Pdb

You are a software developer working on a project that involves analyzing student grades. You have received a piece of code from a colleague that calculates the average grade for each student and determines their pass/fail status. However, the code seems to have some bugs, and you need to use pdb to debug and fix the issues.

Steps

1. Use the provided code in the `pdb.py` file:

2. Run the script and observe the output. You should notice that the average grades and pass/fail statuses are not calculated correctly.

3. Use pdb to debug the code by following these steps:

    - Add the following line at the beginning of the `analyze_grades` function (line 15):

      ```
      import pdb; pdb.set_trace()
      ```

    - Run the script again. It will pause at the beginning of the `analyze_grades` function, and you will enter the pdb debugger.

4. In the pdb debugger, follow these steps:
    - Use the `next` command to execute the current line and move to the next line.
    - Use the `step` command to step into the `calculate_average` function.
    - Inside the `calculate_average` function, use the `print` command to inspect the values of `total` and `len(grades)` before the average calculation.
    - Use the `next` command to move to the next line and observe how the value of `total` changes.
    - Use the `next` command to move to the next line and observe the calculated average value.
    - Use the `continue` command to continue execution until the next breakpoint or the end of the program.
5. Based on your observations, identify the bugs in the code and make the necessary fixes.
6. After fixing the bugs, remove the `import pdb; pdb.set_trace()` line and run the script again to verify that the grades are calculated correctly.

To submit

Submit your debugged and functional code in a python script named `pdb.py` file along with a brief explanation of the bugs you identified and how you fixed them.