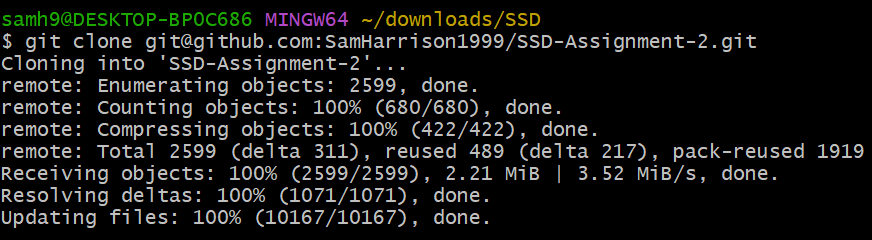
Course: MSc Computer Science

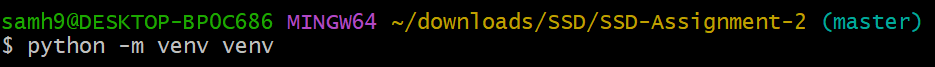
Module: Secure Software Development March 2024

Assignment: Coding Output and Evidence of Testing

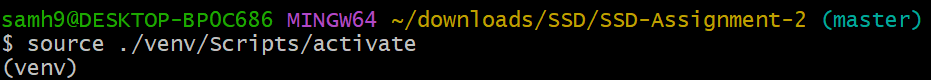
# Cloning the project



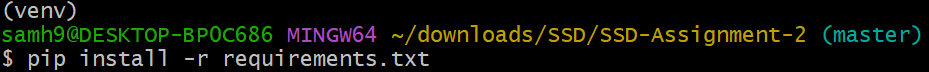
# Creating Virtual environment



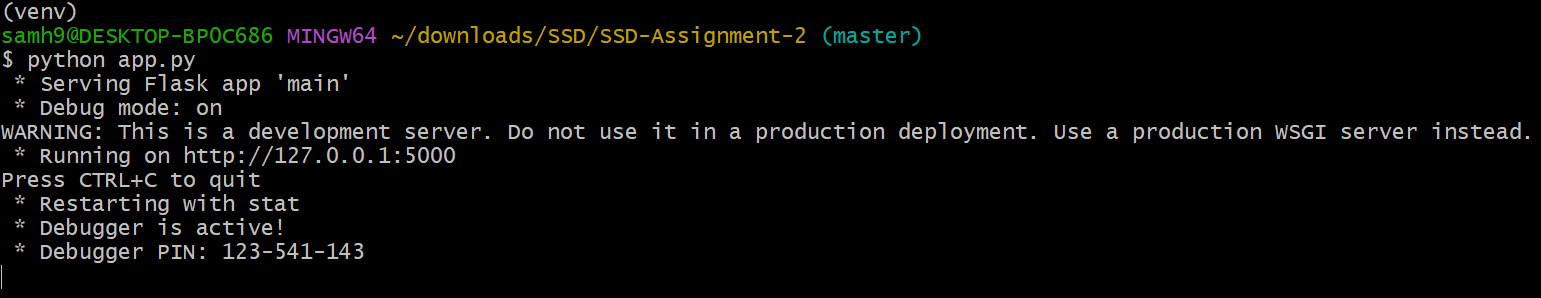
# Activating virtual environment



# Installing the project requirements



# Starting the flask application



# Sign up

## Steps for sign up

1. Go to [Register Page](http://127.0.0.1:5000/register)
2. Fill in form
3. Click create account

## [Successful signup](https://1drv.ms/v/c/e08399976f28f5bf/EZwU-rkJXu9LvMxfsKTsQyUBp9a4hPUhlzSDxH5v94-lNg?e=qP0Kub)

## [Creating an account with a username that already exists](https://1drv.ms/v/c/e08399976f28f5bf/EVuYjNwH22tKsO2iQi6XLD4B1edXd_wlrww67FDY0Jig4g?e=i6NUQJ)

## [Creating an account with an email that is already associated with an account](https://1drv.ms/v/c/e08399976f28f5bf/EVOw45L4-HNAnAKUJ-xl5eABS4x6A7Ka3pXJjqFSvCqh9g?e=mc2cPZ)

## Creating an account with validation errors

### [Creating an account with no username](https://1drv.ms/v/c/e08399976f28f5bf/EXdhAFzPaMlJgzjUG4VAG00BZHSPUWdyvFmxdLsKPHf4dA?e=LTNwlQ)

### [Creating an account with an invalid email address](https://1drv.ms/v/c/e08399976f28f5bf/EUwp-NNylA9DubRwU1SnO6gBsFCq725b1xiBQ6NRWI4IHA?e=7XLgME)

### [Creating an account with passwords errors](https://1drv.ms/v/c/e08399976f28f5bf/Edh3tyX5BahJrMNHkR9AN-sB40qTWYAnivb-S-hba_MQhw?e=yj2bHr)

# Login

## Steps for login

1. Go to [Login Page](http://127.0.0.1:5000/login)
2. Fill in form
3. Click login

## [Login as an administrator](https://1drv.ms/v/c/e08399976f28f5bf/EVKxpbznTJhNr_CyCEN1qUoBaLBbEDk8lL_05WB6YyUYWw?e=w2uCZ6)

## [Login in as a customer](https://1drv.ms/v/c/e08399976f28f5bf/EdxzzRa1_ThFhDJH3XMRx9wBqm9_hdSVXZ_SQwAT4N8aSQ?e=7sMumy)

## [Failed login attempt](https://1drv.ms/v/c/e08399976f28f5bf/EQdn6-qwK31KhN8iu6mKg74BaivJypjNYvUF4bRaEwUxIQ?e=dH4LXs)

# Logout

## Steps for logout

1. Login
2. Click Logout

## [Logout administrator](https://1drv.ms/v/c/e08399976f28f5bf/EZPq1khTC_tCnn-MDXZZKoMBbZj41eRLeOsYaoR8dj-_oA?e=BoRub5)

## [Logout customer](https://1drv.ms/v/c/e08399976f28f5bf/EUeKPmt3s0xItn-egttqzfABbTpM1M9cfuilY83yeKdI_A?e=3LpZH8)

# User Profile

## Steps for accessing your individual user profile

1. Login
2. Click profile

## [Accessing your profile](https://1drv.ms/v/c/e08399976f28f5bf/EdmDTQ5GkLVHiKyxHoKYS9wBnHQSUfXZbFm8YfIXQGHj6Q?e=UszGvd)

## [Access denied when accessing another user’s profile](https://1drv.ms/v/c/e08399976f28f5bf/Eb56wvnimN5HuxAazWwAEzMBJ1z8vIhu6U9CHtI_G5AdNA?e=iWZxtn)

# [Page not found](https://1drv.ms/v/c/e08399976f28f5bf/EQmLWF8TzjtFhZqR9WTMe0MBVHMUU4H_xU__vH7aW3Tyzw?e=3Ei9pr)

# Change Password

## Steps for accessing updating your password

1. Login
2. Click profile
3. Click change password
4. Fill in form
5. Click update password

## Updating your password

## [Successfully updating password](https://1drv.ms/v/c/e08399976f28f5bf/EdHS8pb6C5pDmBqCTr-KMEgBWr-62x-A85xfM7VdkjnYEQ?e=3zEETV)

## Error when updating password

### [Current password is incorrect](https://1drv.ms/v/c/e08399976f28f5bf/Ebn1Q87wVodCkhyeeSW_BTIBlPnI4dk6ZkQIuD_c7YdOKA?e=QzApB4)

### [New passwords don’t match](https://1drv.ms/v/c/e08399976f28f5bf/ETt3O2icOJ5FmQ-UxfdFOcEBqFa85O_UqGNkBbCHYNqi2g?e=cApvTa)

### [Password minimum requirements not met](https://1drv.ms/v/c/e08399976f28f5bf/EUonR0TL7LZEqEAfKLAG-zQBfEJV3tzH1cyitywe1FNaCQ?e=eWQVzk)

## [Access denied when updating another user’s password](https://1drv.ms/v/c/e08399976f28f5bf/EeKPt5PWaaNHljPOlgYNXjMBsSy0_nzxWt0iiFUV6WINAw?e=78jedr)

# Creating a product

## Steps for accessing creating a product

1. Login
2. Click add new product
3. Fill in form
4. Click add product

## [Successfully creating new product](https://1drv.ms/v/c/e08399976f28f5bf/EWlUS2YRpkVNiwfZ7f4o63ABx6YvSx0DvsbaYQPw3UHC3Q?e=6Pm9UJ)

## [Error when creating a product](https://1drv.ms/v/c/e08399976f28f5bf/EQbMJeKidq1OlLRzRCb4lUQBkudUFKVrmX7wpShO28lvRA?e=CLDp7r)

## [Access denied when customer tries to add a new product](https://1drv.ms/v/c/e08399976f28f5bf/EUauPzX4yENLhVFvzPu6QEYB5-4qy1w05Vzve2bn4oCcHg?e=oaiYwP)

# Manage products

## Steps for viewing products

1. Login
2. Click manage products

## [Administrator able to view products](https://1drv.ms/v/c/e08399976f28f5bf/EdRNsDnr-xtBokr548BHX3EBRMbVkDNs86F4xXbvDO9U1Q?e=3wk29Y)

## [Access denied when customer tries to view products from view products page](https://1drv.ms/v/c/e08399976f28f5bf/EUwsakvdtwZCnyX2BFsMhaMB6hYbkUM91fYjsiBcaLkOOw?e=UOvpfp)

# Updating Products

## Steps for updating a product

1. Login
2. Click manage products
3. Click Update
4. Fill in the form
5. Click update product

## [Successfully updating a product](https://1drv.ms/v/c/e08399976f28f5bf/EQ-63ad5CYxImtEf_vE8vi4BKa3vAr0iiLmu7kmG54ZcUg?e=6qHDgP)

## [Error when updating a product](https://1drv.ms/v/c/e08399976f28f5bf/EU89yrmILy9An8zH6CRTdLwBp2LW9BmUthu4ExOScJ71rA?e=gnWAS4)

## [Access denied when non-administrator tries to update a product](https://1drv.ms/v/c/e08399976f28f5bf/EeGYUqYBgcxIg3_p-PEPGLwBALbPfOu6gdzUy5HK6t9T7Q?e=CNEWQF)

# Deleting a product

## Steps for deleting a product

1. Login
2. Click manage products
3. Click delete

## [Successfully removing a product](https://1drv.ms/v/c/e08399976f28f5bf/EV1wmQWDBAJHsaHv-BQu2QABceDZxCZGrf9gz4vJuFDYdg?e=zOzkvw)

## [Access denied when non-administrator tries to delete a product](https://1drv.ms/v/c/e08399976f28f5bf/ESogKWqh9BFHvoAVH_SAUAEBXScI8VsdDbD9kH_AAIohpA?e=un8Txq)

# Add to cart

## Steps for adding an item to your cart

1. Login
2. Click add

## [Item not already in cart](https://1drv.ms/v/c/e08399976f28f5bf/Ee7b8A_XJqxPj-eQ-NuI1OwBYbRdCQS9IpqJYnwyS9Lv1w?e=ODbhaG)

## [Item already in cart](https://1drv.ms/v/c/e08399976f28f5bf/EUSev1sBE4NOh522R3s-kJQBSY0S_Nyhkbj_fxODsu5N1Q?e=AR8eOw)

# [Increasing the quantity of an item in your cart](https://1drv.ms/v/c/e08399976f28f5bf/EYzAmZ09qfNBvK6R8OPelpwBnt1bZWf9-GMgqvXFuRpMkw?e=2DObft)

## Steps for increasing the quantity of an item in your cart

1. Login
2. Add item to cart
3. Click cart
4. Click plus button

# [Decreasing the quantity of an item in your cart](https://1drv.ms/v/c/e08399976f28f5bf/EVI48Kg5rYxEr2W7UfuHN0EBgQ3IYrEx32HvM4xt1UsAeA?e=qMPBul)

## Steps for decreasing the quantity of an item in your cart

1. Login
2. Add item to cart
3. Click cart
4. Click minus button

# Removing an item from your cart

## Steps for removing an item in your cart

1. Login
2. Add item to cart
3. Click cart
4. Click remove button

### [Removing an item from your cart when it’s the only item in your cart](https://1drv.ms/v/c/e08399976f28f5bf/EQ_OJg5ad49LkwUd_I9XxxIB-llrCacsrPZwvrvnhZqJTQ?e=LBM2FB)

### [Removing an item from your cart when multiple items are in your cart](https://1drv.ms/v/c/e08399976f28f5bf/EXRx4TBC3YlBjxkCIxhaq6wBGDh9_c9YO3mKqFrk71uH-w?e=ptkaRD)

# View Users

## Steps for viewing all users

1. Login
2. Click manage users

## [Administrator can view all users](https://1drv.ms/v/c/e08399976f28f5bf/EXq900kRZiJGn1O7BBVbaHsBPnXfjPcyASmwYcW780wFCA?e=dTJpIT)

## [Access denied when non-administrator tries to view all users](https://1drv.ms/v/c/e08399976f28f5bf/ESp-BdpVBWRCtk7RTlpt2CwBkZitAAIg5yb1G9Ws5e2pnw?e=D5H2rg)

# Deleting a customer

1. Login
2. Click manage users
3. Click delete

## [Successfully deleting a customer](https://1drv.ms/v/c/e08399976f28f5bf/EU5aQYxeaU9Hn_RB6YB2QgkBnb9Ponzdp2_3_urdEFW8sA?e=yJOj2C)

## [Access denied when non-administrator tries to delete a user](https://1drv.ms/v/c/e08399976f28f5bf/EY71U-BtSl5JtDl1VQPnSbcB0CHqAgOHp59_xKaeTXXFYQ?e=1mXjoR)

# Placing an order

## Successfully placing an order

## Failing to place an order if there is not enough stock available

# Order history

## Admin viewing their order history

## Customer viewing their order history

# Manage orders

## Administrator can view all orders

## Access denied when a non-administrator attempts to view all orders

# Updating order status

## Successfully updating an orders status

## Access denied when a non-administrator attempts to change an orders status

# Search

## No matching items

## Matching items

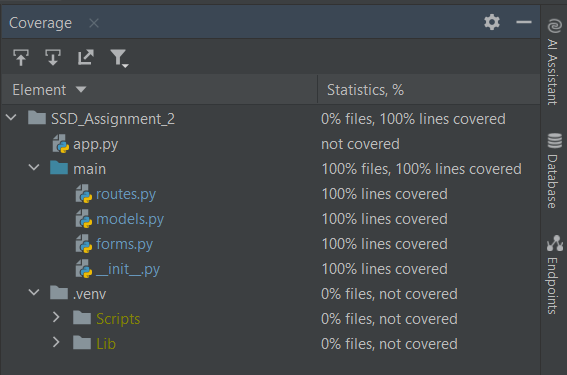
# Dictionary attack

Databases

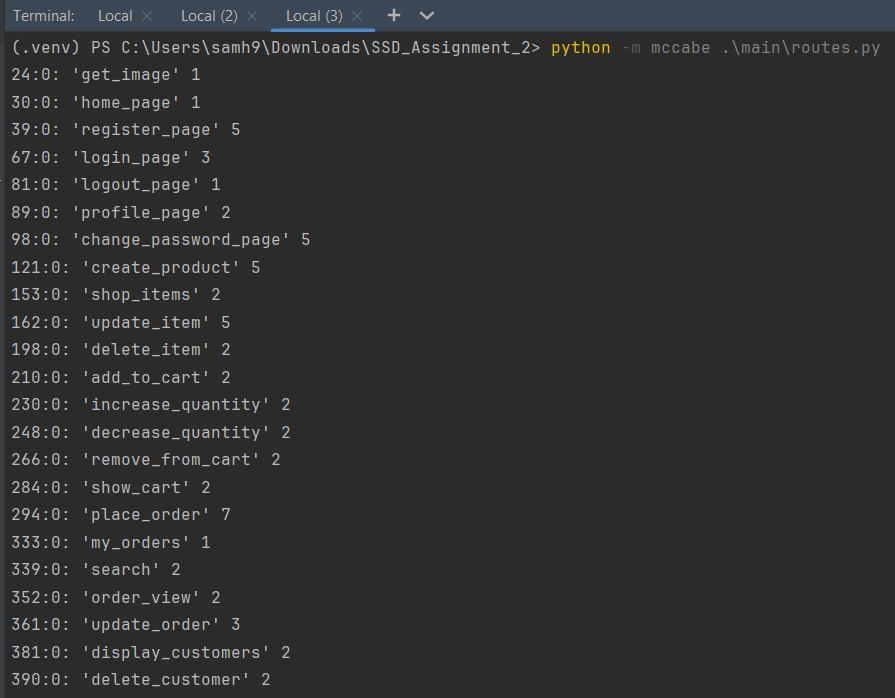
Explaining the code

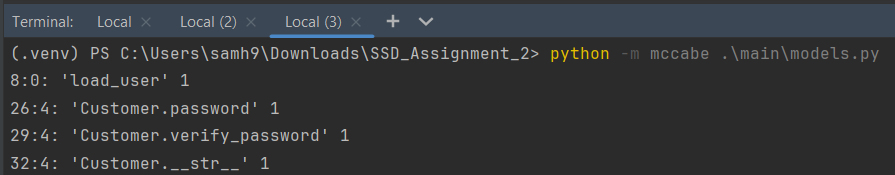
Securing the endpoints

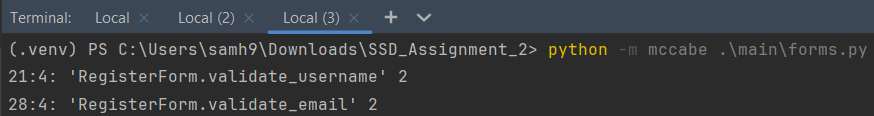
Coverage Results

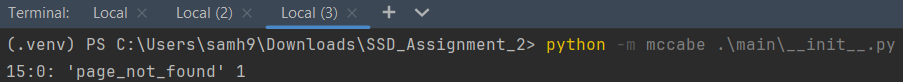


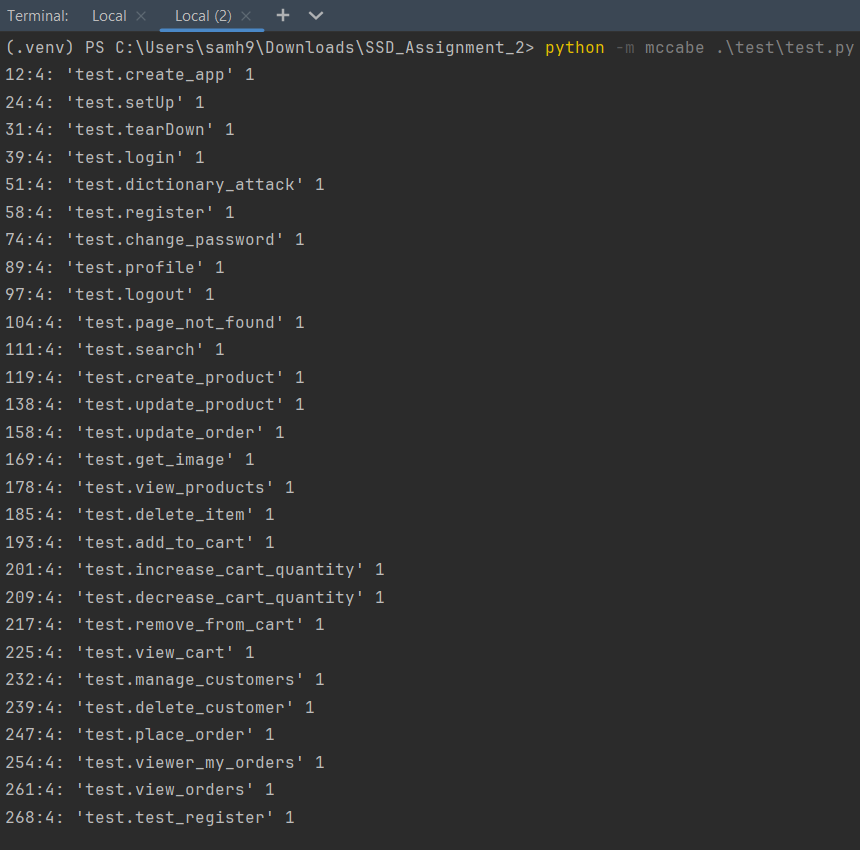
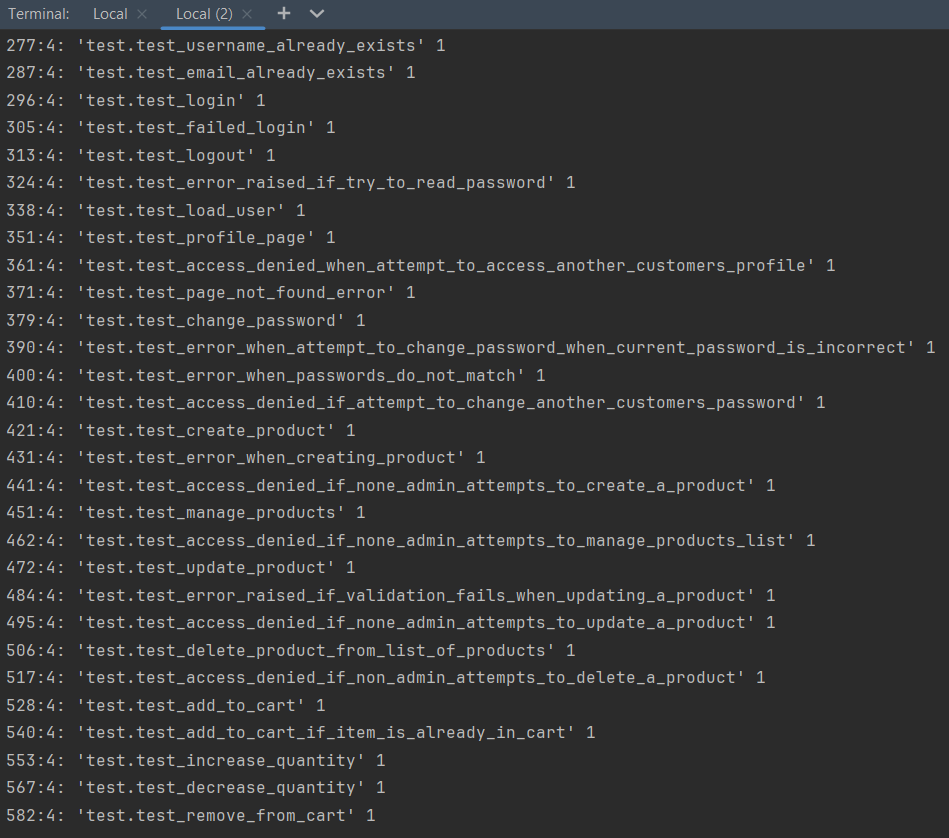
Mccabe results

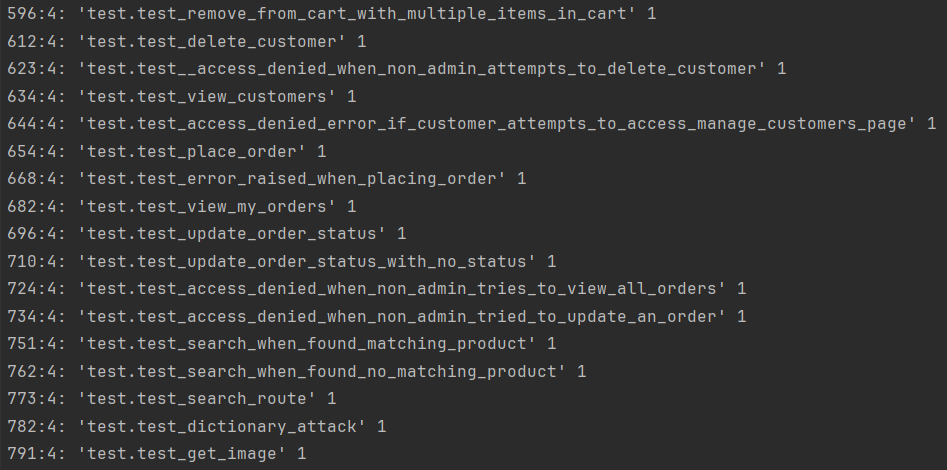


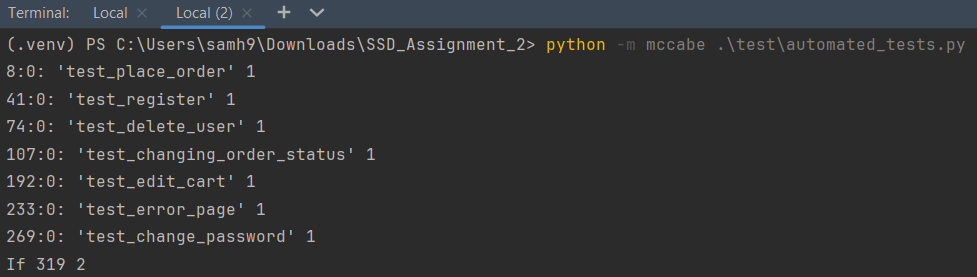




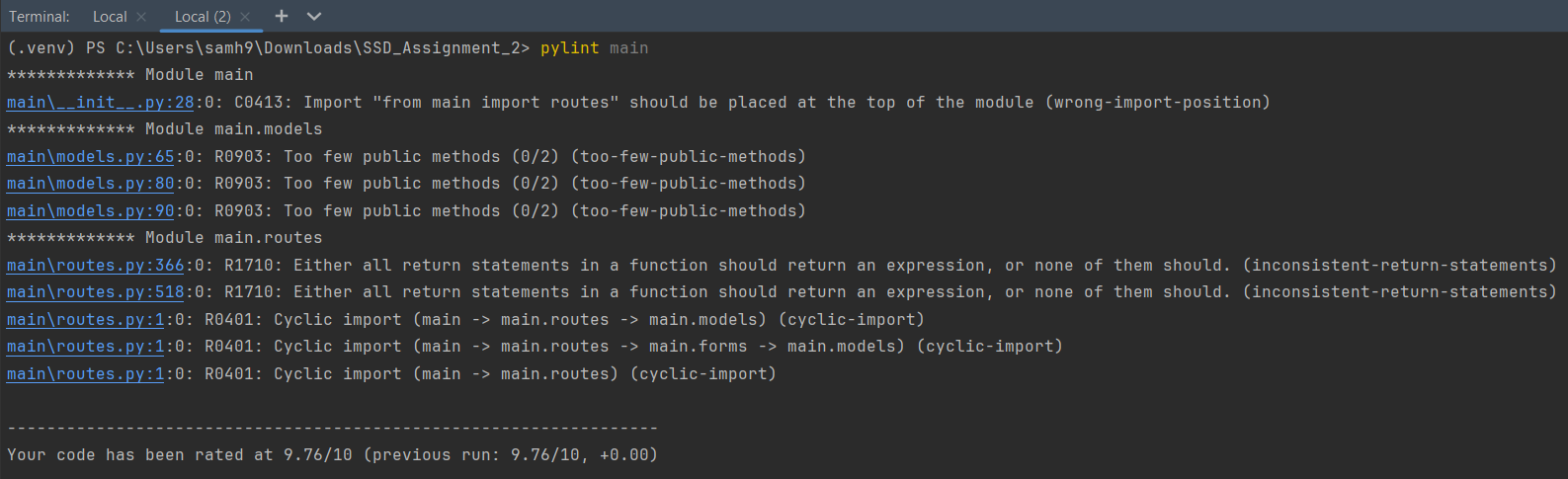


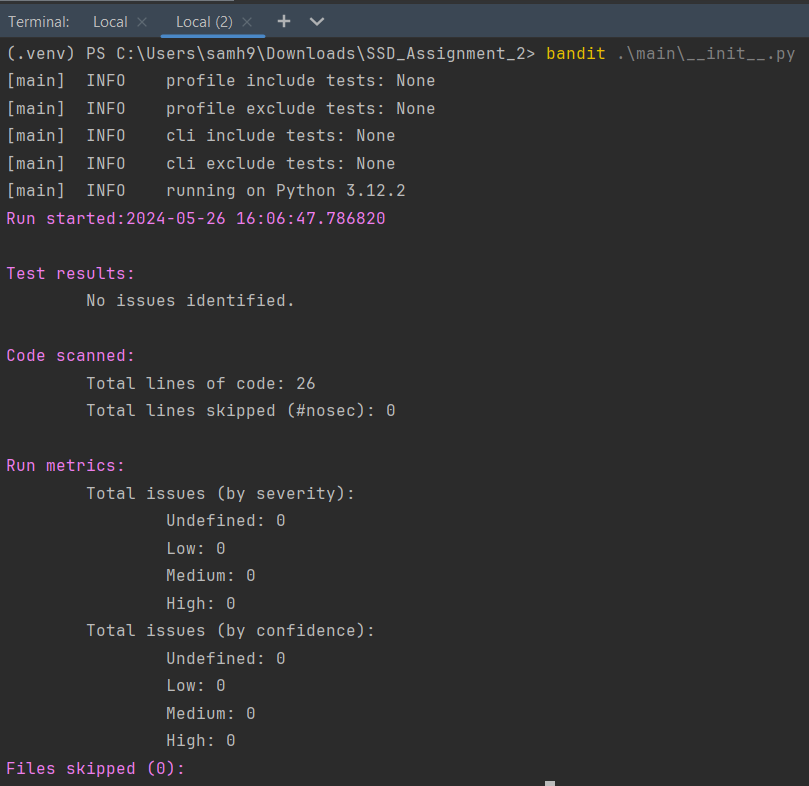


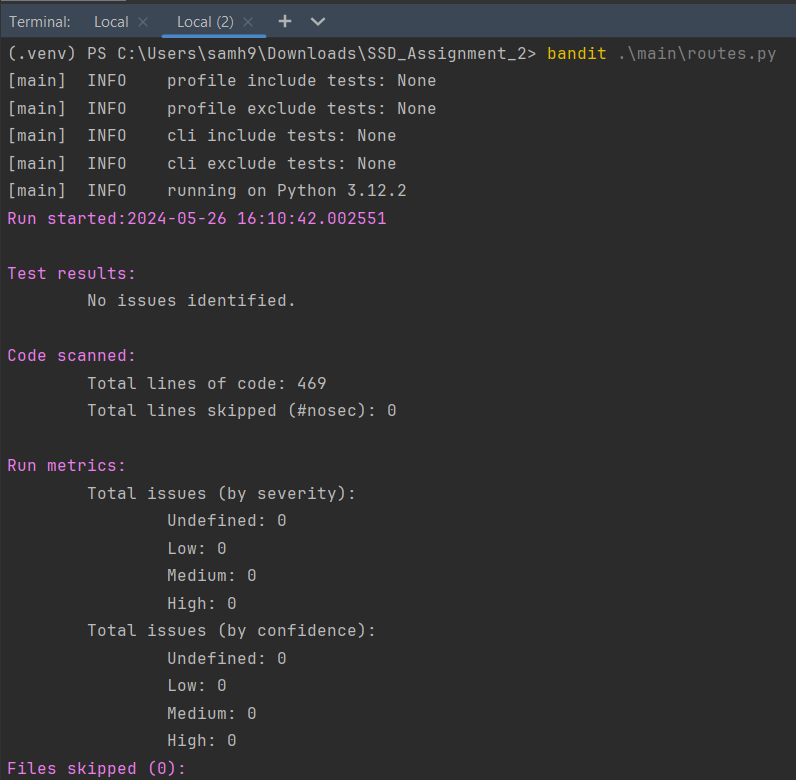


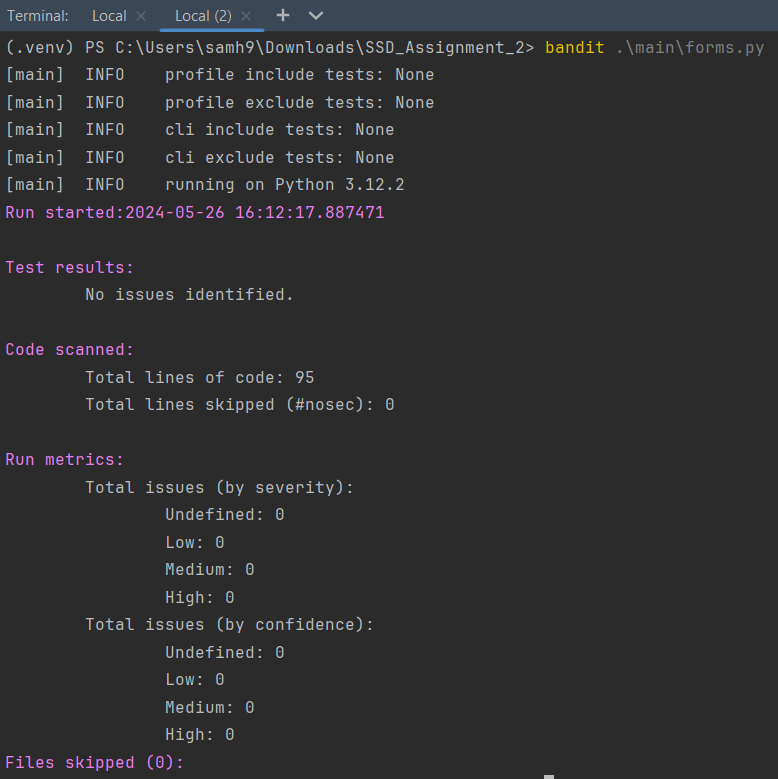
Pylint Results

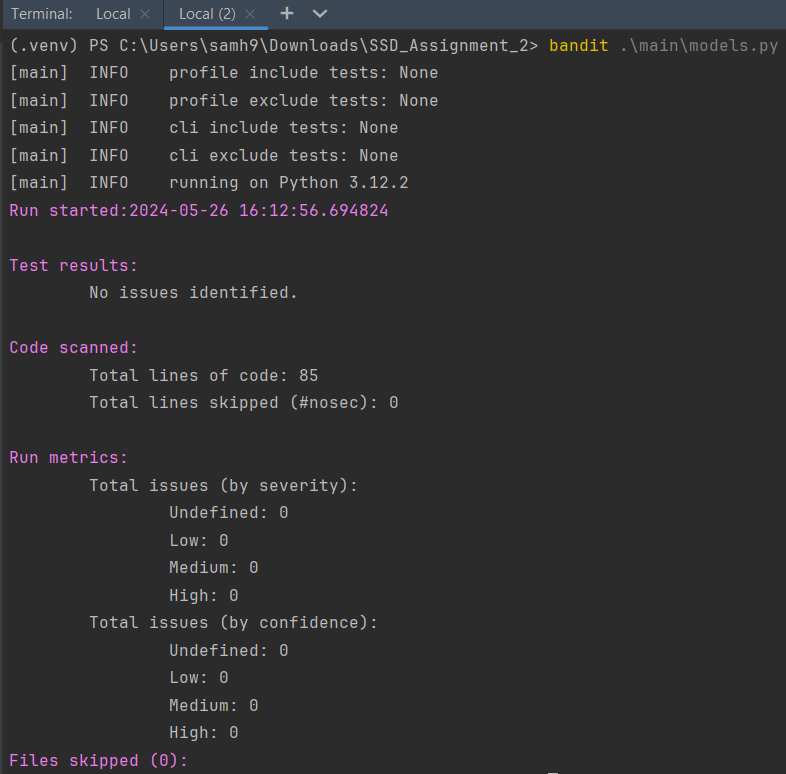


Bandit Results

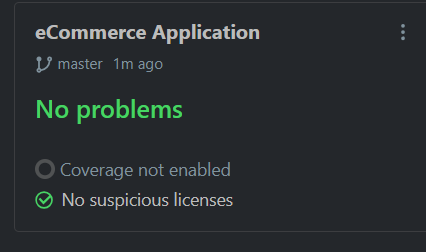


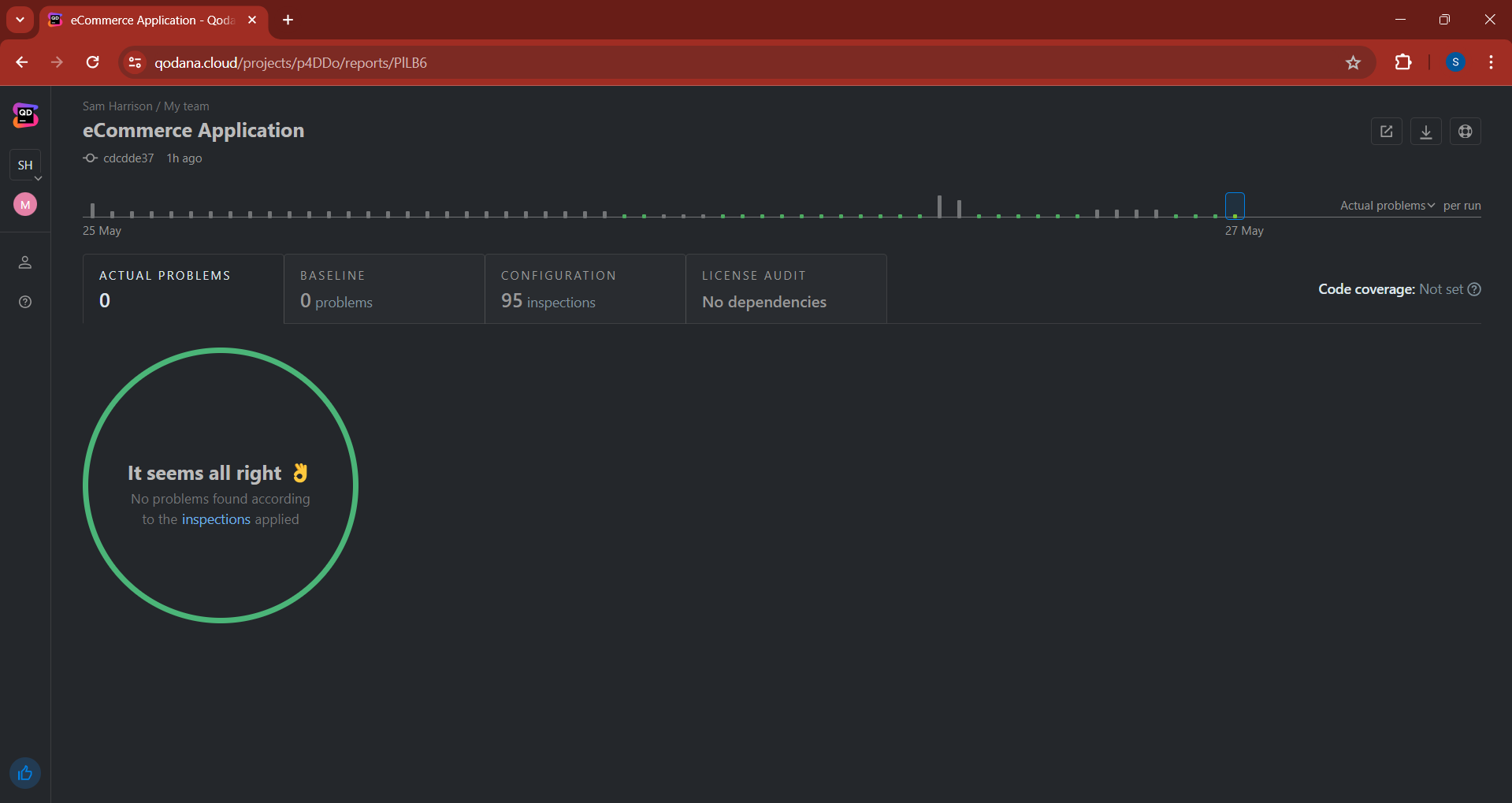






Qodana Results





Unit Tests

Automation Tests

Front End

Back End

Database

Manual Testing

Future Enhancements:

Containerise the application with Kubernetes and Docker

Host the App on Heroku to offer DDoS protection

Create a build Pipeline in Harness for CI/CD

Send build logs to Datadog

Implement branch protection rules and add GitHub actions to ensure commit standards are met

Implement black duck and Coverity scans as part of the build process

Implement code signing process

Implement Datadog dashboard for visualising build success rate, fail cause etc

Write more automation tests

Integrate the stripe API for taking payments