**Project Manager Report for LungScanAI: AI-Powered Lung Health Diagnostics**

**1. Evenly Shared Workload by All Team Members**

The team displayed an excellent balance in distributing tasks. Each member was assigned distinct responsibilities that matched their strengths:

* **Abdul Qayyum**: Led data augmentation, DenseNet-201 implementation, Swin Transformer fine-tuning, and performance evaluation. Also took charge of web application development and deployment adjustments.
* **Ume Salma**: Focused on dataset sourcing, defining project objectives, and fine-tuning models such as CheXNet and Vision Transformer. Additionally, handled ensemble learning for improved predictions.
* **Muawaz Saleem**: Managed dataset preprocessing, EfficientNet-B7 implementation, and validation with 10-fold cross-validation. Conducted user testing for deployment feedback.

This clear delineation of roles ensured that no individual was overburdened and that all major project components were adequately addressed.

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**3. Ability to Adapt to Unexpected Issues and Challenges**

The team demonstrated flexibility in addressing challenges:

* **Challenge**: Limited diversity in datasets during the initial collection phase.
  + **Solution**: Augmented the dataset using SMOTE, synthetic image generation, and balancing techniques.
* **Challenge**: Fine-tuning pre-trained models for disease-specific detection.
  + **Solution**: Leveraged advanced optimization techniques like Adam and ensemble learning for better accuracy.
* **Challenge**: Deployment platform usability.
  + **Solution**: Iteratively tested the platform with user feedback and improved its functionality.

These adaptive measures highlight the team's problem-solving skills and commitment to quality.

**4. Reached Desired Milestones in a Timely Manner (According to WBS Form)**

The project followed its schedule as outlined in the **Work Breakdown Structure (WBS)**:

* **Phase 1 (Day 1-2)**: Successfully defined objectives, finalized datasets/tools, and assigned roles.
* **Phase 2 (Day 3-4)**: Completed dataset collection, augmentation, and splitting into training, validation, and test sets.
* **Phase 3 (Day 5-7)**: Implemented and fine-tuned models (CheXNet, DenseNet-201, ViT, Swin Transformer, EfficientNet-B7), achieving strong preliminary results.
* **Phase 4 (Day 7-8)**: Validated models with 10-fold cross-validation, applied ensemble learning, and ensured explainability features were integrated.
* **Phase 5 (Day 9-10)**: Deployed the web-based platform, conducted user testing, and incorporated feedback.

The adherence to milestones ensured that the project was delivered within the expected timeline.