Project Report

Team Members:

1. **Javokhir Yuldoshev** (ID: 12214760) - Team Leader
2. **Sharipov Azizbek**
3. **Asqarov Azizjon**

Project Overview:

Our team collaborated to build a machine learning model using a cascade trainer GUI. The model is designed to distinguish between positive and negative data with high accuracy. Key tasks were divided among the team members to ensure efficiency, high-quality results, and a clear documentation process.

Tasks and Responsibilities:

1. **Data Search** - *Sharipov Azizbek*
    - Searched for and gathered both positive and negative data to support the training process, ensuring a diverse and representative dataset. Also, used images of nature and manually erased images containing humans.
2. **Data Correction** - *Asqarov Azizjon*
    - Processed the raw images to improve the data quality:
        - Converted RGB images to grayscale for enhanced clarity and uniformity. But Also, We did not converted negative images to grey because by this way it gave very astonishing results, which you can see in demo video.
        - Removed any images from the negative dataset that contained features similar to those in the positive dataset, reducing misclassification potential.
3. **Training** - *Javokhir Yuldoshev*
    - Trained the entire dataset using the cascade trainer GUI with specified parameters to achieve the desired accuracy. Multiple training runs were

performed to fine-tune the model.
As team leader, I spent tone of time for waiting to finish process, It was very hard to patient but the result paid all pain. Understood how neighbors , max & min sizes and scaler factors effect to xml model. At the end all, most important thing was selection and number of high quality and clear images.

4. **Report Writing** - *Javokhir Yuldoshev*
    - Documented each step of the project, covering dataset search, data correction, training, and demo preparation. Provided insights into each team member's contributions and the project results.
5. **Demo Creation** - *Asqarov Azizjon*
    - Created a video demonstration to showcase the model's functionality, setup, and output. The demo provides an overview of how the model processes data and classifies images.
6. **Solving Course problem -** *Javokhir Yuldoshev*
    - Calculated min and max detectable sizes with the help of several lines of code, Also detection time per image and face.

Conclusion:

Through collaboration and task-specific delegation, our team successfully developed and trained a xml model find human face with help of Cascade Trainer GUI. Each member's contribution was crucial, from initial data collection and correction to training, documentation, and demo preparation.