

# Decision Structure

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## Exercise:

1. Write a program that allows a user to type in an English day of the week (Sunday, Monday, etc.). The program should print the Spanish equivalent, if possible.

2. **Age Classifier**

Write a program that asks the user to enter a person's age. The program should display a message indicating whether the person is an infant, a child, a teenager, or an adult. Following are the guidelines:

- A. If the person is 1 year old or less, he or she is an infant.
- B. If the person is older than 1 year, but younger than 13 years, he or she is a child.
- C. If the person is at least 13 years old, but less than 20 years old, he or she is a teenager.
- D. If the person is at least 20 years old, he or she is an adult.

3. **Body Mass index**

Write a program that calculates and displays a person's body mass index (BMI). The BMI is often used to determine whether a person is overweight or underweight for his or her height. A person's BMI is calculated with the following formula:

$$BMI = \frac{weight}{height^2} \times 703$$

where weight is measured in pounds and height is measured in inches. The program should ask the user to enter his or her weight and height and then display the user's BMI.

The program should also display a message indicating whether the person has optimal weight, is underweight, or is overweight.

- A person's weight is considered to be optimal if his or her BMI is between 18.5 and 25.
- If the BMI is less than 18.5, the person is considered to be underweight.
- If the BMI value is greater than 25, the person is considered to be overweight.

4. **Shipping Charges**

The Fast Freight Shipping Company charges the following rates:

Weight of Package	Rate per Pound
2 pounds or less	\$1.50
Over 2 pounds but not more than 6 pounds	\$3.00
Over 6 pounds but not more than 10 pounds	\$4.00
Over 10 pounds	\$4.75

Write a program that asks the user to enter the weight of a package and then displays the shipping charges.

5. Write a program that requests five integer values from the user. It then prints the maximum and minimum values entered. If the user enters the values 3, 2, 5, 0, and 1, the program would indicate that 5 is the maximum and 0 is the minimum. Your program should handle ties

properly; for example, if the user enters 2, 4 2, 3 and 3, the program should report 2 as the minimum and 4 as maximum.

6. Write a program that requests five integer values from the user. It then prints one of two things: if any of the values entered are duplicates, it prints "DUPLICATES"; otherwise, it prints "ALL"
7. Write a program that takes numbers of seconds as input from user and calculate total number of hours, minutes and seconds from it. Lets say if user enters 12345 it should display output as:  
Hours: 3  
Minutes: 25  
Seconds: 45