

day85 Arduino factors

Monday 4/22/24

Each person does their own work today using their own Arduino.

Write a program that finds the factors of the numbers from 7 through 97 and prints them to the monitor. When a number is prime (meaning it can only be divided by 1 and itself), turn on pin 13 and delay for that number of milliseconds, then turn the light off and delay for that many milliseconds. Also print "(prime)" at the end of the line. After printing the results for all of the numbers, delay for 5 seconds. Put a nice title in front as in my example "Factor Finder: ". Put a delay(5000); at the end. Here is a sample:

```
Factor Finder:

Factors of 7: 1 7 (prime)
Factors of 8: 1 2 4 8
Factors of 9: 1 3 9
Factors of 10: 1 2 5 10
...
... (lines removed to save space)
...
Factors of 96: 1 2 3 4 6 8 12 16 24 32 48 96
Factors of 97: 1 97 (prime)
```

How to start?

Well, if you're going to check all of the numbers from 7 to 97, make a for loop that goes through those numbers. Print the text "Factors of " with one print command, print the number with another, and then print a colon and space after that (all using Serial.print() calls, the ones without the "\n"). Next, inside the for loop, make another for loop that goes from 1 up to the current number. Check if each smaller number divides evenly into the current number you're checking (using %) and if it is, print it. Keep track of how many numbers you've printed. If you only find two factors (1 and the number you're checking) then the number is prime, otherwise, it's not.

We did a prime number checking program in Python which was similar but not quite the same (but you can review your code if it helps, it was Python day20.)

Call me over to check you off when you are done. Save the program to your Arduino folder. Make sure it is named "day85". Put your name in a comment at the top.