

FUNCTIONS:

In computer programming a function is a section of code which accomplishes some task. It is “called” by the main program. Frequently the main program passes it values to be used. It can pass back results to the main program. In BlocklyProp this is done using variables. In BlocklyProp all variables are global.

Functions can be combined into a package called a library. A library contains a number of related functions which can be called by the program.

If you want to use a function which exists in a library, you must tell the program to include the library.

Steps to create a function:

1. Give the function a name
2. Write the code for the function
3. Call the function from the program, possibly passing it values and retrieving values it returns when it has accomplished its task.

Here is some practice with functions:

1. Write a complete program which contains a function. The purpose of the function is to blink the LED connected to P26 with a period of two seconds 50% duty cycle. Continue forever.
2. Write a complete program which contains a function. The purpose of the function is to blink the LED connected to P26 with a period of two seconds, 25% duty cycle. However, this time the LED should blink only 10 times and then stop.
3. Write complete program which contains a function. The purpose of the function is to blink the LED connected to pin 27 with a period of one second 50% duty cycle. Continue forever.
4. Write complete program which contains a function. The purpose of the function is to blink the LED connected to pin 27 with a period of one second, 25% duty cycle. This time the LED should blink only 5 times and then stop.
5. Write a single function which is capable of blinking an LED connected to pin 26 with ANY period for ANY number of blinks. That means that you must employ variables which will be set by the program before the function is called.
6. Write a complete program which employs the function you developed in #5 to blink the LED at P26 5 times with a period of 0.5 second and after that has finished blinks the same LED 8 times with a period of 1.0 second. You must call the function twice, each time passing it different values.
7. Write a program which contains a function to blink the led connected to any pin (determined by a variable) with any period (determined by another variable) and a 50% duty cycle. It continues forever.

8. Write a function to beep the piezo speaker 10 times with a 50% duty cycle each beep being 500 ms long and continuing forever. (You pick a frequency which you can hear.)

9. Write a complete program which uses a variable to tell the piezo speaker what frequency to use and then uses a function to beep (one long beep) for 3 seconds.

10. Write a complete program which uses a variable to tell the piezo speaker what frequency to use and another variable which tells the piezo speaker what duration (in ms) to use and then uses a function to beep for the required amount of time.

11. Write a complete program which uses a function to see if the button has been pushed and prints out a 1 if the button is pushed and a 0 if it is not pushed. It should repeat every 2 seconds.