

Design

Inputs	Outputs
<ul style="list-style-type: none">• Number of Gym members, exercises, and weeks.• Necessary data into for each gym member.	<ul style="list-style-type: none">• High - Burning Calorie Exercises that exceed 2.5 calories per rep• Total number of calories burnt per exercise by each gym members• Name of the most ineffective exercise performed by each gym member• Weight loss alert

Variables

- nMembers - Integer
- nExercises - Integer
- nWeeks - Integer
- /Members() - /Member

UML

Member

- _MemName : String
- _Weight : Double
- _Age : Integer
- _Exercises ~~1..7~~ : Exercise
- _IneExercise : Integer
- _WeightLossAlert : String

<< Constructor >>

+ Member (NumberExercises : Integer)

<< Property >>

+ MemName () : String

+ Weight () : Double

+ Age () : Integer

+ Exercises () : Exercise

+ IneExercise () : Integer

+ WeightLossAlert () : String

<< Methods >>

+ CalcWeightLossRatio () : Double

Exercise

- _ExerName : String

- _CalBurnt : Double

- _Reps ~~1..7~~ : Integer

- _TotCalBurnt : Double

<< Constructor >>

+ Exercise (NumberWeeks : Integer)

<< Property >>

+ ExerName () : String

+ CalBurnt () : Double

+ Reps () : Integer

+ TotCalBurnt () : Double

<< Methods >>

+ CalcTotCals () : Void

Events	Actions
• btnSetup is clicked	<ul style="list-style-type: none"> • Take in inputs for nMembers, nExercises and nWeeks. • Set up dynamic arrays, the grid and label the grid.
• btnCaptVal is clicked	• Take in input of data for each gym member including data for each Exercise.
• btnCalcHighCalExer is clicked	• Count the number of High-Burning Calorie Exercise and display count in textbox.
• btnCalcTotCalBurnt is clicked	• Calculate, store and Display the total number of calories burnt for each exercise tracked by each member.
• btnIndIneExer is clicked	<ul style="list-style-type: none"> • Calculate^{and} store the index of the Most ineffective exercise • Display name of the most ineffective exercise for each member.
• btnWeightLossAlert is clicked	• Calculate, store and Display the weight loss alert for each gym member.

Interface frmGym

btnSetup

Setup

btnCaptVal

Capture
Values

btnHighCalEx

Total Calories
Burnt

btnIndIneExer

Most Ineffective
Exercise

btnIndIneExer

Weight Loss
Alert

btnCalcHighCalExer

High Calories
Exercises

grdGym

	Exer 1	Exer 2	Most Ineffective Exercise	Weight Loss Alert
M 1				
M 2				

btnCalcTotalCalBurnt

btnWeightLossAlert

txtHighCalExer

Algorithm

btnSetup

1. Take in inputs from user
2. $nMembers \leftarrow$ Prompt user for the number of gym members
3. $nExercises \leftarrow$ Prompt user for the number of exercises
4. $nWeeks \leftarrow$ Prompt user for the number of weeks
5. Setup grid and dynamic arrays.

btnCaptVal

1. Take in input of relevant data for each gym member and each exercise
2. Display relevant data in the grid

btnCalcHighCalExer

1. Count number of high-burning calorie exercises
 1. For each member and each exercise if calories burnt > 2.5 then
 $Counter \leftarrow Counter + 1$
2. Display $txtHighCalExer.Text \leftarrow Counter$

btnCalcTotCalBurnt

1. Calculate total number of calories burnt per exercise by each gym member
 1. $Total \leftarrow$ Sum of reps per exercise
 2. $TotCalBurnt \leftarrow Total \times \frac{Reps \times Calories}{7700 \times Weight}$
 3. Display $TotCalBurnt$ in the grid

btnIndIneExer

1. Calculate the index of the most ineffective

exercise performed

1. $Min \leftarrow$ Calories burnt by exercise 1.
2. If $Min >$ Calories burnt by next exercise
 $Min =$ that exercise
3. $MinIndex =$ index of that exercise
4. Display name of that exercise in the grid.

btn Weight Loss Alert

1. Calculate weight loss alert

1. $Ratio \leftarrow$ ~~Ratio~~ $TotalCalBurnt \div 1100 \div Weight$
2. Assess Ratio and Age to determine the Weight Loss Alert
3. Display Weight Loss in the grid for each gym member.

Test Data

Number of Members: 2

Number of Exercises: 2

Number of Weeks: 2

~~Input~~
Input

Name	M1				M2			
Weight	31.9				91.85			
Age	18				55 55			
Exercise Name	Pushup		Pullup		Sit Up		Jog	
Burnt Calories	3.2		32		32		2.0	
Number of Reps	10	10	20	20	20	20	10	10

~~Total Calories~~

Output

Total Calories	64	1286	1280	40
Ineffective Exercise	Pushup		Jog	
Weight Loss Alert	Try Harder		Stay Steady	
High Calories Exercises	3			