

Machine Test Set 1

- **Instructions:** Write Python code to solve the following problems. Use any framework you're comfortable with where applicable. Include comments explaining your approach.

1. Reverse Words in a String (30 mins)

- Write a Python function that takes a string as input and returns a new string with the words reversed, but the order of words preserved.
Example: Input: "Hello World Python" → Output: "olleH dlroW nohtyP"
- Constraints: No built-in reverse functions; handle edge cases like empty strings or multiple spaces.

2. Simple REST API with Flask/Django (45 mins)

- Create a REST API with two endpoints:
 - GET /users: Returns a list of users (hardcode 3-5 users with fields: `id`, `name`, `email`).
 - POST /users: Adds a new user (validate that `email` is unique and in proper format).
- Use Flask, Django REST Framework, or FastAPI. Return responses in JSON format.

3. File Processing (45 mins)

- Write a Python script that reads a CSV file containing product data (`product_id`, `name`, `price`) and finds the top 3 most expensive products. Handle cases where the file is missing or malformed.