

Inception BD

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Full Stack Data Science with Generative AI Bootcamp 1.0

Assignment 02

Last Submission Date: 16 November 2025, at 11:59 PM

Assignment Submission Instructions:-

Step 1: Create a new **repository** on your GitHub account.

Step 2: **Upload your code** (the .ipynb file) from your computer to that repository.

Step 3: **Copy the repository link** (the link to your .ipynb file).

Step 4: **Send the link via email** to: learn.inceptionbd@gmail.com

Gmail Format:-

Compose a new email with the following details:

To: learn.inceptionbd@gmail.com

Subject: FSDS with Gen AI Assignment-2 Submission

Body:

Hello, please find my assignment submission at the following GitHub repository link.

Name: Md. Ridoy Hossain

Student ID: 2AE89DFB

Repository Link: <https://github.com/inceptionbd/Computer-Vision>

Best Regards

Md. Ridoy Hossain

1. Email Validator (String Filtering + Loops)

■ **Real-world use:** Used in signup forms or data cleaning tasks.

Task:

Check if a given email is valid — must contain "@" and end with ".com" or ".org".

Example:

Input: hello@inceptionbd.com

Output: Valid Email

2. Count Word Frequency in Customer Reviews

■ **Real-world use:** Analyzing reviews or comments in text analytics.

Task:

Given a review text, count how many times each word appears (ignore case).

Example:

Input: "This product is good and this service is excellent"

Output: {'this': 2, 'product': 1, 'is': 2, 'good': 1, 'and': 1, 'service': 1, 'excellent': 1}

3. Password Strength Checker

■ **Real-world use:** Used in user authentication systems.

Task:

Check if a password is **strong** — must have at least one uppercase, one lowercase, one digit, and one special character.

Example:

Input: "Hello@123"

Output: Strong Password

4. Username Generator

■ **Real-world use:** Automatically create usernames for users.

Task:

Take user's full name and generate a short username.

Rules: first 3 letters of first name + last 3 letters of last name + random number (use loops only).

Example:

Input: "Mamun Malitha"

Output: mamitha57

5. SMS Word Counter

■ **Real-world use:** Used in messaging apps or social media post limit check.

Task:

Count how many characters and words are in a message, and tell if it exceeds 160 characters (SMS limit).

Example:

Input: "This is a demo message."

Output: Words = 5, Characters = 23, Status = Within Limit

6. Remove Duplicates from Contact List

■ **Real-world use:** Data cleaning in CRM or user databases.

Task:

Given a list of names (comma separated), remove duplicates.

Example:

Input: "Rahim, Karim, Rahim, Sultana"

Output: "Rahim, Karim, Sultana"

7. Detect Suspicious Words in Text (Moderation)

Real-world use: Used in chat moderation or email filtering.

Task:

If any “banned” words like `['spam', 'scam', 'fake']` are found in a text, print “Warning”.

Example:

Input: "This is a scam offer"

Output: Warning: Suspicious content detected

8. Invoice Code Formatter

Real-world use: Formatting IDs or codes in finance or ERP systems.

Task:

Given an invoice number like `23`, generate code in the format `INV00023`.

Example:

Input: 23

Output: INV00023

9. Count Hashtags and Mentions (Social Media Analytics)

Real-world use: Used in analyzing social media posts.

Task:

Count how many hashtags (#) and mentions (@) appear in a post.

Example:

Input: "Check out #AIWorkshop and follow @inceptionbd"

Output: Hashtags = 1, Mentions = 1

10. Word Reversal for Data Encryption

■ **Real-world use:** Simple text obfuscation or playful encoding.

Task:

Reverse each word in a sentence while keeping word order the same.

Example:

Input: "AI is fun"

Output: "IA si nuf"