

day82 Arduino coding

Create a program with 5 parts:

Put your name and the date in a comment at the top of your program named "day82_coding" saved in the folder with your name that you created on the Desktop.

Label each part clearly in your code using comments, and print a blank line between each part. Neatness, spelling and accuracy count today.

Write the starter code into your sketch, then upload it and make sure it is working:

```
//Your name, day82 coding

void setup() {
  Serial.begin(9600);
}

void loop() {
  Serial.println("Hello!");
  delay(5000);
}
```

Part 1: Above the "delay(5000)" we put there at the start of this document, print "Part 1:" then write a for loop that blinks the light on the board from 10 milliseconds up to 150 milliseconds, increasing by 20 each time through the loop. Use a for loop that starts like this:

```
for(int i = 10; i<=150; i+=20)
```

You'll need a pinMode() call in the setup area, like you did on day 1, then you'll use digitalWrite calls with HIGH and LOW, plus delay calls to get this done. Review your code from the other day. If it's there, take out the `int x = 1;` call from the very top of your program, we're not using that today.

Print your i variable inside the for loop. Go look in the log and make sure you see those numbers going by fast while the light blinks.

Part 2: Still above the delay(5000), print a blank line then "Part 2:" and then print the numbers 24 to 0 in five columns with tabs between them using a for loop. You'll need to use the % operator, which means "modulo" to get the columns in the right places. You hopefully remember this from Python. If not, ask for help. You'll need to use a for loop and use "i--" to make the i variable get 1 unit smaller each loop and then use an if statement with the % operator to print a new line every five numbers.

Sample output:

```
Part 2:

24  23  22  21  20
19  18  17  16  15
14  13  12  11  10
9   8   7   6   5
4   3   2   1   0
```

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Part 3: Still above the delay(5000), print a blank line then "Part 3:" Make a for loop go from 1 to 10. Use the modulo operator (%) and an if/else statement to print out if each number is odd or even. Don't just print the requested text, use an if/else statement to print the correct things. You need an if statement and at least three print calls: one that prints the number, another that says the number is odd, and another that says even.

Sample output:

```
Part 3:
1 is odd.
2 is even.
3 is odd.
4 is even.
5 is odd.
6 is even.
7 is odd.
8 is even.
9 is odd.
10 is even.
```

Part 4:

Still above the delay(5000), write code that prints the following using a single print command:

```
Part 4:
A
  tiger
    is a
      kind
        of
          cat!
```

"tiger" has 1 tab in front of it, "is a" has two tabs, and so on. Use "\n" for new lines and "\t" for tabs.

Part 5:

Still above the delay(5000), print a blank line, then print the square root of your age using the sqrt() call. (look up sqrt() in the Arduino Reference). You will need two lines, one to say "The square root of 16 is: " and the other to print the square root of 16. Of course, that's only if you are 16 (put your actual age into the program.)

```
Part 5:
The square root of 59 is: 7.68
```

Then print another blank line. After this last print call you should have the delay(5000); line and a single }

Notes:

- If you cannot figure out how to do a part, leave a placeholder for it (i.e. print out "Part 2: Pending..." even if you can't figure out how to finish part 2). Also, ask for help! Remember, you can ask classmates for help, too, not just me.
- All of your parts 1 through 5 code should be inside the loop() function. That means, between the curly brackets that follow loop(). Type Control-T to format the code neatly; this helps make it easier to read as a human.
- When you are done, get me to come over and sign you off. Also turn in your program file on the Google Classroom.