**Getting started with TDD (test driven development)**

1. **TDD** 
   1. A style of writing software that relies on short iterations that start with the writing of automated tests
   2. It has become the most dominant practice among most professional software development teams and has saved enormous amounts of time and money in the software development lifecycle
   3. Diagram

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2. **Why TDD?** 
   1. Proves your code works
   2. Allows for improving a design without breaking it
   3. More fun
   4. Demonstrates progress at a granular level
   5. Serves as example code
   6. Forces you to plan first
   7. Reduces to cost of bugs
   8. Provides low level regression test (ensures updates don’t break the system)
   9. Eliminates coders block, makes for better design, faster
3. **How will I know when I have solved the problem?** 
   1. **Types of tests** 
      1. *Unit tests*
         1. Do each of the little pieces of code work at a low level?
      2. *Integration test*
         1. Do various parts of an app work in harmony?
      3. *Acceptance tests*
         1. Does the app meet the requirement of the client?
      4. The whole team should share understanding
4. **What should you test?** 
   1. Only test the code you write
   2. Do not test code that comes from an external library or 3rd party package
5. **Popular testing frameworks/libraries** 
   1. Table

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6. **Example test** 
   1. A screenshot of a computer

      Description automatically generated with medium confidence
   2. **Assert** 
      1. “I believe it to be true”
7. **Coverage**
   1. The percentage of lines of code in your project tat are covered by tests
   2. Target is 90%

Traceback (most recent call last): File "C:\Users\jz201\PycharmProjects\pythonProject3\main.py", line 6, in <module> plt.scatter(x\_values, y\_values) File "C:\Users\jz201\PycharmProjects\pythonProject3\venv\lib\site-packages\matplotlib\pyplot.py", line 2807, in scatter \_\_ret = gca().scatter( File "C:\Users\jz201\PycharmProjects\pythonProject3\venv\lib\site-packages\matplotlib\\_\_init\_\_.py", line 1412, in inner return func(ax, \*map(sanitize\_sequence, args), \*\*kwargs) File "C:\Users\jz201\PycharmProjects\pythonProject3\venv\lib\site-packages\matplotlib\axes\\_axes.py", line 4369, in scatter raise ValueError("x and y must be the same size") ValueError: x and y must be the same size