This quiz has 3 questions, for a total of 30 points.

1. **10 points** Describe 1) what the git clone operation accomplishes, 2) what the git add/commit/push sequence of operations accomplish (or “sync” in the Windows interface for git), and 3) the purpose of version control systems.

   **Solution:**

   1. The git clone operation copies a repository from github to the local computer.
   2. The git add/commit/push sequence (or sync) uploads changes from the local computer to github.
   3. A version control system helps teams of software developers to manage their source code, detecting concurrent edits to the same file and providing access to prior versions of the software.

2. **10 points** What is the output of the following Python program?

   ```python
   A = [3, 1, 4, 1, 5]
   A.append((1, 2))
   print(A)
   print(2 in A)
   print(3 in A)
   print(A)
   ```

   **Solution:**

   ```
   [3, 1, 4, 1, 5, (1, 2)]
   False
   True
   [3, 5, 4, 1, 5, (1, 2)]
   ```

3. **10 points** What code needs to be filled into the blanks labeled (a), (b), and (c) to finish this algorithm that rotates the elements in a non-empty array by one to the right?

   ```python
   def rotate_1_ripple(A):
       if len(A) <= 1:
           return
       else:
           ripple = A[0]
           for i in range(1, _a_):
               tmp = _b_
               A[i] = ripple
               ripple = tmp
           A[0] = _c_
   ```
Solution:
- a) len(A)
- b) A[1]
- c) ripple