Event Reports Documentation

Report Types Implemented

1. Event Popularity Report

Purpose: Identify most popular events by registration count

Data Source: Event registrations table

Key Metrics:

- Total registrations per event

- Event type classification

- Registration percentage vs capacity

Sample Output:
```
Rank | Event Name              | Type      | Registrations | Fill Rate

-----|-------------------------|-----------|---------------|----------

1    | Career Fair 2024        | Fest      | 200           | 67%

2    | AI/ML Hackathon         | Hackathon | 120           | 80%

3    | Tech Talk: Future       | Tech Talk | 85            | 85%
```

2. Student Participation Report

Purpose: Track individual student engagement

Data Source: Student registrations and attendance

Key Metrics:

- Events attended vs registered

- Attendance percentage

- Participation trends

Sample Output:
```

```
Student Name    | Registered | Attended | Attendance Rate

----------------|------------|----------|----------------

Alice Johnson   | 10         | 8        | 80%

Eva Brown       | 12         | 9        | 75%

Carol Davis     | 9          | 7        | 78%
```

3. Top Active Students (Bonus)

Purpose: Recognize most engaged students

Data Source: Attendance records

Key Metrics:

- Total events attended

- Achievement badges

- Recognition levels

Sample Output:
```
Rank | Student Name   | Events | Badge

-----|----------------|--------|------------------

🥇   | Eva Brown      | 9      | Event Enthusiast

🥈   | Alice Johnson  | 8      | Super Learner

🥉   | Carol Davis    | 7      | Active Participant
```

4. Event Type Distribution

Purpose: Analyze event category preferences

Data Source: Events table

Key Metrics:

- Count by event type

- Percentage distribution

- Trend analysis

Sample Output:

```
Event Type | Count | Percentage

-----------|-------|----------

Workshop  | 15   | 36%

Seminar   | 12   | 29%

Hackathon | 8    | 19%

Tech Talk | 4    | 10%

Fest      | 3    | 7%
```

Flexible Reporting Features

Filter Options

- **By Event Type**: Workshop, Seminar, Hackathon, Tech Talk, Fest

- **By Date Range**: Custom date filtering

- **By College**: Multi-college support

- **By Semester**: Academic period filtering

Export Capabilities

- **CSV Export**: Raw data for external analysis

- **PDF Reports**: Formatted professional reports

- **JSON API**: Programmatic access to data

Real-time Analytics

- **Live Registration Counts**: Real-time capacity monitoring

- **Dashboard Metrics**: Key performance indicators

- **Trend Analysis**: Historical data comparison

Report Generation Process

1. Data Collection

```sql
-- Example: Event popularity data collection
SELECT
  e.title,
  e.type,
  COUNT(er.student_id) as registrations,
  ROUND(AVG(ef.rating), 2) as avg_rating
FROM events e
LEFT JOIN event_registrations er ON e.id = er.event_id
LEFT JOIN event_feedback ef ON e.id = ef.event_id
WHERE e.college_id = ?
GROUP BY e.id
ORDER BY registrations DESC;
```

2. Data Processing

- Aggregate registration counts

- Calculate attendance percentages

- Determine rankings and badges

- Format data for visualization

3. Report Generation

- Generate charts and graphs

- Create formatted tables

- Apply styling and branding

- Export in requested format

Key Performance Indicators (KPIs)

Event Success Metrics

- **Registration Fill Rate**: (Registrations / Capacity) × 100

- **Attendance Rate**: (Attended / Registered) × 100

- **Average Rating**: Mean feedback score (1-5 stars)

- **No-Show Rate**: (Registered - Attended) / Registered × 100

Student Engagement Metrics

- **Active Students**: Students with >3 events attended

- **Retention Rate**: Students attending multiple events

- **Participation Growth**: Semester-over-semester comparison

Operational Metrics

- **Event Utilization**: Average capacity utilization

- **Popular Time Slots**: Peak registration periods

- **Event Type Preferences**: Most requested categories

- **Geographic Distribution**: Campus location preferences

Advanced Analytics (Future Enhancement)

Predictive Analytics

- **Demand Forecasting**: Predict event popularity

- **Optimal Capacity**: Recommend event sizes

- **Best Time Slots**: Data-driven scheduling

Behavioral Analysis

- **Student Preferences**: Event type correlations

- **Engagement Patterns**: Attendance trends

- **Churn Analysis**: Student dropout patterns

Performance Benchmarking

- **Cross-College Comparison**: Multi-campus analytics

- **Historical Trends**: Year-over-year growth

- **Industry Standards**: External benchmarking

Usage Instructions

For Administrators

1. **Access Reports**: Navigate to Admin → Reports

2. **Select Report Type**: Choose from available reports

3. **Apply Filters**: Set date range, event type, etc.

4. **Export Data**: Download in preferred format

5. **Schedule Reports**: Set up automated generation

For Data Analysis

1. **Raw Data Access**: Use API endpoints for custom analysis

2. **Database Queries**: Direct SQL access for complex reports

3. **Integration**: Connect with BI tools (Tableau, Power BI)