

# Python Assignment

This exam consists of 2 questions.

Attempt only ONE of the questions. Choose the one that best aligns with your skills and interest.

## Instructions for Medium Blog Submission

1. Project Overview & Technologies:
  - Write a detailed description of your project, including its purpose, features, and the technologies used.
2. Development Process:
  - Explain how you implemented key features, using original code snippets. Ensure no copied code is used.
3. Deployment & Testing:
  - Include a live link to the deployed project, the GitHub repository, and details on plugin testing performed.

### 1. Question 1: Space Invaders Game Using Pygame

Create a classic "Space Invaders" style game using Python and the Pygame library.

#### Key Features:

- Spaceship controlled by the player with horizontal movement.
- Waves of enemy aliens descending from the top.
- Shooting mechanics with bullets fired upward to destroy aliens.
- Scoring system based on aliens defeated.
- Increasing difficulty with levels.
- Sound effects, background music, and a start menu.

### 2. Question 2: Tic-Tac-Toe Game with GUI and Hard-Level AI

Develop a Tic-Tac-Toe game in Python with a graphical user interface (GUI) using tkinter or PyQt5.

#### Key Features:

- 3x3 grid game board with a visually appealing interface.
- Two modes: Player vs Player and Player vs AI.
- AI implemented using the Minimax algorithm.
- Proper game logic for handling win, draw, and invalid moves.
- Restart and exit options, with a scoring system for tracking wins, losses, and draws.

Good luck!