

# UTM Campus Assistant Chatbot - Administrator Manual

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## System Overview

The UTM Campus Assistant Chatbot is a web-based facility management system that helps students report issues, book facilities, and get information through an AI-powered chatbot.

## Key Features

- **Issue Reporting:** Students can report facility problems (electrical, hygiene, structural, equipment, security)
- **Facility Booking:** Students request facility bookings, admins approve/reject
- **AI Chatbot:** Natural language interface for facility information and assistance
- **Admin Dashboard:** Complete management interface for all system operations

## User Roles

- **Students:** Report issues, book facilities, use chatbot
- **Admins:** Manage issues, approve bookings, oversee system operations

## Technical Components

- **Frontend:** Flask web application with Bootstrap 5 dark theme
- **Backend:** Python Flask with PostgreSQL database

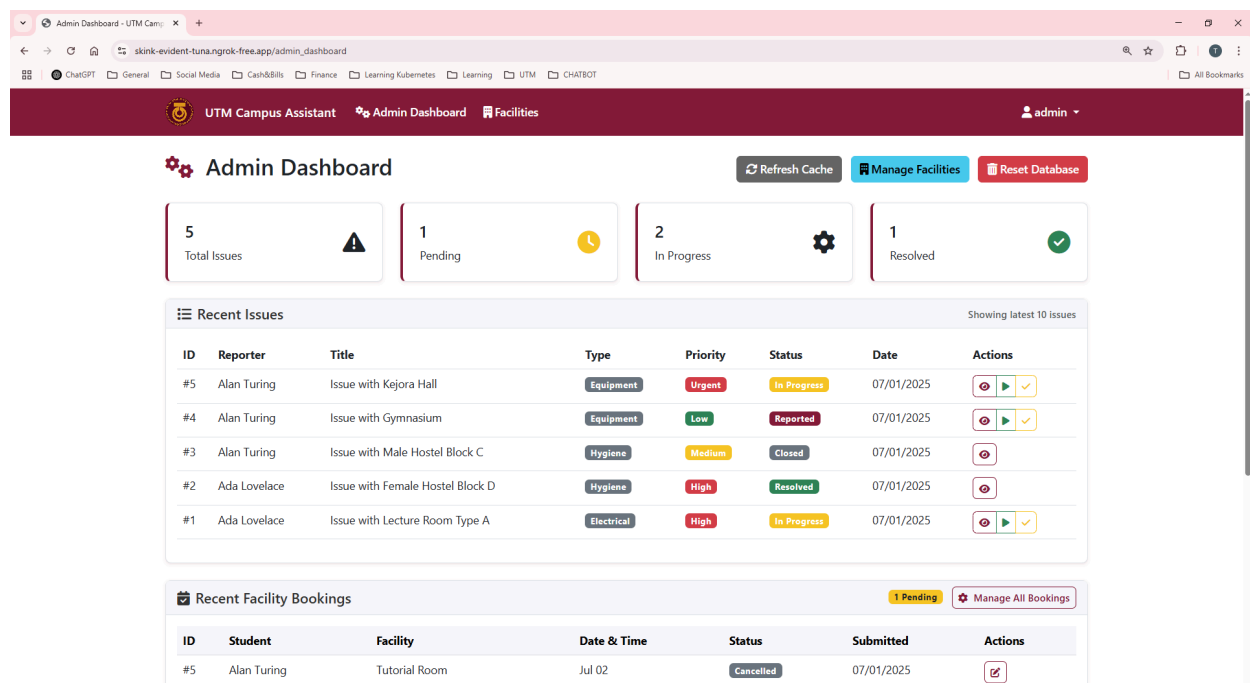
- **AI Service:** DeepSeek LLM for natural language processing
- **Authentication:** Role-based access with encrypted passwords

## Getting Started

### Accessing the Admin Dashboard

1. **Login:** Navigate to the application URL and click "Login"
2. **Credentials:** Use your admin account username and password
3. **Dashboard:** After login, you'll see the admin dashboard with system statistics

### Admin Dashboard Features



The dashboard provides:












- **System Statistics:** Active issues, bookings, user counts
- **Quick Actions:** Direct links to common tasks
- **Recent Activity:** Latest system events
- **Navigation Menu:** Access to all admin functions

### First-Time Setup

1. **Create Admin Account:** Register with "Admin" role during initial setup
2. **Review Sample Data:** System includes sample facilities and test data
3. **Configure AI Service:** Ensure DeepSeek LLM is running (default: localhost:11434)
4. **Test Features:** Verify issue reporting, booking system, and chatbot functionality

# Managing Issues

## Issue Workflow

Recent Issues							Showing latest 10 Issues
ID	Reporter	Title	Type	Priority	Status	Date	Actions
#5	Alan Turing	Issue with Kejora Hall	Equipment	Urgent	In Progress	07/01/2025	  
#4	Alan Turing	Issue with Gymnasium	Equipment	Low	Reported	07/01/2025	  
#3	Alan Turing	Issue with Male Hostel Block C	Hygiene	Medium	Closed	07/01/2025	
#2	Ada Lovelace	Issue with Female Hostel Block D	Hygiene	High	Resolved	07/01/2025	
#1	Ada Lovelace	Issue with Lecture Room Type A	Electrical	High	In Progress	07/01/2025	  

Issues follow this lifecycle:

REPORTED → IN\_PROGRESS → RESOLVED → CLOSED

## Viewing and Managing Issues

1. **Issues List:** Access via "Manage Issues" in admin dashboard
2. **Filtering:** Sort by status, priority, category, or assignment
3. **Issue Details:** Click any issue to view full information

Issue #5: Issue with Kejora Hall

Type: Equipment

Location: N28a, FC

Created: 2025-07-01 16:23

Description:  
The lights and mic are not working. I need to give a thesis presentation to Dr Shasha soon, please help to fix immediately.

Admin Notes:  
I have sent technicians to check on the issues, will be done today.

Priority: Urgent

Reported by: Alan Turing

Last Updated: 2025-07-01 16:26

In Progress

Actions

Update Status

In Progress

Admin Notes

I have sent technicians to check on the issues, will be done today.

Update Issue

Back to Dashboard

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Enhancing campus facility management through AI

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## Issue Classification System

Category	Examples	Typical Priority	Response Time
Electrical	Power outages, faulty outlets	HIGH/URGENT	2-4 hours
Hygiene	Cleaning, sanitation	MEDIUM	24 hours
Structural	Building damage, leaks	HIGH	4-8 hours
Equipment	Broken lab equipment	MEDIUM/HIGH	8-24 hours
Security	Access control, locks	HIGH/URGENT	1-2 hours
Other	General maintenance	LOW/MEDIUM	48 hours

## Processing Issues

1. **Review:** Check AI-generated classification and priority
2. **Assign:** Assign to yourself or technician
3. **Update Status:** Move through workflow stages
4. **Add Notes:** Document actions taken and progress
5. **Resolve:** Mark complete when fixed
6. **Close:** Final closure after student feedback

# Facility Management

## Facility Information System

### Adding New Facilities:

1. Navigate to "Manage Facilities"
2. Click "Add New Facility"
3. Complete required information:
  - Name and category
  - Location and capacity
  - Operating hours
  - Booking availability

### Facility Categories:

- Laboratory (research and teaching labs)
- Academic (classrooms, lecture halls)
- Sports (gymnasiums, fields, courts)
- Administrative (offices, meeting rooms)

- Accommodation (dormitories)
- Dining (cafeterias, food courts)
- Event (auditoriums, conference centers)

## Booking Management

Manage Bookings - UTM Cam...  
skink-evident-tunangrok-free.app/manage\_bookings

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Manage Facility BookingsView FacilitiesBack to Dashboard

1Pending Approval

2Approved

5Total Bookings

5Facilities Booked

All Facility Bookings

ID	Facility	Student	Date & Time	Duration	Purpose	Status	Submitted	Actions
#3	Gymnasium Sports Complex	Alan Turing alan_turing	Jun 23, 2026 08:00 - 09:00	1h	I need to gain muscle to learn...	Approved	07/01/25	
#2	CCNP Network Lab Level 4 N28, FC	Ada Lovelace ada_lovelace	Dec 25, 2025 12:00 - 13:00	1h	To celebrate Christmas by solv...	Rejected	07/01/25	
#1	Computer Lab N28 & N28a, FC	Ada Lovelace ada_lovelace	Dec 10, 2025 08:00 - 09:00	1h	To practice on solving compute...	Approved	07/01/25	
#4	Kejora Hall N28a, FC	Alan Turing alan_turing	Sep 08, 2025 08:00 - 22:00	14h	I need to present my AI thesis...	Pending	07/01/25	
#5	Tutorial Room Level 1 N28a, FC	Alan Turing alan_turing	Jul 02, 2025 08:00 - 22:00	14h	I need to do some tutorials to...	Cancelled	07/01/25	

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### Booking Approval Process:

1. Review Requests: Check pending booking requests
2. Evaluate: Verify availability, purpose, and user credentials
3. Decision: Approve, reject, or keep pending

Update Booking - UTM Cam...  
skink-evident-tunangrok-free.app/update\_booking/4

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Update Booking #4

Booking Details

Facility: Kejora Hall

Location: N28a, FC

Student: Alan Turing (alan\_turing)

Purpose:  
I need to present my AI thesis to Dr Shasha. This research will change the whole world.

Submitted on July 01, 2025 at 04:18 PM

Date: September 08, 2025

Time: 08:00 - 22:00

Duration: 14 hours

Status

Pending

Admin Notes

Add notes about this booking decision...

Back to Bookings

Update Booking

### Booking Actions:

- **APPROVED:** Confirm booking with optional notes
- **REJECTED:** Decline with reason for student
- **PENDING:** Keep under review
- **CANCELLED:** Handle user cancellations

## Conflict Resolution

### Common Conflicts:

- Time overlaps for same facility
- Capacity exceeded
- Maintenance during booking
- Policy violations

### Resolution Strategies:

- Contact students for alternative times
- Suggest similar facilities
- Implement waiting lists
- Create priority systems

## Troubleshooting

### Common Issues and Solutions

#### Application Won't Start

```
# Check database connection
pg_isready -h localhost -p 5432

# Verify environment variables
echo $DATABASE_URL
echo $SESSION_SECRET

# Kill conflicting processes
pkill -f gunicorn
```

#### Database Issues

```
# Recreate tables if needed
python -c "from flask_app import app, db; app.app_context().push(); db.create_all"
```

```
# Reset to clean state (admin interface)
# Access /admin/reset-database
```

## AI Service Problems

```
◀ # Check DeepSeek LLM service
curl http://localhost:11434/v1/models

# Restart Ollama service
pkill ollama
ollama serve ▶
```

## Login/Authentication Issues

- Check user exists in database
- Verify password hash format
- Clear browser cookies
- Check session configuration

## Performance Issues

- Monitor memory usage: `htop`
- Check database query performance
- Verify AI service response times
- Optimize database connections

## Emergency Procedures

### Complete System Down:

1. Check service status: `systemctl status postgresql`
2. Restart services: `sudo systemctl restart postgresql`
3. Restart application: `gunicorn --bind 0.0.0.0:5000 main:app`

### Data Recovery:

1. Stop application: `pkill gunicorn`
2. Restore database: `psql utm_campus_assistant < backup_latest.sql`
3. Verify restoration: Check table counts and user accounts
4. Restart application

## Monitoring Checklist

### Daily Tasks:

- Review new issue reports
- Process pending facility bookings
- Monitor system performance
- Check AI service health

### Weekly Tasks:

- Analyze facility usage patterns
- Review user feedback
- Update facility information
- Generate utilization reports

### Monthly Tasks:

- Database maintenance
- Security audit
- Backup verification
- Performance optimization

## Getting Help

### When to Escalate:

- Security incidents
- Data corruption
- System performance severely degraded
- Multiple component failures
- Unable to resolve within 2 hours

### Support Information to Provide:

- Problem description
- Steps already attempted
- Error messages and logs
- System configuration
- User impact assessment

## Quick Reference

### Key URLs



- **Main Application:** `http://localhost:5000`
- **Admin Dashboard:** `/admin/dashboard`
- **Issue Management:** `/admin/issues`
- **Booking Management:** `/admin/bookings`
- **Database Reset:** `/admin/reset-database`

## Important Files

- **Configuration:** `flask_app.py`
- **Database Models:** `models.py`
- **AI Service:** `ai_service.py`
- **Routes:** `routes.py`
- **Forms:** `forms.py`

## Environment Variables

```
DATABASE_URL="postgresql://user:pass@host:port/database"
SESSION_SECRET="your-secret-key"
DEEPSEEK_API_URL="http://localhost:11434/v1/chat/completions"
DEEPSEEK_MODEL="deepseek-r1:7b"
```

## Default Admin Account

- **Username:** `admin`
- **Email:** `admin@utm.edu.my`
- **Role:** `Admin`
- **Note:** Set secure password during registration

*This manual covers the essential administrative functions of the UTM Campus Assistant Chatbot. For detailed technical documentation, refer to the complete Sphinx documentation.*