add" button at the top of the screen or "back" if they would like to backtrack and choose a different muscle group or exercise type. Once the exercise has been added, it will return the user to the screen of workout categories to choose from and the user may add as many different types of exercises they would like. Additionally, they will be able to group the exercises into supersets should they choose to do so; they will need to select "create superset" and combine two or three exercises into one set. Another feature that will be available is a textbox that will accompany each exercise for the user's notes; if they want to enter their reps or set numbers or any other information about the specific exercise, they will

be able to do so here which will be stored within the individual Exercise object as a String. Once they are satisfied with their selections, they will hit the “done” button to return to the profile home screen; before returning to the home screen, however, they must name the routine and from a checkbox, select which day they would like this workout to appear on or choose “any day” if they would like to see this routine in the queue on the home screen every day. Once the routine is named and dated, a Workout object will be created and all of the basic information included will initialize it, the exercises will be added into a list of Exercise objects contained within the object, and it will save this routine under with the User’s ID in the database in the SavedWorkouts table; if any supersets are created, they will be added within the Workout object’s add-superset-with-two-exercises method or the add-superset-with-three-exercises method and will be stored the same way. They can continue to repeat this process as many times as desired, creating multiple individual Workout objects, and have a whole slew of routines at their disposal; they will hit “done” to leave the create workout page and return to the home screen.

If the user would prefer not to deal with creating their own routine for whatever reason, they would select to choose from a list of preselected workouts instead of choosing to create a workout in the previous sequence; the PredeterminedWorkout class from which the preselected workouts are stored is extended from the Workout class and thus will have all of the same features but the routines will be hard coded as seen in the class diagram. When this option is picked, the user will, again, be shown a screen consisting of the two columns, one of muscle groups and the other of exercise types; they will be able to select which ever type and see one or two workouts of that group (if there is time, I will produce more than just one or two

per category). Since these will be preselected, they will also have preset repetitions and set numbers as well as grouped supersets. When they have chosen a routine that suits their needs, they will select “done” and be prompted to only check which day, or any day, that this workout will be performed; the workouts of the preselected variety will be named ahead of time so the user will not need to do so. The PredeterminedWorkout object will be created and initialized and the database will save this routine as a PredeterminedRoutine in the SavedWorkouts table and the page will return to the previous category screen; the user may add as many pre-created workouts to their list of workouts and once they are finished, they can hit “done” and return to the home screen. It should also be noted that the user may select both preselected and manually created workouts to their queue, they will not have to choose one or the other exclusively.

The user will have the option to edit or delete workouts from their queue via this section of the home screen. The will need to select the button to edit their workouts which will bring them to a screen showing all of their saved workouts, both created and preselected. To delete an entire routine the user will need to choose the delete button and then proceed to choose which workout they would like to delete. They will then be shown a dialog box that will make sure the user would like to delete the workout, giving the user the two options of “OK” and “cancel;” choosing OK will proceed to delete the workout from the user’s view, by going into the Workouts object and use the delete workout method with the corresponding name and delete the workout from the list, and from the SavedWorkouts table, while choosing cancel will keep everything as is, both options will cause the box to close. If they would like to edit the specific workout, they would need to select edit from the home screen and then select the

specific workout they would like to edit; this will search through the user's Workouts object for the specified Workout object. They will be brought to a screen that shows all of the exercises within that routine and will be able to add or remove exercises from it, move the exercises around in the list, create supersets, and edit the day the workout will be performed. If they choose to add an exercise, they will be shown the screen with the two columns of muscle groups and routine types and will be able to choose the exercise they would like to add; this will add the exercise to the Workout object's list of Exercise objects using the add exercise method and will add it to the Exercise table. To remove an exercise, they will need to hit delete and choose which exercise to delete; this will remove the exercise from the Workout object's list of Exercise objects via the delete exercise method and from the list in the database under this workout. Selecting an exercise and moving it around at the user's discretion will change the order by way of the Workout object's exercise rearranging method; selecting create superset, again, with two exercises, by calling the Workout object's add-superset-with-two-exercises method, or three exercises, by calling the Workout object's add-superset-with-three-exercises method, will group them into a supersets and will be saved in the UserCreatedRoutine table. To edit the day, they will need to select the day already assigned to the routine which will bring up the checkbox with all of the days of the week or the "any day" options and assign the new day to it, while unchecking the previous box if desired; this will use the Workout object's setter for the day and will be updated in the Workout Table.

This section will also allow the user to add in rest days as needed or set permanent rest days. If the user chooses to take a rest day, they will be able to go select to add a rest day and a checkbox will appear with the options to make the current day a rest day or to choose which

day(s) of the week to label rest day(s) and thus creating a RestDay object; they will simply select to make the current day a rest day which will call the RestDay setter for the current day to be set to true. This day will remain a rest day for that day only, once the next day comes, the rest day selection resets and the setter will be called again and will be set to false. If the user wishes to make certain days permanently rest days, they will select the same option as before but instead of choosing to make the current day a rest day, they will select which ever day(s) they would like to be the rest day(s); this will call the RestDay's add rest day method which will add the day to a list of rest days. However, if any given day of the week already has workouts planned for them, the user will not be able to make that day a rest day and it will be greyed out in the selection menu; for example, if Tuesday already contains a workout, when choosing a rest day, Tuesday will be greyed out and will not be an option for the user to select. The user may go back into the same checkbox menu and deselect the permanent rest day which will remove this day of the week from being a permanent rest day. The rest day selections will be saved in the UserCreatedRoutine table and removed from it if the rest day is removed.

When the user decides they would like to begin a workout from their list of the day's routines, they will simply physically choose the routine. This will open the workout and display each exercise listed in that workout along with any note made by the user or preset set/repetitions. When the user is officially ready to begin working out, they will hit the "begin workout" button at the top of the page, this will prompt a stopwatch timer to start and will begin counting. While running up, there will be two buttons present with the time, a pause and a stop button; pressing pause will pause the timer and a resume button will replace the pause button and once the resume is pressed, pause will appear and the timer will count up once

Appendix I: Class Diagram



value. A sample message will look as follows (for receiving a row from the UserCreatedWorkouts table):

```
{  
  "UserId": "UserID",  
  "Title": "Title",  
  "Exercises": [],  
  "Day": "day"  
}
```