Graph 2

DFS & Cycles

Requirements

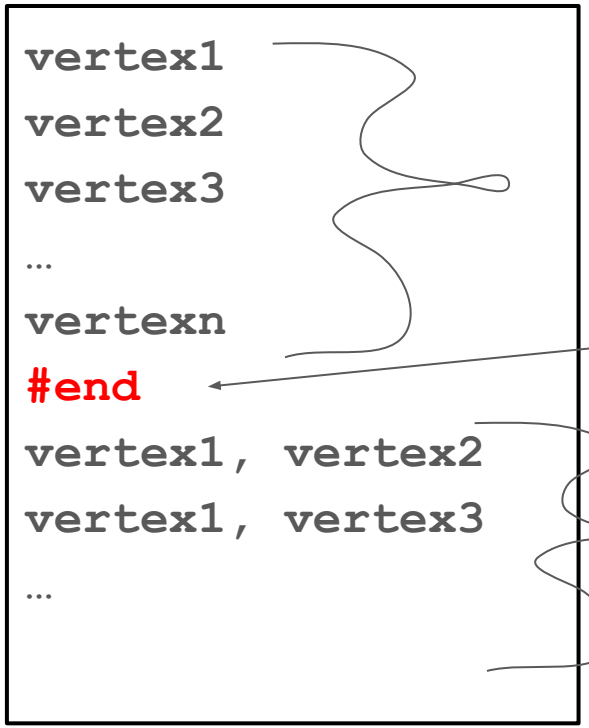
Create file in python with a **comment** containing the academic honesty pledge as shown below. Add another, separate comment to the file containing your name

- Write a python program that creates a graph using a textarea and the formatting described in a later slide
- Your code will print out "cyclic" or "acyclic".
- Your code should generate both the form (with a textbox) and the output.

```
# I honor Parkland's core values by affirming that I have
# followed all academic integrity guidelines for this work.

# your name
```

Input format: This is a directed graph



the names of the vertices, one per line. NO EMBEDDED SPACES!!!

Ignore duplicates

Keyword that shows the end of the vertices

the edges in the graph. Format is:
`vertex [comma] [space] vertex [newline]`

When you're out of data, there are no more edges.
Ignore invalid edges

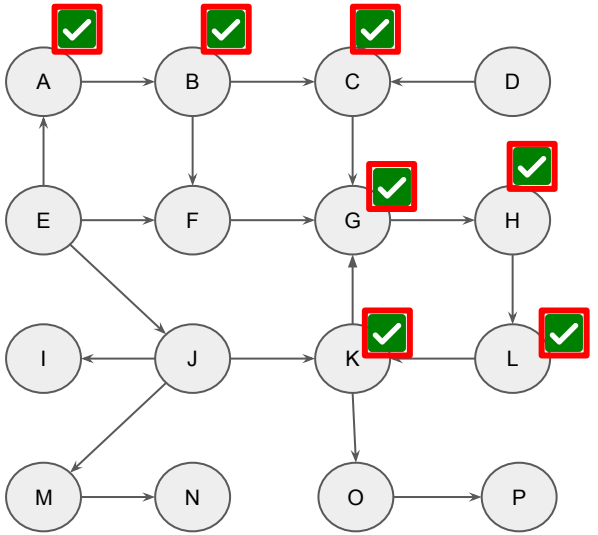
Property: Cyclic or acyclic

Modify the DFS code from the book to determine is the graph entered is cyclic or acyclic. **This is problem C-14.43.**

(Once you find a cycle you can stop the DFS)

Determining back edges & cycles

```
DFS(G, u):
    mark u as being worked on
    for v outgoing edge e = (u, v): of u
        if v is being worked on there's a cycle, exit
        if v hasn't been visited:
            DFS(G, v)
    mark u as visited
```




```
A working on
B working on
C working on
G working on
H working on
L working on
K working on: examine (K, G) … G is being worked on,
that means its a back edge and there's a cycle.
```

Turn in

The code you wrote or modified.

A link to the webpage.