

# Pre-Requisite Quiz: Embedded Systems Programming

---

Fill this out to the best of your ability. Everyone gets full credit even if your answers are incorrect.

1. Write a **for** loop in C that stores numbers from 1 to 10 in a dynamically allocated buffer.
2. What is the output of the following C code snippet?

```
int x = 10;
int y = 5;
printf("%d", x > y ? x : y);
```

3. What is the purpose of the volatile keyword in embedded C programming? Provide an example use case.
4. Given the following struct, what will be the size of SensorData on a system where int is 4 bytes and float is 4 bytes?

```
typedef struct {
    int sensorID;
    float temperature;
    float humidity;
} SensorData;
```

5. Write a union in C to store sensor data which can be either an int, a float, or a double.
6. Using the union you wrote in question 5, how does the C language determine which member to use when accessing the union?
7. On a scale of 1-5, how comfortable are you with linux?