**Bytexl's guided projects**
**Students' User Guide**

Build job relevant skill sets by developing solutions to practical use cases

In about <2 hours>, you can build a project enhancing your job relevant skills as your educator guides through with a specially created hands-on experience available on Bytexl's app.

**INSTRUCTIONS FOR STUDENTS:**

**Project-based Learning Course Overview**

**About the Project**

- Gain practical skills in Google Colab and Docker environments.

**Prerequisites**

- Basic knowledge of Python and familiarity with Docker commands.

**What Will You Learn?**

- You will learn to:
    - Set up and run projects on Google Colab.
    - Use Docker to create reproducible environments for Python projects.

**Skills You Will Practice**

- Google Colab setup and usage
- Containerization with Docker

## Execution Platform: Google Colab and Docker

**Learn and Practice New Skills in Real-World Scenarios**

- Receive detailed instructions from instructors.
- Gain hands-on experience solving real-world case studies.
- Enhance your confidence with projects developed on Google Colab and Docker.

**Steps to Access Your Learning Environment:**

1. **Google Colab Access**
    - Start coding directly without needing a local setup.
    - Run Python code seamlessly on cloud-based GPUs.
2. **Docker**
    - Build and manage Docker containers for development.

- Ensure consistent environments for collaboration and deployment.

**Requirements**

- Access Google Colab on a desktop or laptop.
- Install Docker on your system if you wish to replicate the environment locally.

## Step-by-Step Learning

In this guided project, you will receive a detailed walk-through to complete the project in particular hours.

## Course Objectives

By the end of this project, you will be able to:

- Deploy and test Python code on Google Colab.
- Build and run Docker containers to manage dependencies and run isolated environments.

## Course Structure

This course is divided into three parts:

1. **Course Overview**
   - An introduction to the objectives and expected outcomes.
2. **Project Structure**
   - The project is divided into tasks designed to build specific skills.
3. **Tasks Breakdown**
   - **Task 1**: Setting up Google Colab and running Python scripts.
   - **Task 2**: Building Docker images and running containers.
   - **Task 3**: Integrating Google Colab and Docker for an optimized workflow.

## Expected Outcomes

By completing this project, you will:

- Understand how to use Google Colab and Docker for real-world applications.
- Gain the ability to create and manage Docker containers to deploy code efficiently.

## Quiz

Complete a 10-question quiz to assess your knowledge after finishing the project.

Earn a Certificate: After you have completed the **Drone based Garbage monitoring system for swachh Bharat** hands-on project, you should

- upload your code for it to be assessed
- complete the Quiz to assess your knowledge.

You will earn a certificate if you score 80 % or more.