Variables Activity 2

Scratch can be used to create programs that help users do boring calculations and tasks. Today we’re going to combine the ask and wait block with custom logic to make a series of simple programs.

In particular, notice that:

* We ask the user a question with the ask and wait block
* We use the user’s answer (stored in the answer variable) to create our response

Assignment:

A screenshot of a computer game

Description automatically generatedFirst, we’re going to experiment with the ask and wait block. Create a program exactly like the one seen below:

1. Before you run the program, what do you think will happen when the green flag is clicked?
2. Now run the program. Was your prediction correct? If it wasn’t, explain what was wrong.
3. Explain in 1-2 sentences why there must be a space after the “is” in “Answer is: ”.
4. Why do we need two variables for this program?
5. What would happen if we put this entire program in a forever loop?
6. What would happen if we misplaced the forever loop and only put it around the last three blocks?

Now that we understand the basics, we’re going to use ask and wait to create a series of small programs. Each time you complete a task, **move the program into the “backpack”**.

* 1. Write a program that asks the user for their name and then prints (says) “Hi NAME!”.
  2. Write a program that asks the user to input two numbers: the height and width of a rectangle and then prints the area of the rectangle. Then, if the area is smaller than 10, the program prints “Small rectangle!”. **DO NOT** draw a rectangle, this is just text.
  3. Write a program that asks the user for the radius of a circle and prints out the area of the circle. Then, if the area is bigger than 100, the program prints “Big circle!”.
  4. Write a program that asks the user for two numbers and then prints the larger one.
  5. Write a program that asks the user for a temperature in Fahrenheit and converts it to Celsius. If the temperature in Celsius is greater than 100, the program prints “boiling”. If the number is less than 0, the program prints “freezing”.
  6. Write a program that counts down from 10 and then prints “blast off” (hint: use a loop).
  7. Write a program that quickly says all the numbers between 101 and 200.
  8. Write a program that asks the user for a number and then counts downs from that number all the way to 0.
  9. Write a program the prints the largest of three numbers given by a user (hint: use the and block).
  10. Create a program that asks the user for 5 numbers then prints the sum of all the numbers (hint: if you use a loop, you only need to use ask and wait once).
  11. (Bonus): Write two small programs that create the following shapes:

A blue spiral with a white background

Description automatically generatedA blue spiral on a white background

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* 1. (Bonus): Write a program that prints the number of spaces in a sentence given by a user.