

INFOLABZ IT SERVICES PVT LTD
DATA SCIENCE ASSIGNMENT | 27 FEBRUARY 2025

Create a **Tasks** that does the following:

Task 1:

1. Ask the user for their choice:

- 1 → Capture Image
- 2 → Record Video
- 3 → Open Live Feed
- 4 → Exit

2. Perform actions based on the user's input:

- **If the user selects "Capture Image":**
 - Open the camera.
 - Display a live feed.
 - Ask the user what kind of image they want to capture:
 - '1' → Normal Image (saved as image.jpg).
 - '2' → Blurred Image (saved as blurred_image.jpg).
 - '3' → Mirrored Selfie (saved as selfie.jpg).
 - Save the image and display a message: "Image saved successfully!"
 - Press 'q' to exit the live feed.
- **If the user selects "Record Video":**
 - Open the camera and start recording.
 - Ask the user what type of video they want to record:
 - '1' → Normal Video (normal_video.avi).
 - '2' → Grayscale Video (gray_video.avi).
 - Press 'q' to stop the recording and display "Video saved successfully!"
- **If the user selects "Open Live Feed":**
 - Display a real-time live feed.
 - Allow the user to switch between filters:

- 'g' → Grayscale View.
 - 'b' → Blurred View.
 - 'n' → Normal View.
 - Press 'q' to stop the live feed.
3. **If the user selects "Exit":**
- Display: "Exiting the program. Goodbye!"
 - Close all windows and end the program.

Task 2:

1. Main Menu:
 - Ask the user what they want to do:
 - 1 → Capture Image with a Custom Message
 - 2 → Record Video with a Custom Message
 - 3 → Open Live Feed with a Custom Message
 - 4 → Exit the Program
2. Option 1: Capture Image with a Custom Message
 - Prompt the user:
 - "Enter the message you want to add to the image."
 - "Where do you want to place the message?"
 - Options:
 - 1 → Top-Left
 - 2 → Top-Right
 - 3 → Bottom-Left
 - 4 → Bottom-Right
 - Open the camera and display a live feed with the custom message in the chosen position.
 - When the user presses 'c', capture the image:
 - Save the image as custom_image.jpg.
 - Display the message: "Image captured and saved successfully!"
 - Allow the user to exit the live feed by pressing 'q'.
3. Option 2: Record Video with a Custom Message
 - Prompt the user:
 - "Enter the message you want to add to the video."

- "Where do you want to place the message?"
Options:
 - 1 → Top-Left
 - 2 → Top-Right
 - 3 → Bottom-Left
 - 4 → Bottom-Right
 - Open the camera and start recording the video with the custom message displayed in the chosen position.
 - When the user presses 'q', stop the recording:
 - Save the video as custom_video.avi.
 - Display the message: "Video recorded and saved successfully!"
 - Ensure the video is recorded at 30 FPS with a resolution of 640x480.
4. Option 3: Open Live Feed with a Custom Message
- Prompt the user:
 - "Enter the message to display in the live feed."
 - "Where do you want to place the message?"
 - Options:
 - 1 → Top-Left
 - 2 → Top-Right
 - 3 → Bottom-Left
 - 4 → Bottom-Right
 - Open the camera and display a live feed with the custom message in the chosen position.
 - Allow the user to exit the live feed by pressing 'q'.
 - Display the message: "Live feed ended successfully!" when they exit.
5. Option 4: Exit the Program
- Display: "Exiting the program. Goodbye!"
 - Close all OpenCV windows and terminate the program.