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CPE522-01

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Final Exam – Problem 3

1. Explain in detail every line in “virtual int setDirection(GPIO\_DIRECTION);”. Explain what this function does.

Line by line:

1. Switch statement based on input
2. Case if input is “INPUT” – writes “in” to the “direction” part of the GPIO selected (“this” – i.e., when the function is called, it is writing as “this”.setDirection(INPUT))
3. Break statement – breaks out of case “INPUT”
4. Case if input is “OUTPUT” – writes “in” to the “direction” part of the GPIO selected (“this” – i.e., when the function is called, it is writing as “this”.setDirection(OUTPUT))
5. Break statement – breaks out of case “OUTPUT”
6. Returns an integer value of “-1”, indicates successful termination of function

This function takes GPIOX and sets its direction based on the input of the function. For example, if I wrote LED\_1.setDirection(“OUTPUT”), it would make the GPIO pin that I named “LED\_1” an output.

1. Explain in detail every line in “virtual GPIO\_VALUE getValue();”. Explain what this function does.

Line by line:

1. Instantiates a string named “input” that reads from the “value” part of the GPIO selected (“this” – i.e., when the function is called, it is writing as “this”.getValue())
2. If the value is “0” at the GPIO called, “LOW” is returned;
3. Otherwise, “HIGH” is returned.

This function takes GPIOX and reads its value. For example, if I wrote LED\_1.getValue(), the function would return “LOW” if LED\_1 was off and “HIGH” otherwise.