

LAB 3 REQUIREMENTS

Problem:

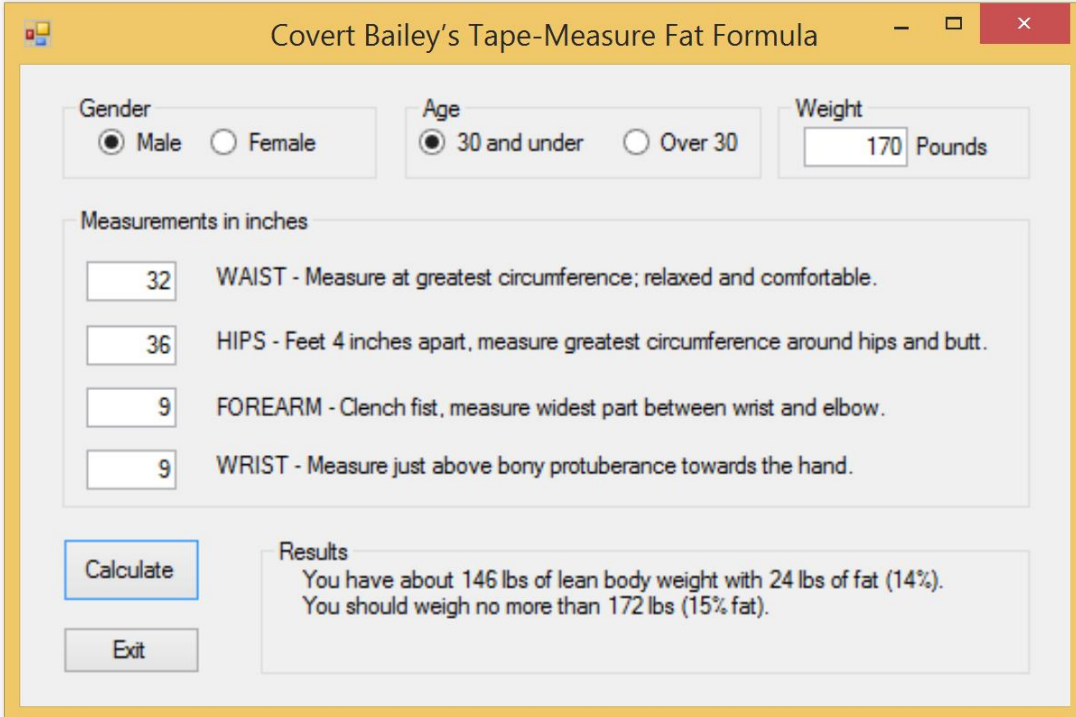
In this lab, you will be using Visual Studio to create an application where you will calculate a person's lean body weight, fat mass, percent body fat, and ideal weight. This lab uses radio buttons, text boxes, labels, buttons, and if-statements.

PART A

Here is a summary of the controls that you may need to complete this lab

- Radio buttons For Gender and Age, it would be a good idea to use a group box to place these buttons based on their category. Name the radio buttons as recommended in class use rdo, rad, or rd naming convention: rdoMale, rdoFemale, rdo30Under, rdo30Over ...etc
- A text box control for the weight (txtWeight)
- 4 text box controls for measurements
- 4 labels next to the measurement text boxes to define each box
- 2 buttons btnCalculate and btnExit.
- 1 output label to display the computation results

The measurement requirements are different for males and females. Two sample screens of a Visual C# .NET Ideal Weight Estimator program are shown below. The first one is for a male and the second one is for a female.



Covert Bailey's Tape-Measure Fat Formula

Gender: ☒ Male ☐ Female

Age: ☒ 30 and under ☐ Over 30

Weight: Pounds

Measurements in inches

<input type="text" value="32"/>	WAIST - Measure at greatest circumference; relaxed and comfortable.
<input type="text" value="36"/>	HIPS - Feet 4 inches apart, measure greatest circumference around hips and butt.
<input type="text" value="9"/>	FOREARM - Clench fist, measure widest part between wrist and elbow.
<input type="text" value="9"/>	WRIST - Measure just above bony protuberance towards the hand.

Calculate

Exit

Results

You have about 146 lbs of lean body weight with 24 lbs of fat (14%).
You should weigh no more than 172 lbs (15% fat).

Covert Bailey's Tape-Measure Fat Formula

Gender: ☐ Male ☒ Female

Age: ☒ 30 and under ☐ Over 30

Weight: Pounds

Measurements in inches:

HIPS - Feet 4 inches apart, measure greatest circumference around hips and butt.

THIGH - Stand with feet 12 inches apart, measure widest part of upper thigh.

CALF - Stand with weight on both feet, widest part midway between knee and ankle.

WRIST - Measure just above bony protuberance towards the hand.

Results
 You have about 131 lbs of lean body weight with 39 lbs of fat (23%).
 You should weigh no more than 168 lbs (22% fat).

Add a reset button, btnReset, to your form to clear the text boxes, reset the selections to 'Male' and '30 and under', and clear the label for the Results.

The Exit button should exit the application.

PART B:

Design the main form for the Ideal Weight Estimator. Use radio buttons for the user to select whether they are male or female and their age range. Use text boxes for the user to enter their weight in pounds and the measurements required.

The measurement requirements are different for **males and females**. Two sample screens of a Visual C# .NET Ideal Weight Estimator program are shown above. The first one is for a male and the second one is for a female.

Notice that when the user selects MALE or FEMALE, the appropriate text boxes and labels turn on/off to prompt the user for the proper information and the text boxes should all clear (be set to empty string). For males, the calculation is based on age, weight, waist, hips, forearm, and wrist measurements. For females, the calculation requires age, weight, hips, thigh, calf, and wrist measurements. Additionally, the measurements may include decimal values or whole numbers.

Once the user has finished entering the data, they can click the 'Calculate' button and the following information will be displayed (as shown in the previous examples):

You have about xxx lbs of lean body weight with xxx lbs of fat (xx %). You should weight no more than xxx lbs (15% fat for males, 22% fat for females).

You'll need to use number and percent formatting to format the numbers to according to the number of decimals and formats shown in the example.

Be creative; add your own style to the user interface. *Test and debug your program by taking the appropriate measurements for you or a friend in the lab. If you don't have a cloth tape, use strips of paper.*

STEPS FOR SUBMITTING YOUR LAB:

For each lab and following comments must be added at the beginning of your Visual C# code.

```
/* LAB #
```

```
'SEMESTER NAME
```

```
'STUDENT'S FIRST NAME, LAST NAME
```

```
'I fully understand the following statement.
```

```
'OU PLAGIARISM POLICY
```

```
'All members of the academic community at Oakland are expected to practice and uphold 'standards of academic integrity and honesty. An instructor is expected to inform and instruct 'students about the procedures and standards of research and documentation required of students 'in fulfilling course work. A student is expected to follow such instructions and be sure the rules 'and procedures are understood in order to avoid inadvertent misrepresentation of his/her work. 'Students must assume that individual (unaided) work on exams and lab reports and documentation 'of sources is expected unless the instructor specifically says that is not necessary.
```

```
'The following definitions are some examples of academic dishonesty:
```

- 'Plagiarizing from work of others. Plagiarism is using someone else's work or ideas without 'giving the other person credit; by doing this, a student is, in effect, claiming credit for 'someone else's thinking. Whether the student has read or heard the information he/she uses, 'the student must document the source of information. When dealing with written sources, 'a clear distinction would be made between quotations (which reproduce information from 'the source word-for-word within quotation marks) and paraphrases (which digest the 'source information and produce it in the student's own words). Both direct quotations and 'paraphrases must be documented. Just because a student rephrases, condenses or selects 'from another person's work, the ideas are still the other person's, and failure to give 'credit constitutes misrepresentation of the student's actual work and plagiarism of 'another's ideas. Naturally, buying a paper and handing it in as one's own work is 'plagiarism.
- 'Cheating on lab reports falsifying data or submitting data not based on student's own work.

```
*/
```

All labs will be submitted electronically, no paper copies will be given to Lab mentors.

Before submission:

- Please create a folder named as Lab3_FName_LName:
- **Place your solution file under this folder.**
- **Zip the folder** then upload through Moodle. You will not be able to upload unless you zip, 7zip or rar the folder.

GETTING READY FOR AN INTERVIEW with your Lab Mentor:

The interview is 40% of your lab grade. Make sure to be prepared for your mentor's questions about your program.

When it is your turn to explain your lab to your Lab mentor follow these steps **while your lab mentor is present**:

1. Log on to Moodle.
2. Find your submission link for this lab.
3. Download your Lab on your computer
4. Find your lab wherever you downloaded it to.
5. Make sure to Unzip, (or extract) your folder
6. Open the solution file to demo your lab.

You must follow these steps each time you are being graded for your lab. Your lab mentor must confirm that you downloaded what was submitted on Moodle. You should be graded on what was uploaded on Moodle, not on a local copy obtained from your C drive or external drives (i.e. memory sticks).

HOW WILL YOU BE GRADED BY YOUR LAB MENTOR AND WHAT IS THE GRADING CRITERIA?

1. The application works and was fully tested from what was downloaded **and** demonstrated from the copy uploaded to Moodle and not from a local copy or any external drive. (50 points)
2. Proper naming conventions were followed as explained in class (10 points)
3. Grade assigned based on oral examination of the students understanding of their solution and the overall quality of the solution (40 points)

GRADE: _____ out of 100