



Overview

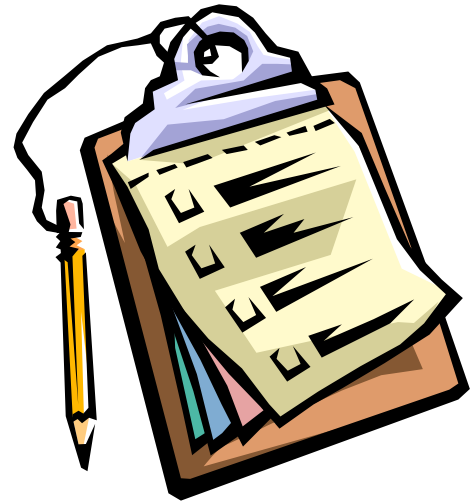
Dr. S. and other brilliant doctors, use tools that estimate how likely a patient will develop an illness. It compiles a number of contributing factors, uses statistical data for each, and then computes the likelihood it will happen.

Naturally, this is not a guarantee. But it is a very helpful guide.

For this lab, you are going to create a Risk Estimator program that will ask a series of yes/no questions and, then, print a percentage to the screen.

Each question is worth a predetermined number of points. If the user specifies the correct answer, it is added to their total score.

From this, you can compute a Risk Estimate from the answers.



$$\text{Risk Estimate} = \frac{\text{Points Earned}}{\text{Total Points}}$$

Sample Run

The following is a sample run of the program. ***This is not a real medical test.*** The user's input is printed in **blue**. The data outputted from your calculations is printed in **red**.

20 Year Heart Risk Estimator

Are you over 40 years old?

y

1 point

Are you a smoker?

n

Rest are 4 points

Do you have diabetes?

n

Do you have hypertension?

n

Do you drink?

n

1 / 17

Your risk estimate is 5%.

Have Fun!

Don't use medical questions above. Create your own risk estimator with your own questions and point values.

The following are some example categories.

- Risk of failing an exam
- Risk of barfing at a party
- Risk of getting into an auto accident
- Risk of getting "pwn'd" in a video game
- Risk of having explosive diarrhea
- etc...

Requirements

You must think of a solution on your own. The requirements are as follows:

1. **Prompt the user for each question**
2. **Use a different theme (and questions) than the example.**
Labs using the medical questions above will not receive credit.
3. **Read a 'y' or 'n' answer for each question.**
No credit will be given on the lab if numbers are not used.
4. **Print out the correct percentage.**
How do you get a value greater than zero? That's your challenge to solve.
5. **At least 5 questions.**

Reading Text

To read text from the keyboard, please read about the ScanCString subroutine in the CSC35 Library. You will need to create a buffer large enough to hold the input of 'y' or 'n'.

The example below creates a buffer (space) of two characters. Even for a single character, two characters are needed – the value and the null-character \0 .

```
.data

Answer:
    .space 2
```

Hints

- Like all labs, **build it in pieces**. First get a single If-Statement to work. Then, you can work on the more detailed ones.
- All labels **must** be unique. Choose your names well.
- Even though you are inputting single characters, you need to take into account the newline. Make your buffers 2 characters!
- Remember to use 8-bit registers to compare 'y' and 'n'.

Submitting Your Lab

Run Alpine by typing the following and, then, enter your username and password.

```
alpine
```

To submit your lab, send the source file (not a.out or the object file) to:

```
dcook@csus.edu
```

UNIX Commands

Editing

Action	Command	Notes
Edit File	<code>nano filename</code>	"Nano" is an easy to use text editor.
E-Mail	<code>alpine</code>	"Alpine" is text-based e-mail application. You will e-mail your assignments it.
Assemble File	<code>as -o objectfile asmfile</code>	Don't mix up the <i>objectfile</i> and <i>asmfile</i> fields. It will destroy your program!
Link File	<code>ld -o exefile objectfiles</code>	Link and create an executable file from one (or more) object files

Folder Navigation

Action	Command	Description
Change current folder	<code>cd foldername</code>	"Changes Directory"
Go to parent folder	<code>cd ..</code>	Think of it as the "back button".
Show current folder	<code>pwd</code>	Gives a file path
List files	<code>ls</code>	Lists the files in current directory.

File Organization

Action	Command	Description
Create folder	<code>mkdir foldername</code>	Folders are called directories in UNIX.
Copy file	<code>cp oldfile newfile</code>	Make a copy of an existing file
Move file	<code>mv filename foldername</code>	Moves a file to a destination folder
Rename file	<code>mv oldname newname</code>	Note: same command as "move".
Delete file	<code>rm filename</code>	Remove (delete) a file. There is no undo.