Testing Report

Project: Deepfake Detection System using MesoNet

Team Members: [Your Names]

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# 1. Introduction

This testing report documents the testing process carried out for the Deepfake Detection System. The goal was to ensure that both image and video inputs are processed accurately, and the system performs as expected under various conditions.

# 2. Scope of Testing

- Image Upload and Analysis  
- Video Upload and Aggregated Prediction  
- Model Confidence Output  
- Error Handling  
- Database Logging  
- UI Functionality

# 3. Testing Approach

Testing Types Used:

* **Unit Testing**: Individual functions and classes
* **Integration Testing**: Model + Upload + UI + DB interactions
* **System Testing**: Full application test from start to end
* **Manual Testing**: For file uploads and result checking
* **Negative Testing**: Corrupt files, unsupported formats, missing files

# 4. Test Environment

| **Component** | **Details** |
| --- | --- |
| Platform | Windows/Linux/macOS |
| Framework | Flask |
| Language | Python |
| Frontend | HTML/CSS (basic) |
| Database | PostgreSQL / MySQL |
| Model | MesoNet (Pre-trained/Custom) |
| Testing Tools | Manual, PyTest (optional) |

# 5. Test Cases

| **Test Case ID** | **Module** | **Input File** | **Expected Output** | **Actual Output** | **Status** |
| --- | --- | --- | --- | --- | --- |
| TC001 | Image Upload | valid\_image.jpg | Predicted label + confidence score | Predicted label: FAKE (98.2%) | Pass |
| TC002 | Image Upload | corrupted\_image.jpg | Error message | “Invalid or unreadable image” | Pass |
| TC003 | Video Upload | valid\_video.mp4 | Final prediction with confidence | Real (92.3%) | Pass |
| TC004 | Video Upload | long\_video.mp4 | Processing time + output | System slowdown, result shown | Pass |
| TC005 | Upload | file.txt | “Unsupported file type” error | Error shown correctly | Pass |
| TC006 | DB Logging | successful run | Log saved in database | Entry added with filename + result | Pass |
| TC007 | Image Upload | blank image | Low confidence or error | “Prediction: Uncertain (50%)” | Pass |
| TC008 | UI | Click without file | “No file selected” warning | Warning shown | Pass |

# 6. Bug Summary

| **Bug ID** | **Description** | **Severity** | **Status** |
| --- | --- | --- | --- |
| B001 | Video upload of >100MB crashes server | High | Fixed |
| B002 | No error on invalid extension | Medium | Fixed |
| B003 | DB not logging some entries | Medium | Fixed |

# 7. Test Summary

| **Metric** | **Value** |
| --- | --- |
| Total Test Cases | 8 |
| Passed | 8 |
| Failed | 0 |
| Bug Reports | 3 (All fixed) |
| Code Coverage (est.) | ~80% (manual check) |

# 8. Conclusion

The system has passed all functional test cases, including edge cases like invalid formats and corrupt inputs. Minor bugs were identified and resolved. The Deepfake Detection System is **ready for deployment/testing** under controlled real-world scenarios.