Features Implemented

1. Feedback Modal System

- **Interactive 5-star rating component** with hover effects
- **Optional comment field** with 500-character limit
- **Form validation** and error handling
- **Responsive design** for mobile and desktop
- **Real-time feedback submission** to backend API

2. Statistics Dashboard

- **Overview cards** displaying total quizzes and flashcards
- **Average rating calculation** with color-coded display
- **Recent feedback entries** (5 most recent)
- **Summary analytics** with user satisfaction metrics
- **Refresh functionality** for real-time data updates

3. Toast Notification System

- **Success notifications** for feedback submissions
- **Animated toast messages** with auto-dismiss
- **Multiple notification types** (success, error, warning, info)
- **Custom hook** for toast management

4. Enhanced Navigation

- **React Router** implementation for page navigation
- **Active navigation indicators** with smooth transitions
- **Responsive navigation bar** with mobile support

5. Backend API Endpoints

- **POST /feedback** - Submit user ratings and comments
- **GET /stats** - Retrieve dashboard statistics
- **Enhanced error handling** and validation

Files Created/Modified

New Frontend Files

```
Frontend/src/components/
├── FeedbackModal.css
├── StatsPage.js
├── StatsPage.css
├── Toast.js
├── Toast.css
└── FlashcardTestPage.css
```

Modified Frontend Files

```
Frontend/src/
├── App.js (updated with navigation)
├── App.css (updated with global styling)
├── FlashcardTestPage.js (integrated feedback)
└── components/Feedbackmodel.js (enhanced modal)
```

Backend Files

```
Backend/
└── app.py (added feedback routes)
```

Database Schema

Feedback Collection

json
```json
{
  "type": "quiz" | "flashcard",
  "item_id": "string",
  "rating": 1-5,
  "comment": "optional string",
```

```
  "created_at": "datetime"
}
```

Errors Resolved

1. Module Resolution Errors

Error: `Can't resolve 'react-router-dom'` and `Can't resolve 'axios'` **Solution:** Installed missing frontend dependencies using npm

2. Backend Import Errors

Error: `ModuleNotFoundError: No module named 'together'` and `'fitz'` **Solution:** Installed required Python packages using pip

3. Node Modules Deletion Issues

Error: Slow node_modules deletion on Windows **Solution:** Used PowerShell commands and proper Windows file handling

4. Database Connection

Error: MongoDB connection issues **Solution:** Utilized existing MongoDB Atlas cloud connection

5. CORS Configuration

Error: Cross-origin request blocked **Solution:** Configured Flask-CORS for frontend-backend communication

API Endpoints

Feedback Submission

http

```http
POST /feedback
Content-Type: application/json

{
  "type": "flashcard",
  "item_id": "flashcard_session_123",
  "rating": 5,
  "comment": "Great content!"
}
```

Statistics Retrieval

http
```
GET /stats

Response:
{
  "total_quizzes": 10,
  "total_flashcards": 15,
  "avg_rating": 4.2,
  "recent_feedback": [...]
}
```