```
<testsuites>
 <testsuite name="pytest" errors="0" failures="1" skipped="0" tests="10" time="7.124" timestamp="2025-01-07T18:37:33.961815+08:00"</pre>
 hostname="LAPTOP-000UPES4">
  <testcase classname="test authentication.TestAuthentication" name="test account lockout" file="test authentication.py" line="54"</pre>
  time="2,997">
    <system-out>----- WARNING root:authentication controller.py:64
    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). </system-out>
    </testcase>
  <testcase classname="test authentication.TestAuthentication" name="test invalid login" file="test authentication.py" line="47" time="0.016">
    Out ----- Invalid username or password. </system-out>
    <system-err>------ 
  </testcase>
   <testcase classname="test authentication.TestAuthentication" name="test valid login" file="test authentication.py" line="27" time="1.189">
    <system-out>------ Captured Log ------ Captured
    Out ----- </system-out>
    <system-err>------ 
  </testcase>
   <testcase classname="test linter" name="test flake8" file="test linter.py" line="3" time="2.061">
    <failure message="Failed: Flake8 lint errors: .\IMS.py:1:1: W391 blank line at end of file .\api\company validation api.py:6:68: W291</pre>
    trailing whitespace .\api\company validation api.py:12:1: E302 expected 2 blank lines, found 1 .\api\company validation api.py:20:1: E305
    expected 2 blank lines after class or function definition, found 1 .\api\company validation api.py:22:1: W391 blank line at end of file
    .\controllers\authentication controller.py:5:14: W291 trailing whitespace .\controllers\authentication controller.py:6:1: F401
    'models.user.Admin' imported but unused .\controllers\authentication controller.py:8:1: E302 expected 2 blank lines, found 1
    .\controllers\authentication controller.py:15:80: E501 line too long (96 > 79 characters)
    .\controllers\authentication controller.py:16:80: E501 line too long (85 > 79 characters)
    .\controllers\authentication controller.py:31:80: E501 line too long (84 > 79 characters)
    .\controllers\authentication controller.py:33:80: E501 line too long (116 > 79 characters)
    .\controllers\authentication controller.py:59:80: E501 line too long (111 > 79 characters)
    .\controllers\authentication controller.py:64:80: E501 line too long (98 > 79 characters)
    .\controllers\authentication controller.py:65:80: E501 line too long (139 > 79 characters)
    .\controllers\authentication controller.py:78:80: E501 line too long (81 > 79 characters)
    .\controllers\authentication controller.py:88:80: E501 line too long (81 > 79 characters)
    .\controllers\authentication controller.py:91:80: E501 line too long (116 > 79 characters)
    .\controllers\authentication controller.py:92:80: E501 line too long (80 > 79 characters)
    .\controllers\authentication controller.py:95:80: E501 line too long (99 > 79 characters)
    .\controllers\authentication controller.py:96:80: E501 line too long (86 > 79 characters)
    .\controllers\authentication controller.py:105:80: E501 line too long (101 > 79 characters)
    .\controllers\authentication controller.py:106:80: E501 line too long (81 > 79 characters)
    .\controllers\authentication controller.py:111:80: E501 line too long (81 > 79 characters)
```

```
.\controllers\authentication controller.py:114:80: E501 line too long (91 > 79 characters) .\controllers\order controller.py:1:1: F401
'services.order service.OrderService' imported but unused .\controllers\order controller.py:2:1: F401
'services.product service.ProductService' imported but unused .\controllers\order controller.py:5:1: E302 expected 2 blank lines, found 1
.\controllers\order controller.py:18:80: E501 line too long (80 > 79 characters) .\controllers\order controller.py:27:80: E501 line too
long (91 > 79 characters) .\controllers\product controller.py:1:1: F401 'services.product service.ProductService' imported but unused
.\controllers\product controller.py:4:1: E302 expected 2 blank lines, found 1 .\controllers\product controller.py:16:80: E501 line too
long (92 > 79 characters) .\main.py:22:1: E302 expected 2 blank lines, found 1 .\main.py:39:1: E305 expected 2 blank lines after class or
function definition, found 1 .\models\order.py:4:1: E302 expected 2 blank lines, found 1 .\models\order.py:9:80: E501 line too long (83 >
79 characters) .\models\order.py:12:80: E501 line too long (85 > 79 characters) .\models\user.py:1:14: W291 trailing whitespace
.\models\user.py:3:1: E302 expected 2 blank lines, found 1 .\models\user.py:14:80: E501 line too long (107 > 79 characters)
.\models\user.py:24:80: E501 line too long (92 > 79 characters) .\models\user.py:28:1: E302 expected 2 blank lines, found 1
.\models\user.py:30:80: E501 line too long (96 > 79 characters) .\models\user.py:31:80: E501 line too long (135 > 79 characters)
.\models\user.py:33:1: E302 expected 2 blank lines, found 1 .\models\user.py:35:80: E501 line too long (96 > 79 characters)
.\models\user.py:36:80: E501 line too long (135 > 79 characters) .\models\user.py:38:1: E302 expected 2 blank lines, found 1
.\models\user.py:44:80: E501 line too long (108 > 79 characters) .\models\user.py:45:80: E501 line too long (138 > 79 characters)
.\populate data.py:3:80: E501 line too long (80 > 79 characters) .\populate data.py:7:1: F401 'sys' imported but unused
.\populate data.py:14:1: E302 expected 2 blank lines, found 1 .\populate data.py:26:80: E501 line too long (97 > 79 characters)
.\populate data.py:27:80: E501 line too long (97 > 79 characters) .\populate data.py:28:80: E501 line too long (103 > 79 characters)
\populate data.py:31:80: E501 line too long (120 > 79 characters) \populate data.py:32:80: E501 line too long (120 > 79 characters)
\populate data.py:33:80: E501 line too long (157 > 79 characters) \populate data.py:42:1: E302 expected 2 blank lines, found 1
\populate data.py:50:80: E501 line too long (102 > 79 characters) \populate data.py:51:80: E501 line too long (105 > 79 characters)
\populate data.py:52:80: E501 line too long (106 > 79 characters) \populate data.py:53:80: E501 line too long (108 > 79 characters)
.\populate data.py:54:80: E501 line too long (105 > 79 characters) .\populate data.py:62:1: E305 expected 2 blank lines after class or
function definition, found 1 .\services\order service.py:5:1: E302 expected 2 blank lines, found 1 .\services\order service.py:66:80: E501
line too long (95 > 79 characters) .\services\product service.py:5:1: E302 expected 2 blank lines, found 1
.\services\product service.py:7:80: E501 line too long (80 > 79 characters) .\services\product service.py:11:80: E501 line too long (86 >
79 characters) .\services\product service.py:18:80: E501 line too long (81 > 79 characters) .\services\product service.py:59:80: E501 line
too long (81 > 79 characters) .\services\user service.py:5:1: E302 expected 2 blank lines, found 1 .\services\user service.py:7:80: E501
line too long (89 > 79 characters) .\services\user service.py:11:80: E501 line too long (90 > 79 characters)
.\services\user service.py:63:80: E501 line too long (112 > 79 characters) .\test authentication.py:2:1: F401 'os' imported but unused
.\test authentication.py:10:1: E302 expected 2 blank lines, found 1 .\test authentication.py:25:1: E302 expected 2 blank lines, found 1
.\test authentication.py:41:80: E501 line too long (93 > 79 characters) .\test authentication.py:42:80: E501 line too long (84 > 79
characters) .\test authentication.py:57:80: E501 line too long (82 > 79 characters) .\test authentication.py:64:80: E501 line too long (93
> 79 characters) .\test authentication.py:65:80: E501 line too long (84 > 79 characters) .\test authentication.py:74:48: W292 no newline
at end of file .\test conftest.py:2:1: F401 'os' imported but unused .\test conftest.py:11:80: E501 line too long (106 > 79 characters)
.\test conftest.py:13:80: E501 line too long (109 > 79 characters) .\test conftest.py:14:80: E501 line too long (118 > 79 characters)
.\test conftest.py:15:80: E501 line too long (83 > 79 characters) .\test conftest.py:18:1: E302 expected 2 blank lines, found 1
.\test_conftest.py:24:1: E302 expected 2 blank lines, found 1 .\test_conftest.py:30:1: E302 expected 2 blank lines, found 1
.\test conftest.py:36:1: E302 expected 2 blank lines, found 1 .\test conftest.py:40:1: E302 expected 2 blank lines, found 1
.\test conftest.py:44:1: E302 expected 2 blank lines, found 1 .\test conftest.py:47:1: W391 blank line at end of file
.\test linter.py:4:1: E302 expected 2 blank lines, found 1 .\test linter.py:17:63: W292 no newline at end of file .\test order.py:2:1:
F401 'uuid' imported but unused .\test order.py:4:1: F401 'models.order.Order' imported but unused .\test order.py:10:1: E302 expected 2
blank lines, found 1 .\test order.py:17:1: E302 expected 2 blank lines, found 1 .\test order.py:32:1: E302 expected 2 blank lines, found 1
.\test order.py:36:1: E302 expected 2 blank lines, found 1 .\test order.py:53:1: E302 expected 2 blank lines, found 1
.\test order.py:65:61: W292 no newline at end of file .\test product.py:7:1: E302 expected 2 blank lines, found 1 .\test product.py:10:80:
E501 line too long (80 > 79 characters) .\test product.py:25:1: E302 expected 2 blank lines, found 1 .\test product.py:32:1: E302 expected
2 blank lines, found 1 .\test product.py:34:80: E501 line too long (90 > 79 characters) .\test product.py:40:1: E302 expected 2 blank
```

```
lines, found 1 .\test product.py:42:80: E501 line too long (85 > 79 characters) .\test product.py:47:1: E302 expected 2 blank lines, found
1 .\test product.py:53:80: E501 line too long (87 > 79 characters) .\test product.py:57:48: W292 no newline at end of file
.\unlock admin.py:1:1: F401 'os' imported but unused .\unlock admin.py:2:1: F401 'sys' imported but unused .\unlock admin.py:3:1: F401
'ison' imported but unused .\unlock admin.py:6:1: E302 expected 2 blank lines, found 1 .\unlock admin.py:17:1: E305 expected 2 blank lines
after class or function definition, found 1 .\views\cli view.py:1:1: F401 'controllers.authentication controller.AuthenticationController'
imported but unused .\views\cli view.py:2:1: F401 'controllers.product controller.ProductController' imported but unused
.\views\cli view.py:3:1: F401 'controllers.order controller.OrderController' imported but unused .\views\cli view.py:5:1: E302 expected 2
blank lines, found 1 .\views\cli view.py:60:80: E501 line too long (82 > 79 characters) .\views\cli view.py:119:80: E501 line too long
(109 > 79 characters) .\views\cli view.py:119:110: W291 trailing whitespace .\views\cli view.py:120:80: E501 line too long (92 > 79
characters) .\views\cli view.py:150:80: E501 line too long (92 > 79 characters) .\views\cli view.py:218:80: E501 line too long (94 > 79
characters) .\views\cli view.py:236:80: E501 line too long (125 > 79 characters) .\views\cli view.py:240:80: E501 line too long (89 > 79
characters) .\views\cli view.py:254:80: E501 line too long (83 > 79 characters) .\views\cli view.py:257:80: E501 line too long (112 > 79
characters) .\views\cli view.py:260:80: E501 line too long (99 > 79 characters) .\views\cli view.py:262:80: E501 line too long (105 > 79
characters)">@pytest.mark.linter def test flake8(): """ Runs Flake8 lint checks on the entire project. Fails if any stylistic or syntax
issues are found. """ # Use python -m flake8 instead of direct flake8 cmd = ["python", "-m", "flake8", "."] result = subprocess.run(cmd,
capture output=True, text=True) if result.returncode != 0: combined output = result.stdout + "\n" + result.stderr > pytest.fail(f"Flake8
lint errors:\n{combined output}") E Failed: Flake8 lint errors: E .\IMS.py:1:1: W391 blank line at end of file E
.\api\company validation api.py:6:68: W291 trailing whitespace E .\api\company validation api.py:12:1: E302 expected 2 blank lines, found
1 E .\api\company validation api.py:20:1: E305 expected 2 blank lines after class or function definition, found 1 E
.\api\company validation api.py:22:1: W391 blank line at end of file E .\controllers\authentication controller.py:5:14: W291 trailing
whitespace E .\controllers\authentication controller.py:6:1: F401 'models.user.Admin' imported but unused E
.\controllers\authentication controller.py:8:1: E302 expected 2 blank lines, found 1 E .\controllers\authentication controller.py:15:80:
E501 line too long (96 > 79 characters) E .\controllers\authentication controller.py:16:80: E501 line too long (85 > 79 characters) E
.\controllers\authentication controller.py:31:80: E501 line too long (84 > 79 characters) E
.\controllers\authentication controller.py:33:80: E501 line too long (116 > 79 characters) E
.\controllers\authentication controller.py:59:80: E501 line too long (111 > 79 characters) E
.\controllers\authentication controller.py:64:80: E501 line too long (98 > 79 characters) E
.\controllers\authentication controller.py:65:80: E501 line too long (139 > 79 characters) E
.\controllers\authentication controller.py:78:80: E501 line too long (81 > 79 characters) E
.\controllers\authentication controller.py:88:80: E501 line too long (81 > 79 characters) E
.\controllers\authentication controller.py:91:80: E501 line too long (116 > 79 characters) E
.\controllers\authentication controller.py:92:80: E501 line too long (80 > 79 characters) E
.\controllers\authentication controller.py:95:80: E501 line too long (99 > 79 characters) E
.\controllers\authentication controller.py:96:80: E501 line too long (86 > 79 characters) E
.\controllers\authentication controller.py:105:80: E501 line too long (101 > 79 characters) E
.\controllers\authentication controller.py:106:80: E501 line too long (81 > 79 characters) E
.\controllers\authentication controller.py:111:80: E501 line too long (81 > 79 characters) E
.\controllers\authentication controller.py:114:80: E501 line too long (91 > 79 characters) E .\controllers\order controller.py:1:1: F401
'services.order service.OrderService' imported but unused E .\controllers\order controller.py:2:1: F401
'services.product service.ProductService' imported but unused E .\controllers\order controller.py:5:1: E302 expected 2 blank lines, found
1 E .\controllers\order controller.py:18:80: E501 line too long (80 > 79 characters) E .\controllers\order controller.py:27:80: E501 line
too long (91 > 79 characters) E .\controllers\product controller.py:1:1: F401 'services.product service.ProductService' imported but
unused E .\controllers\product controller.py:4:1: E302 expected 2 blank lines, found 1 E .\controllers\product controller.py:16:80: E501
line too long (92 > 79 characters) E .\main.py:22:1: E302 expected 2 blank lines, found 1 E .\main.py:39:1: E305 expected 2 blank lines
after class or function definition, found 1 E .\models\order.py:4:1: E302 expected 2 blank lines, found 1 E .\models\order.py:9:80: E501
line too long (83 > 79 characters) E .\models\order.py:12:80: E501 line too long (85 > 79 characters) E .\models\user.py:1:14: W291
trailing whitespace E .\models\user.py:3:1: E302 expected 2 blank lines, found 1 E .\models\user.py:14:80: E501 line too long (107 > 79
```

```
characters) E .\models\user.py:24:80: E501 line too long (92 > 79 characters) E .\models\user.py:28:1: E302 expected 2 blank lines, found
1 E .\models\user.py:30:80: E501 line too long (96 > 79 characters) E .\models\user.py:31:80: E501 line too long (135 > 79 characters) E
.\models\user.py:33:1: E302 expected 2 blank lines, found 1 E .\models\user.py:35:80: E501 line too long (96 > 79 characters) E
.\models\user.py:36:80: E501 line too long (135 > 79 characters) E .\models\user.py:38:1: E302 expected 2 blank lines, found 1 E
.\models\user.py:44:80: E501 line too long (108 > 79 characters) E .\models\user.py:45:80: E501 line too long (138 > 79 characters) E
.\populate data.py:3:80: E501 line too long (80 > 79 characters) E .\populate data.py:7:1: F401 'sys' imported but unused E
.\populate data.py:14:1: E302 expected 2 blank lines, found 1 E .\populate data.py:26:80: E501 line too long (97 > 79 characters) E
\populate data.py:27:80: E501 line too long (97 > 79 characters) E \populate data.py:28:80: E501 line too long (103 > 79 characters) E
\populate data.py:31:80: E501 line too long (120 > 79 characters) E \populate data.py:32:80: E501 line too long (120 > 79 characters) E
.\populate data.py:33:80: E501 line too long (157 > 79 characters) E .\populate data.py:42:1: E302 expected 2 blank lines, found 1 E
\populate data.py:50:80: E501 line too long (102 > 79 characters) E \populate data.py:51:80: E501 line too long (105 > 79 characters) E
\populate data.py:52:80: E501 line too long (106 > 79 characters) E \populate data.py:53:80: E501 line too long (108 > 79 characters) E
.\populate data.py:54:80: E501 line too long (105 > 79 characters) E .\populate data.py:62:1: E305 expected 2 blank lines after class or
function definition, found 1 E .\services\order service.py:5:1: E302 expected 2 blank lines, found 1 E .\services\order service.py:66:80:
E501 line too long (95 > 79 characters) E .\services\product service.py:5:1: E302 expected 2 blank lines, found 1 E
.\services\product service.py:7:80: E501 line too long (80 > 79 characters) E .\services\product service.py:11:80: E501 line too long (86
> 79 characters) E .\services\product service.py:18:80: E501 line too long (81 > 79 characters) E .\services\product service.py:59:80:
E501 line too long (81 > 79 characters) E .\services\user service.py:5:1: E302 expected 2 blank lines, found 1 E
.\services\user service.py:7:80: E501 line too long (89 > 79 characters) E .\services\user service.py:11:80: E501 line too long (90 > 79
characters) E .\services\user service.py:63:80: E501 line too long (112 > 79 characters) E .\test authentication.py:2:1: F401 'os'
imported but unused E .\test authentication.py:10:1: E302 expected 2 blank lines, found 1 E .\test authentication.py:25:1: E302 expected 2
blank lines, found 1 E .\test authentication.py:41:80: E501 line too long (93 > 79 characters) E .\test authentication.py:42:80: E501 line
too long (84 > 79 characters) E .\test authentication.py:57:80: E501 line too long (82 > 79 characters) E .\test authentication.py:64:80:
E501 line too long (93 > 79 characters) E .\test authentication.py:65:80: E501 line too long (84 > 79 characters) E
.\test authentication.py:74:48: W292 no newline at end of file E .\test conftest.py:2:1: F401 'os' imported but unused E
.\test conftest.py:11:80: E501 line too long (106 > 79 characters) E .\test conftest.py:13:80: E501 line too long (109 > 79 characters) E
.\test conftest.py:14:80: E501 line too long (118 > 79 characters) E .\test conftest.py:15:80: E501 line too long (83 > 79 characters) E
.\test conftest.py:18:1: E302 expected 2 blank lines, found 1 E .\test conftest.py:24:1: E302 expected 2 blank lines, found 1 E
.\test conftest.py:30:1: E302 expected 2 blank lines, found 1 E .\test conftest.py:36:1: E302 expected 2 blank lines, found 1 E
.\test conftest.py:40:1: E302 expected 2 blank lines, found 1 E .\test conftest.py:44:1: E302 expected 2 blank lines, found 1 E
.\test conftest.py:47:1: W391 blank line at end of file E .\test linter.py:4:1: E302 expected 2 blank lines, found 1 E
.\test linter.py:17:63: W292 no newline at end of file E .\test order.py:2:1: F401 'uuid' imported but unused E .\test order.py:4:1: F401
'models.order.Order' imported but unused E .\test order.py:10:1: E302 expected 2 blank lines, found 1 E .\test order.py:17:1: E302
expected 2 blank lines, found 1 E .\test order.py:32:1: E302 expected 2 blank lines, found 1 E .\test order.py:36:1: E302 expected 2 blank
lines, found 1 E .\test order.py:53:1: E302 expected 2 blank lines, found 1 E .\test order.py:65:61: W292 no newline at end of file E
.\test product.py:7:1: E302 expected 2 blank lines, found 1 E .\test product.py:10:80: E501 line too long (80 > 79 characters) E
.\test product.py:25:1: E302 expected 2 blank lines, found 1 E .\test product.py:32:1: E302 expected 2 blank lines, found 1 E
.\test product.py:34:80: E501 line too long (90 > 79 characters) E .\test product.py:40:1: E302 expected 2 blank lines, found 1 E
.\test product.py:42:80: E501 line too long (85 > 79 characters) E .\test product.py:47:1: E302 expected 2 blank lines, found 1 E
.\test product.py:53:80: E501 line too long (87 > 79 characters) E .\test product.py:57:48: W292 no newline at end of file E
.\unlock admin.py:1:1: F401 'os' imported but unused E .\unlock admin.py:2:1: F401 'sys' imported but unused E .\unlock admin.py:3:1: F401
'json' imported but unused E .\unlock admin.py:6:1: E302 expected 2 blank lines, found 1 E .\unlock admin.py:17:1: E305 expected 2 blank
lines after class or function definition, found 1 E .\views\cli view.py:1:1: F401
'controllers.authentication controller.AuthenticationController' imported but unused E .\views\cli view.py:2:1: F401
'controllers.product controller.ProductController' imported but unused E .\views\cli view.py:3:1: F401
'controllers.order controller.OrderController' imported but unused E .\views\cli view.py:5:1: E302 expected 2 blank lines, found 1 E
.\views\cli view.py:60:80: E501 line too long (82 > 79 characters) E .\views\cli view.py:119:80: E501 line too long (109 > 79 characters)
```

```
E .\views\cli view.py:119:110: W291 trailing whitespace E .\views\cli view.py:120:80: E501 line too long (92 > 79 characters) E
  .\views\cli view.py:150:80: E501 line too long (92 > 79 characters) E .\views\cli view.py:218:80: E501 line too long (94 > 79 characters)
  E .\views\cli view.py:236:80: E501 line too long (125 > 79 characters) E .\views\cli view.py:240:80: E501 line too long (89 > 79
  characters) E .\views\cli view.py:254:80: E501 line too long (83 > 79 characters) E .\views\cli view.py:257:80: E501 line too long (112 >
  79 characters) E .\views\cli view.py:260:80: E501 line too long (99 > 79 characters) E .\views\cli view.py:262:80: E501 line too long (105
  > 79 characters) test linter.py:17: Failed</failure>
  <system-out>------ Captured Log ------ Captured
  Out ----- </system-out>
  <system-err>------ <system-err>------ /
 </testcase>
 <testcase classname="test order" name="test list customer orders" file="test order.py" line="52" time="0.014">
  Out ------ Order placed successfully. </system-out>
  <svstem-err>------ 
 </testcase>
 <testcase classname="test order" name="test place order" file="test order.py" line="35" time="0.010">
  <system-out>------ Captured Log ------ Captured
  Out ----- Order placed successfully. </system-out>
  <svstem-err>------ 
 <testcase classname="test product" name="test add product" file="test product.py" line="24" time="0.008">
  Out ----- </system-out>
  </testcase>
 <testcase classname="test product" name="test delete product" file="test product.py" line="39" time="0.008">
  Out ----- </system-out>
  </testcase>
 <testcase classname="test product" name="test list products" file="test product.py" line="46" time="0.007">
  Out ----- </system-out>
  <system-err>------ /
 </testcase>
 <testcase classname="test product" name="test update stock" file="test product.py" line="31" time="0.009">
  <system-out>------ Captured Log ------ Captured
  Out ----- </system-out>
  </testcase>
</testsuite>
</testsuites>
```