System Requirements Specification Index

For

Python Basics and NumPy, Pandas

1.0

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Use case on Python basics and NumPy and Pandas

Usecase 1 (pythonbasics.py)

1)Write a Python program to return the hospital information, including the name, total doctors, consultation fee, emergency availability, and available departments.

The display_hospital_info() method returns the following details:

- Total doctors
- Hospital Name
- Consultation Fee
- Count of doctors available in emergency

Return the above data by putting them in a string, separated by comma(,)

2) Write a Python program to return a list of patient records, including their name, age, disease, and attending doctor

- The display_patients() method will loop through the patients dictionary.
- For each patient, collate the name, age, disease, and assigned doctor in a string separated by comma (,)
- Put a pipe(|) sign in between each record
- Return the all patient records as string in following format:
  Eg.: “Alice, 30, Flu, Dr. Smith | Bob, 45, Fracture, Dr. Jhonson”

3) Write a Python program to check whether a patient is in the emergency list or not.

- The check_emergency() method take the patient’s name as parameter
- Method checks that if provided patient name is in emergency patient list, If yes return TRUE else return FALSE

Usecase 2 (Student Grades.py)

1) Write a Python program that adds five default student records to a text file (grades.txt). Each record should contain a student’s ID, name, subject, and grade.

- The add_default_students() method is responsible for adding five default student records to the file grades.txt.
- If the file doesn't exist, create it, and the existing content (if any) shall be overwritten with these records.
- Format to write data in file should be as follows:
- ID, name, subject and grade of a student shall be separated by comma (,) and each record in new line
  Eg:

  1001,Alice Johnson,Mathematics,A
  1002,Bob Smith,Physics,B+

2) Write a Python program that reads from the grades.txt file and returns the student grades.

- The view_grades() method is responsible for reading the grades.txt file and returns the following:
- If file is not present/not opened, return an empty array
- If file is opened, read grades of all students and put it in an array and return that array

Usecase 3 (ecommerce.py)

1) Write a Python program that returns the details of items in the shopping cart, including Item price, quantity, and total price for each item.

- The display_cart() function uses the predefined cart items and returns them in form of List which contains each item details as dictionary.
- It adds an additional column, “Total Price”, which is the product of Price and Quantity for each item before returning

2) Write a Python program that performs an analysis of the item prices in the shopping cart, including the minimum price, maximum price, average price of prices.

- The price_analysis() function performs basic statistical analysis on the prices using NumPy:
- Minimum price: The lowest price in the cart.
- Maximum price: The highest price in the cart.
- Average price: The mean of all the item prices.
- These values need to be put in form of dictionary and returned.
- Key for the fields must be “max”, “min”,”mean” .

Execution Steps to Follow:

1. All actions like build, compile, running application,running test cases will bethrough Command Terminal.

2. To open the command terminal the test takers, need to go to Application menu(Three horizontal lines at left top) -> Terminal -> New Terminal

3. This editor Auto Saves the code

4. If you want to exit(logout) and continue the coding later anytime (using Save & Exitoption on Assessment Landing Page) These are time bound assessments the timer would stop if you logout and whilelogging in back using the same credentials the timer would resume from the sametime it was stopped from the previous logout.

5. To setup environment:

You can run the application without importing any packages

6. To launch application:

python3 ecommerce.py

python3 pythonbasics.py
python3 StudentGrade.py

7. To run Test cases:

python3 -m unittest

Screen shot to run the program

```
OK
coder@dighe20250227t070305rz1fj5p3:/home/myproject/dighegmailcom_20250227T070305$ python3 <<scriptname>>.py
```

To run the application

python3 ecommerce.py

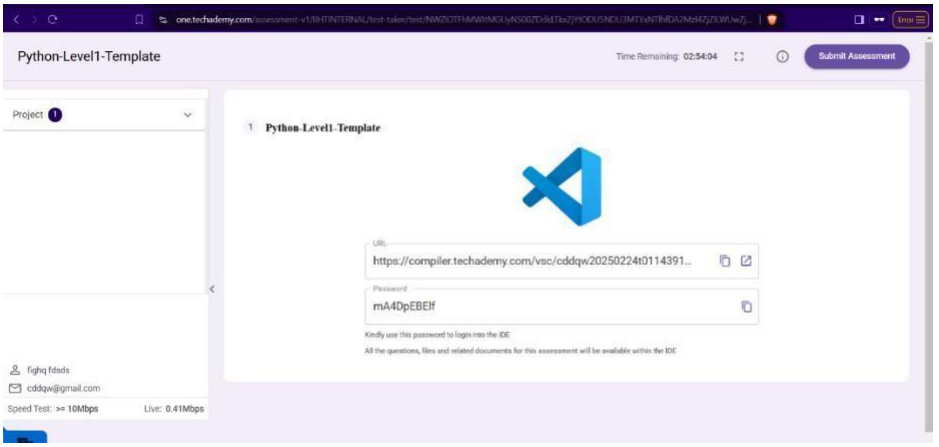
python3 pythonbasics.py

python3 StudentGrade.py

```
coder@dighe20250227t070305rz1fj5p3:/home/myproject/dighegmailcom_20250227T070305$ python3 -m unittest
TestBoundary = Passed
.TestExceptional = Passed
.TestCalculateTotalDonations = Failed
.TestCalculateTotalStockValue = Failed
.TestCheckFrankWhiteDonated = Failed
```

To run the testcase

- **python3 -m unittest**



- **Once you are done with development and ready with submission, you may navigate to the**

previous tab and submit the workspace. It is mandatory to click on “Submit Assessment” after you are done with code.