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1 REF Manager v2.0 - Troubleshooting Guide

Problem Solving and Solutions

Version: 2.0.0

Last Updated: November 3, 2025

1.1 Quick Problem Finder

Installation Issues - Python version problems - Package installation failures - Virtual environment errors

Runtime Errors - Server won't start - Database errors - Permission denied

Feature-Specific - CSV import failures - Excel export problems - PDF upload issues
- Login problems

Performance - Slow loading - Database queries

1.2 Installation Issues

1.2.1 Python Version Issues

Problem: Wrong Python version or Python 3.13 compatibility errors

Error Messages:

TypeError: unsupported operand type(s) for *: 'decimal.Decimal' and 'float'

Solution: 1. Check Python version: bash python3 --version Should be 3.10 or higher.

2. If you have Python 3.13, the decimal issue is fixed in v2.0. Update to latest code.
3. For decimal errors in required_outputs:

```
# In models.py, change:  
return self.fte * 2.5  
# To:  
return float(self.fte) * 2.5
```

1.2.2 Package Installation Failures

Problem: pip install fails

Error Messages:

ERROR: Could not install packages due to an EnvironmentError

Solutions:**For Python 3.13:**

```
pip install --break-system-packages -r requirements.txt
```

For permission errors:

```
pip install --user -r requirements.txt
```

For specific package failures:

```
# Update pip first  
pip install --upgrade pip
```

```
# Install packages one by one to identify problem  
pip install Django==4.2.0  
pip install django-crispy-forms==2.0  
# etc.
```

For PostgreSQL adapter issues:

```
# Install PostgreSQL development files first  
sudo apt-get install libpq-dev python3-dev  
  
# Then install psycopg2  
pip install psycopg2-binary
```

1.2.3 Virtual Environment Errors

Problem: Virtual environment not activating

Solutions:**Linux/macOS:**

```
# Create fresh venv  
rm -rf venv  
python3 -m venv venv  
source venv/bin/activate
```

Windows:

```
# Create fresh venv  
rmdir /s venv  
python -m venv venv  
venv\Scripts\activate
```

If activation still fails:

```
# Check Python venv module is installed  
python3 -m pip install virtualenv
```

```
# Use virtualenv instead  
virtualenv venv  
source venv/bin/activate
```

1.3 □ Runtime Errors

1.3.1 Server Won't Start

Problem: python manage.py runserver fails

Error 1: Port already in use

Error: That port is already in use.

Solution:

```
# Find process using port 8000
lsof -i :8000
```

```
# Kill the process
kill -9 PID
```

```
# Or use different port
python manage.py runserver 8001
```

Error 2: Import errors

ModuleNotFoundError: No module named 'crispy_forms'

Solution:

```
# Ensure virtual environment is activated
source venv/bin/activate
```

```
# Reinstall requirements
pip install -r requirements.txt
```

Error 3: Settings errors

django.core.exceptions.ImproperlyConfigured: The SECRET_KEY setting must not be empty

Solution:

```
# Check .env file exists
ls -la .env
```

```
# Generate new SECRET_KEY
python -c "from django.core.management.utils import get_random_secret_key; print(g"
```

```
# Add to .env file
echo "SECRET_KEY=generated-key-here" >> .env
```

1.3.2 Database Errors

Problem: Database migrations fail

Error: No such table

django.db.utils.OperationalError: no such table: core_colleague

Solution:

```
# Run migrations
python manage.py migrate

# If that fails, try:
python manage.py migrate --run-syncdb
```

Error: Migration conflicts

```
django.db.migrations.exceptions.InconsistentMigrationHistory
```

Solution:

```
# Show migrations
python manage.py showmigrations

# Fake problematic migration
python manage.py migrate core --fake 0001

# Then run normally
python manage.py migrate
```

Error: PostgreSQL connection refused

```
FATAL: password authentication failed for user "ref_manager_user"
```

Solution:

```
# Check PostgreSQL is running
sudo systemctl status postgresql

# Start if needed
sudo systemctl start postgresql

# Reset password
sudo -u postgres psql
ALTER USER ref_manager_user WITH PASSWORD 'new_password';
\q

# Update .env file with new password
```

1.3.3 Permission Denied Errors

Problem: Can't access files or database

Error:

```
PermissionError: [Errno 13] Permission denied: '/path/to/file'
```

Solutions:

For database file:

```
# SQLite database
chmod 664 db.sqlite3
chmod 775 .
```

For media files:

```
chmod -R 755 media/
```

For logs:

```
mkdir -p logs  
chmod 775 logs
```

1.4 □ Feature-Specific Issues

1.4.1 CSV Import Issues

Problem: CSV import fails or gives errors

Error 1: Encoding problems

UnicodeDecodeError: 'utf-8' codec can't decode byte

Solution:

```
# Save CSV as UTF-8 in Excel:  
# File → Save As → CSV UTF-8 (Comma delimited) (.csv)
```

```
# Or convert existing file:  
iconv -f ISO-8859-1 -t UTF-8 oldfile.csv > newfile.csv
```

Error 2: Missing required columns

ValidationError: Missing required columns: title, all_authors

Solution: - Download CSV template from import page - Ensure all required columns present: - title - all_authors - publication_venue - publication_type - publication_date - quality_rating - author_email - uoa - ref_eligible

Error 3: Date format errors

ValidationError: Invalid date format

Solution: - Use YYYY-MM-DD format: 2025-01-15 - Not DD/MM/YYYY or MM/DD/YYYY

Error 4: Email not matching colleague

Warning: No colleague found with email: x@example.com

Solution: - Ensure colleague exists in system first - Check email spelling matches exactly - Or add colleague before import

Error 5: Quality rating invalid

ValidationError: Quality rating must be 0, 1, 2, 3, or 4

Solution: - Use numbers only: 0, 1, 2, 3, or 4 - 0 = Unclassified - 4 = 4* (World-Leading)

1.4.2 Excel Export Issues

Problem: Excel export fails or links don't work

Error 1: Export button does nothing

Check browser console for JavaScript errors

Solution:

```
# Reinstall openpyxl  
pip install --force-reinstall openpyxl  
  
# Check version  
pip show openpyxl  
# Should be 3.1.2+
```

Error 2: Links not clickable

Solution: - Ensure PDFs are uploaded for outputs - Check PDF files are accessible - Verify file paths in media directory

Error 3: File download fails

Solution:

```
# Check disk space  
df -h  
  
# Check permissions  
ls -la media/pdfs/  
  
# Check media URL in settings  
python manage.py shell  
>>> from django.conf import settings  
>>> print(settings.MEDIA_ROOT)  
>>> print(settings.MEDIA_URL)
```

1.4.3 PDF Upload Issues

Problem: Can't upload PDF files

Error 1: File too large

RequestDataTooBig: The request's size exceeds the maximum allowed

Solution:

```
# In settings.py, add:  
DATA_UPLOAD_MAX_MEMORY_SIZE = 20971520 # 20MB  
FILE_UPLOAD_MAX_MEMORY_SIZE = 20971520 # 20MB
```

For Nginx:

```
# In nginx config  
client_max_body_size 20M;
```

Error 2: Invalid file type

ValidationError: Only PDF files allowed

Solution: - Ensure file extension is .pdf - Check file is actually PDF (not renamed) - Maximum 20MB per file

Error 3: Upload directory not writable

```
PermissionError: [Errno 13] Permission denied: '/path/to/media/pdfs/'
```

Solution:

```
mkdir -p media/pdfs  
chmod -R 755 media  
chown -R your-username:your-username media
```

1.4.4 Authentication Issues

Problem: Can't log in

Error 1: Forgot password

Solution:

```
# Reset password via command line  
python manage.py changepassword username
```

Error 2: User doesn't exist

Solution:

```
# Create new user  
python manage.py createsuperuser
```

```
# Or create via shell  
python manage.py shell  
>>> from django.contrib.auth.models import User  
>>> User.objects.create_user('username', 'email@example.com', 'password')
```

Error 3: Session expired

Solution: - Just log in again - To extend sessions, in settings.py:

```
SESSION_COOKIE_AGE = 86400 # 24 hours
```

1.5 ↴ Performance Issues

1.5.1 Slow Loading

Problem: Pages load slowly

Diagnosis:

```
# Enable Django Debug Toolbar  
pip install django-debug-toolbar
```

```
# Add to INSTALLED_APPS in settings.py  
INSTALLED_APPS = [  
    # ...  
    'debug_toolbar',  
]
```

```

# Add to MIDDLEWARE
MIDDLEWARE = [
    # ...
    'debug_toolbar.middleware.DebugToolbarMiddleware',
]

# Add to urls.py
import debug_toolbar
urlpatterns = [
    # ...
    path('__debug__/', include(debug_toolbar.urls)),
]

# Set INTERNAL_IPS
INTERNAL_IPS = ['127.0.0.1']

```

Solutions:

1. Database query optimization:

```

# Use select_related for foreign keys
colleagues = Colleague.objects.select_related('user').all()

# Use prefetch_related for reverse relationships
colleagues = Colleague.objects.prefetch_related('outputs').all()

```

2. Add database indexes:

```

python manage.py makemigrations
python manage.py migrate

```

3. Enable caching:

```

# settings.py
CACHES = {
    'default': {
        'BACKEND': 'django.core.cache.backends.locmem.LocMemCache',
        'LOCATION': 'unique-snowflake',
    }
}

```

1.5.2 Slow Database Queries

Problem: Database queries taking too long

Diagnosis:

```

# Enable query logging
# settings.py
LOGGING = {
    'version': 1,
    'handlers': {
        'console': {
            'class': 'logging.StreamHandler',

```

```

        },
    },
    'loggers': {
        'django.db.backends': {
            'handlers': ['console'],
            'level': 'DEBUG',
        },
    },
}

```

Solutions:

1. Reduce number of queries:

```

# Bad - N+1 queries
for colleague in Colleague.objects.all():
    print(colleague.user.username)

# Good - 2 queries
for colleague in Colleague.objects.select_related('user'):
    print(colleague.user.username)

```

2. Use aggregation:

```

from django.db.models import Count

# Bad
for colleague in Colleague.objects.all():
    count = colleague.outputs.count()

# Good
colleagues = Colleague.objects.annotate(
    output_count=Count('outputs')
)

```

3. Switch to PostgreSQL for large datasets

1.6 □ Data Issues

1.6.1 Category Field Inconsistencies

Problem: Categories stored with both hyphens and underscores

Error:

Colleague shows 'non-independent' in database but 'non_independent' in code

Solution:

```

# Run data migration
python manage.py shell

from core.models import Colleague

```

```

# Fix hyphenated entries
colleagues      =     Colleague.objects.filter(colleague_category='non-
independent')
for c in colleagues:
    c.colleague_category = 'non_independent'
    c.save()

print(f"Fixed {colleagues.count()} colleagues")

```

1.6.2 Missing Dropdowns

Problem: Colleague categories or status not showing in forms

Solution:

1. Check model choices are correct:

```

# In models.py
COLLEAGUE_CATEGORY_CHOICES = [
    ('non_independent', 'Non-Independent Researcher'),
    # Ensure underscore, not hyphen
]

```

2. Run migrations:

```

python manage.py makemigrations
python manage.py migrate

```

3. Clear browser cache: - Ctrl+Shift+R (hard refresh) - Or clear all cache

4. Collect static files:

```

python manage.py collectstatic --clear --noinput

```

1.7 System Service Issues

Problem: Systemd service won't start

Error:

```

Job for ref-manager.service failed

```

Diagnosis:

```

# Check service status
sudo systemctl status ref-manager

```

```

# View logs
sudo journalctl -u ref-manager -n 50

```

Common Issues:

1. Wrong username in service file

```
# /etc/systemd/system/ref-manager.service
[Service]
User=CORRECT_USERNAME # Must match your actual username
```

2. Wrong paths

```
WorkingDirectory=/home/CORRECT_USERNAME/ref-project-app/ref-manager
ExecStart=/home/CORRECT_USERNAME/ref-project-app/ref-manager/venv/bin/gunicorn .
```

3. Virtual environment not activated

```
Environment="PATH=/home/USERNAME/ref-project-app/ref-manager/venv/bin"
```

Fix and reload:

```
# Edit service file
sudo nano /etc/systemd/system/ref-manager.service
```

```
# Reload systemd
sudo systemctl daemon-reload
```

```
# Restart service
sudo systemctl restart ref-manager
```

```
# Check status
sudo systemctl status ref-manager
```

1.8 □ Template Errors

Problem: Template syntax errors

Error:

```
TemplateSyntaxError: Invalid block tag
```

Common causes:

1. Unbalanced tags:

```
<!-- Bad -->
{% if condition %}
    <div>Content</div>
<!-- Missing {% endif %} -->
```

```
<!-- Good -->
{% if condition %}
    <div>Content</div>
{% endif %}
```

2. Missing template tag load:

```
<!-- Bad -->
{{ value|custom_filter }}
```

```
<!-- Good -->
```

```
{% load custom_filters %}  
{{ value|custom_filter }}
```

3. Wrong quote types:

```
<!-- Bad -->  
href="{% url 'core:view_name" %}"
```

```
<!-- Good -->  
href="{% url 'core:view_name' %}"
```

1.9 □ Development Tools

1.9.1 Django Shell Issues

Problem: Can't access Django shell

Solution:

```
# Standard shell  
python manage.py shell
```

```
# Enhanced shell (install ipython)  
pip install ipython  
python manage.py shell
```

1.9.2 Missing Admin Styling

Problem: Admin panel has no CSS

Solution:

```
# Collect static files  
python manage.py collectstatic --noinput
```

```
# Check STATIC_ROOT setting  
python manage.py shell  
>>> from django.conf import settings  
>>> print(settings.STATIC_ROOT)
```

```
# Restart server  
sudo systemctl restart ref-manager
```

1.10 □ Getting Additional Help

1.10.1 Information to Include When Seeking Help

When reporting issues, include:

1. System Information:

```
# Python version  
python3 --version  
  
# Django version  
python manage.py version  
  
# OS information  
uname -a
```

2. Error Message: - Full error traceback - When error occurs - Steps to reproduce

3. Recent Changes: - What was changed before error - New packages installed - Configuration changes

4. Logs:

```
# Application logs  
tail -n 100 logs/django.log  
  
# System service logs  
sudo journalctl -u ref-manager -n 100  
  
# Nginx logs (if applicable)  
sudo tail -n 100 /var/log/nginx/error.log
```

1.10.2 Diagnostic Commands

```
# Check Django installation  
python manage.py check  
  
# Check deployment settings  
python manage.py check --deploy  
  
# Show migrations  
python manage.py showmigrations  
  
# Show database state  
python manage.py dbshell  
.tables # (in SQLite)  
\dt      # (in PostgreSQL)  
  
# Test database connection  
python manage.py shell  
>>> from django.db import connection  
>>> connection.ensure_connection()  
>>> print("Connected!")
```

1.11 □ Common Error Messages Index

Error	Section
TypeError: Decimal and float	Python 3.13
Port already in use	Server won't start
No such table	Database errors
Permission denied	Permission errors
UnicodeDecodeError	CSV import
File too large	PDF upload
Invalid date format	CSV import
TemplateSyntaxError	Template errors
Service failed	Systemd
Missing static files	Missing admin styling

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For additional support, see complete documentation suite or contact system administrator.