

LAB 3 (6 QUESTIONS)

Ex1: Write a program for users to key in a year. Print out it is a leap year or not

Sample run 1:

Enter a year: 1947

It is NOT a leap year.

Sample run 2:

Enter a year: 2012

It is a LEAP year

Ex2: Write a program for users to type in 03 **distinct** integers. Print out the greatest of the 3.

Sample run 1:

Enter 3 integers: 12 3 11

12 is the greatest.

Sample run 2:

Enter 3 integers: 121 442 199

442 is the greatest.



Ex3: Write a program for users to key in a case-insensitive character. Print out the corresponding day of a week using **switch**.

m for Monday, t for Tuesday, w for Wednesday, h for Thursday, f for Friday, s for Saturday, u for Sunday

Sample run 1:

Enter a character: m

It's Monday

Sample run 2:

Enter a character: H

It's Thursday

Sample run 3:

Enter a character: u

It's Sunday



Ex4: Given a person's weight in kilograms and height in meters, his/her BMI (Body Mass Index) is calculated based on this formula:

$$\text{BMI} = \text{Weight} / \text{Height}^2$$

The following table shows the body types according to a person's gender and BMI:

| Message | Female | Male |
|-------------------------|----------------|----------------|
| You are a little skinny | BMI <= 19 | BMI <= 20 |
| You are in good shape | 19 < BMI <= 24 | 20 < BMI <= 25 |
| You are a little big | BMI > 24 | BMI > 25 |

Write a program bmi.c to do the following:

Read the user's gender (0 for female or 1 for male), weight (double) and height (double).

Calculate the BMI and display a suitable message.

Your program must use switch

Sample run 1:

Enter your gender (0 for female, 1 for male): 0

Enter your weight (kg) and height (m): 62 1.6

You are a little big

Sample run 2:

Enter your gender (0 for female, 1 for male): 1

Enter your weight (kg) and height (m): 62 1.6

You are in good shape

Sample run 3:

Enter your gender (0 for female, 1 for male): 1

Enter your weight (kg) and height (m): 61.5 1.8

You are a little skinny

Ex5

In ordinal number, we use the ordinal suffix 'st', 'nd', and 'rd' for values that end with the digits 1, 2 and 3 respectively (1st, 2nd, 3rd)

From fourth onwards, we use ordinal suffix 'th' (4th, 5th...)

However, there are exceptions. For values that end with 11, 12 or 13, we should use the ordinal suffix "th". For example, 11th, 112th, 1413th.

Write a program Suffix.c to read in a positive integer and output the value with the correct ordinal suffix.

Sample run 1:

Enter value: 2

2nd

Sample run 2:

Enter value: 28

28th

Sample run 3:

Enter value: 1013

1013th



Ex6

Write a program AscendingDigits.c to read 3 positive integers and determine whether the hundreds digits in the 3 numbers are in ascending order. The output is "Yes" or "No".

For example, if the 3 integers are 1**2**34, 5**0**9 and 80**6**33, the result is "Yes", because the hundreds digits are 2, 5 and 6 respectively, and they are in ascending order.

Sample run 1:

Enter 3 positive integers: 1234 509 80633

The integers are 1234, 509 and 80633

Yes

Sample run 2:

Enter 3 positive integers: 1234 256 9805

The integers are 1234, 256 and 9805

No

Sample run 3:

Enter 3 positive integers: 12516 6344 95

The integers are 12516, 6344 and 95

No



S02p03

S02p06

