

# JNTUGV College

## PyTech Arena 2026

### Level 2 – Intermediate Round

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## Submission Timings

**Start:** 20-02-2026 at 9:00 PM  
**End:** 22-02-2026 at 04:00 PM

Late submissions will not be accepted.

## How to Submit

- Choose any **2 problems** from the list.
- Create separate folders for each project.
- Upload both projects to your personal GitHub account.
- Repository name format: PyTech-Level2-YourName
- Push all source code, dataset files (if used), and requirements.txt.
- Add a README file explaining:
  - Problem chosen
  - Dataset source
  - How to run the project
- Share your GitHub repository link in the submission form.
- Ensure your project runs without errors.

## Rules and Instructions

- Hardcoding data is strictly prohibited.
- Proper input validation required.
- Clean modular structure expected.
- Plagiarism will lead to disqualification.
- Datasets may be taken from open sources (Kaggle / UCI).
- Mention dataset source clearly in README file.

## Approved Dataset Assets

Participants may use the following datasets:

- **Student Performance Dataset (Classification)**  
<https://www.kaggle.com/datasets/spscientist/students-performance-in-exams>
- **KC House Price Dataset (Regression)**  
<https://www.kaggle.com/datasets/shivachandel/kc-house-data>
- **Sample Sales Dataset (Data Analysis)**  
<https://www.kaggle.com/datasets/kyanyoga/sample-sales-data>

## Problem 1: Student Record Management (CRUD)

- Add student
- View students
- Update student details
- Delete student

## Problem 2: Library Management System (CRUD)

- Add book
- Issue book
- Return book
- Delete book
- View available books

## Problem 3: Student Marks Analyzer (Pandas + Matplotlib)

- Load marks.csv
- Calculate average marks
- Identify highest and lowest scorer
- Generate bar chart and histogram

## Problem 4: Attendance Statistics (NumPy + Matplotlib)

- Load attendance.csv
- Calculate mean and standard deviation
- Identify students below 75%
- Generate pie chart

## Problem 5: Sales Summary Dashboard (Pandas)

- Load sales dataset
- Calculate total sales per product
- Generate line chart
- Export summary report

## Problem 6: Statistical Data Analyzer (NumPy)

- Load numeric dataset
- Calculate mean, median, variance
- Identify max and min values
- Generate line plot and box plot

## Problem 7: Pass/Fail Predictor (ML – Classification)

Using the Student Performance Dataset:

- Create target column (Pass if score  $\geq 40$ , else Fail)
- Split dataset (80% training, 20% testing)
- Train Logistic Regression or Decision Tree
- Display accuracy score
- Predict result for sample input

## Problem 8: House Price Prediction (ML – Regression)

Using KC House Dataset:

- Select feature columns
- Train Linear Regression model
- Display R-squared score
- Predict house price for new input

## Problem 9: Django Student Portal

- User registration and login
- Add / Update / Delete student records
- Use Django ORM
- Display data using templates

## Problem 10: Django Blog Application

- User authentication
- Create / Edit / Delete posts
- Configure admin panel
- Display posts on homepage

## Evaluation Criteria (Per Project – 50 Marks)

- Requirement Coverage – 10 Marks
- Code Structure – 10 Marks
- Logic Implementation – 15 Marks
- Output Correctness – 10 Marks
- Input Validation – 5 Marks

**Total Per Project: 50 Marks**

**Grand Total (Any 2 Projects): 100 Marks**

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