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CS 7

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<div align="center">Quiz Question 2</div>

1. Problem Definition

    a. The purpose of this program is for the user to input 10 integer values and then the program will tell the user how many clusters of even numbers there are among the 10 values.
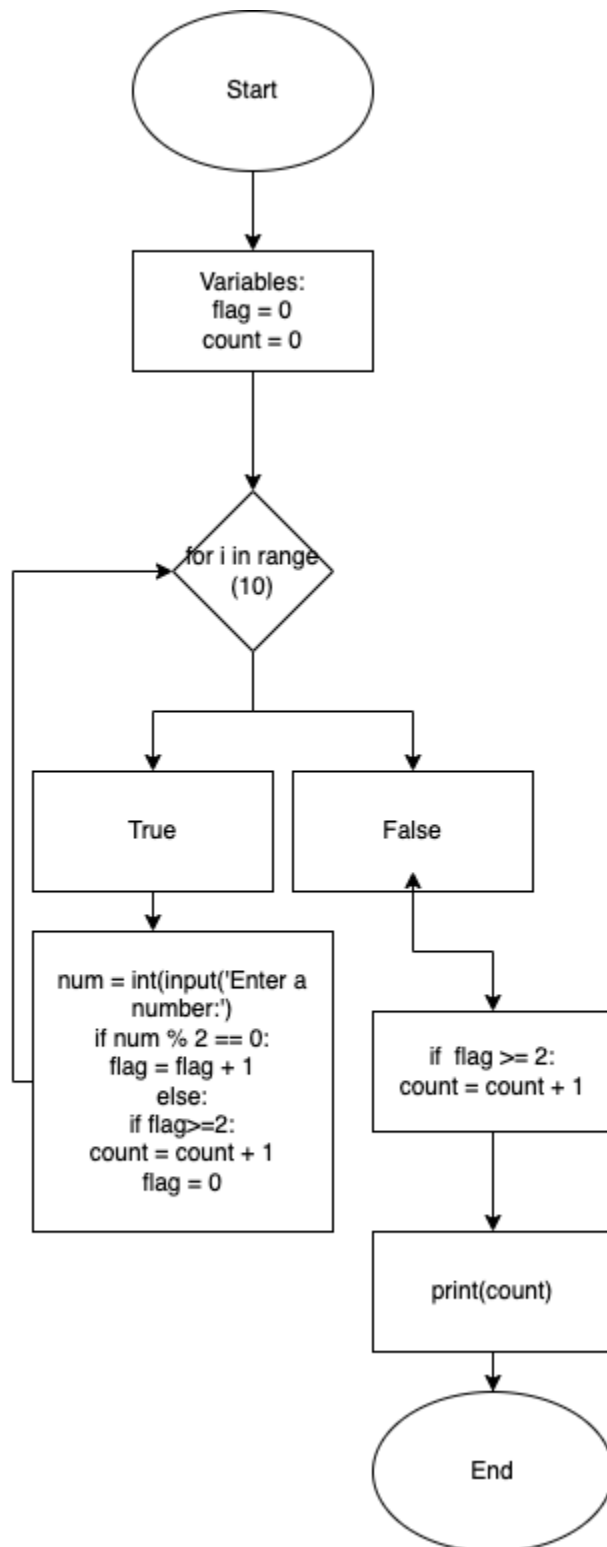
2. Input and Output

    a. **Input:** 10 integer values

    b. **Output:** The number of even number clusters.

3. Variables

    a. **count** = the number of even clusters in the inputs

    b. **flag** = the number of even numbers that are next to each other. This value is resetted every time the program runs across an odd number.

4. Flow Chart

```
                    ┌─────────────┐
                    │    Start    │
                    └─────────────┘
                           │
                           ▼
                    ┌─────────────┐
                    │  Variables: │
                    │  flag = 0   │
                    │  count = 0  │
                    └─────────────┘
                           │
                           ▼
                      ◇ for i in range
                        (10) ◇
                           │
              ┌────────────┴────────────┐
              ▼                         ▼
         ┌─────────┐              ┌──────────┐
         │  True   │              │  False   │
         └─────────┘              └──────────┘
              │                         │
              ▼                         ▼
   ┌────────────────────┐      ┌──────────────────┐
   │ num = int(input('Enter a  │ if flag >= 2:     │
   │       number:')    │      │ count = count + 1 │
   │ if num % 2 == 0:   │      └──────────────────┘
   │   flag = flag + 1  │               │
   │ else:              │               ▼
   │   if flag>=2:      │      ┌──────────────────┐
   │   count = count + 1│      │   print(count)   │
   │   flag = 0         │      └──────────────────┘
   └────────────────────┘               │
                                         ▼
                                   ┌───────────┐
                                   │    End    │
                                   └───────────┘
```

5. Lessons and Errors

    a. **Error:** If there was a cluster for the last couple of inputs, the program would not register it because my program was waiting for an odd number at the end of the program to register. However there wasn't any.

        i. To fix this problem I added another if statement outside of the for loop to check for clusters at the end if they had been flagged before but not counted as a cluster.

    b. **Lessons:**

        i. I learned how to use variables to temporarily store a specific amount of data with a for loop.