```
<testsuites>
 <testsuite name="pytest" errors="2" failures="3" skipped="0" tests="9" time="0.831" timestamp="2024-12-31T20:00:49.038949+08:00"</pre>
 hostname="LAPTOP-000UPES4">
   <testcase classname="test authentication" name="test account lockout" file="test authentication.py" line="40" time="0.021">
    <system-out>------ WARNING root;authentication controller.py:66
    Invalid username or password. You have 2 attempt(s) remaining. Invalid username or password. You have 1 attempt(s) remaining. Account
    locked due to multiple failed attempts. Please try again after 5 minutes. Account is locked. Please try again after 4 minute(s) and 59
    second(s). User 'lockuser' account has been unlocked. </system-out>
    <system-err>------ </system-err>
   </testcase>
   <testcase classname="test authentication" name="test invalid login" file="test authentication.py" line="36" time="0.017">
    Out ------ Invalid username or password. </system-out>
    </testcase>
   <testcase classname="test authentication" name="test valid login" file="test authentication.py" line="23" time="0.005">
    <failure message="OSError: pytest: reading from stdin while output is captured! Consider using `-s`.">auth controller =
    <controllers.authentication controller.AuthenticationController object at 0x000001A126D869D0> def test valid login(auth controller):
    user service = auth controller.user service username = 'testuser' password plain = 'Test@1234' # Ensure the test user exists if not
    user service.get user by username(username): # Encrypt the password encrypted password = encrypt password(password plain)
    user service.add user(Customer(username, encrypted password, 'COMPANY123')) > user = auth controller.login(username, password plain)
    test_authentication.py:33: _ _ _ _ _ _ controllers\authentication_controller.py:51: in login if self.perform_mfa(user): controllers\authentication_controller.py:80: in
    perform mfa input code = input("Enter the MFA code sent to your registered device: ") _ _ _ _ _ _ _
    ______ self = <_pytest.capture.DontReadFromInput object at 0x000001A125149340> size = -1 def read(self, size: int =
    -1) -> str: > raise OSError( "pytest: reading from stdin while output is captured! Consider using `-s`." ) E OSError: pytest: reading from
    stdin while output is captured! Consider using `-s`. C:\Program Files (x86)\Microsoft Visual Studio\Shared\Python39 64\lib\site-
    packages\ pytest\capture.py:209: OSError</failure>
    Out ----- Enter the MFA code sent to your registered device: </system-out>
    </testcase>
   <testcase classname="test order" name="test list customer orders" file="test order.py" line="53" time="0.016">
    <error message="failed on setup with "py.error.EEXIST: [File exists]: mkdir('C:\\Users\\Helen Siu\\AppData\\Local\\Temp\\pytest-of-Helen</pre>
    Siu\pytest-5\test list customer orders0\\data',)"">E FileExistsError: [WinError 183] Cannot create a file when that file already exists:
    'C:\\Users\\Helen Siu\\AppData\\Local\\Temp\\pytest-of-Helen Siu\\pytest-5\\test list customer orders0\\data' All traceback entries are
    hidden. Pass `--full-trace` to see hidden and internal frames. During handling of the above exception, another exception occurred: tmpdir
    = local('C:\\Users\\Helen Siu\\AppData\\Local\\Temp\\pytest-of-Helen Siu\\pytest-5\\test list customer orders0') @pytest.fixture def
    product_service(tmpdir): > data_dir = tmpdir.mkdir("data") test_order.py:27: ______ self = local('C:\\Users\\Helen Siu\\AppData\\Local\\Temp\\pytest-of-Helen Siu\\pytest-5\\test_list_customer_orders0')
    args = ('data',) p = local('C:\\Users\\Helen Siu\\AppData\\Local\\Temp\\pytest-of-Helen Siu\\pytest-5\\test list customer orders0\\data')
    def mkdir(self, *args): """Create & return the directory joined with args.""" p = self.join(*args) > error.checked call(os.mkdir,
    os.fspath(p)) E py.error.EEXIST: [File exists]: mkdir('C:\\Users\\Helen Siu\\AppData\\Local\\Temp\\pytest-of-Helen Siu\\pytest-
```

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5\\test list customer orders0\\data',) C:\Program Files (x86)\Microsoft Visual Studio\Shared\Python39 64\lib\site-
 packages\ pytest\ py\path.py:889: EEXIST</error>
 Out ----- </system-out>
 </testcase>
<testcase classname="test order" name="test place order" file="test order.py" line="38" time="0.009">
 <error message="failed on setup with "pv.error.EEXIST: [File exists]: mkdir('C:\\Users\\Helen Siu\\AppData\\Local\\Temp\\pytest-of-Helen</pre>
 Siu\pytest-5\test place order0\\data',)"">E FileExistsError: [WinError 183] Cannot create a file when that file already exists:
 'C:\\Users\\Helen Siu\\AppData\\Local\\Temp\\pytest-of-Helen Siu\\pytest-5\\test place order0\\data' All traceback entries are hidden.
 Pass `--full-trace` to see hidden and internal frames. During handling of the above exception, another exception occurred: tmpdir =
 local('C:\\Users\\Helen Siu\\AppData\\Local\\Temp\\pytest-of-Helen Siu\\pytest-5\\test place order0') @pytest.fixture def
 product service(tmpdir): > data dir = tmpdir.mkdir("data") test_order.py:27: _ _ _ _ _ _
   _____ self = local('C:\\Users\\Helen Siu\\AppData\\Local\\Temp\\pytest-of-Helen Siu\\pytest-5\\test place order0') args =
 ('data',) p = local('C:\\Users\\Helen Siu\\AppData\\Local\\Temp\\pytest-of-Helen Siu\\pytest-5\\test place order0\\data') def mkdir(self,
 *args): """Create & return the directory joined with args.""" p = self.join(*args) > error.checked call(os.mkdir, os.fspath(p)) E
 py.error.EEXIST: [File exists]: mkdir('C:\\Users\\Helen Siu\\AppData\\Local\\Temp\\pytest-of-Helen Siu\\pytest-
 5\\test place order0\\data',) C:\Program Files (x86)\Microsoft Visual Studio\Shared\Python39 64\lib\site-packages\ pytest\ py\path.py:889:
 EEXIST</error>
 Out ----- </system-out>
 <svstem-err>------ 
</testcase>
<testcase classname="test product" name="test add product" file="test product.py" line="24" time="0.008">
 <failure message="assert False is True">product service = <services.product service.ProductService object at 0x000001A126D86CA0> def
 test add product(product service): product = Product('1', "Shampoo", "Hair Care", 9.99, 100) added = product service.add product(product)
 > assert added is True E assert False is True test product.py:28: AssertionError</failure>
 <system-out>------- Captured Log ------ Captured
 Out ----- Product with ID '1' already exists. </system-out>
 <system-err>------ 
</testcase>
<testcase classname="test product" name="test delete product" file="test product.py" line="37" time="0.011">
 Out ----- </system-out>
 <system-err>------ <system-err>------ 
</testcase>
<testcase classname="test product" name="test list products" file="test product.py" line="43" time="0.007">
 <failure message="assert 4 == 1 + where 4 = len([<models.product.Product object at 0x000001A127A97D90>, <models.product.Product object at</pre>
 0x000001A127A97F10>, <models.product.Product object at 0x000001A127AABB80>, <models.product.Product object at
 0x0000001A127AABEB0>])">product service = <services.product service.ProductService object at 0x0000001A127A97490> def
 test list products(product service): product service.add product(Product('4', "Hair Spray", "Styling", 6.99, 80)) products =
 product service.products > assert len(products) == 1 E assert 4 == 1 E + where 4 = len([<models.product.Product object at
 0x000001A127A97D90>, <models.product.Product object at 0x000001A127A97F10>, <models.product.Product object at 0x000001A127AABB80>,
 <models.product.Product object at 0x000001A127AABEB0>]) test product.py:47: AssertionError</failure>
 Out ----- Product with ID '4' already exists. </system-out>
 <system-err>------
```