PTO Management System Training Guide

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System Overview

This PTO management system provides automated time-off request processing with:

- **Deadline validation** (14 days for vacation, 24 hours for sick leave)
- **Automatic balance calculations** when requests are approved
- **Email notifications** to managers and employees
- **Manager approval workflow** with multiple status options
- **Balance protection** to prevent over-allocation

Key Components

- **Google Form**: Employee request submission
- **Google Sheets**: Data storage and manager interface
- **Google Apps Script**: Automation logic
- **Email system**: Automated communications

Initial Setup

1. Google Form Setup

- Create form with required fields:

- Employee Name
- Employee ID
- Absence Type (dropdown: Vacation, Sick Leave, Personal Time)
- Start Date
- End Date
- Total Hours Requested

2. Google Sheets Structure

Create two sheets in your workbook:

Employee Sheet:

- Column A: Employee ID
- Column B: Full Name
- Column C: Email
- Column D: Start Date
- Column E: PTO Allotment
- Column F: Used PTO
- Column G: Remaining PTO

PTO Requests Sheet:

- Column A: Timestamp
- Column B: Name
- Column C: Employee ID
- Column D: Absence Type
- Column E: Start Date
- Column F: End Date
- Column G: Total Hours Requested
- Column H: Status
- Column I: Manager Comments
- Column J: Submitted Date

3. Apps Script Installation

1. Go to Extensions > Apps Script

2. Replace default code with the PTO management script
3. Save the project
4. Set up triggers (see Triggers section)

4. Form-Sheet Connection

1. In Google Form, click Responses tab
2. Click green spreadsheet icon
3. Select "Select existing spreadsheet"
4. Choose your PTO Requests sheet

Sheet Structure

Employee Sheet Requirements

- **Column C (Email)**: Must contain valid email addresses for notifications
- **Columns F & G**: Used PTO and Remaining PTO must be numbers
- **Employee ID format**: Must match exactly between Employee sheet and PTO Requests

PTO Requests Sheet

- **Column H (Status)**: Create data validation dropdown with options:
  - Pending
  - Approved
  - Denied
  - Needs More Info
  - Insufficient Balance
  - Late Submission

Data Validation Setup

1. Select Status column (Column H)
2. Data > Data validation
3. Criteria: List of items
4. Enter: `Pending, Approved, Denied, Needs More Info, Insufficient Balance, Late Submission`
5. Check "Show dropdown list in cell"

Script Functions

Core Functions

`onFormSubmit(e)`

- Triggers when form is submitted
- Validates submission deadlines
- Generates request ID
- Sends manager notifications
- Sets initial status (Pending or Late Submission)

`onEdit(e)`

- Triggers when Status column is manually changed
- Processes approvals/denials
- Updates PTO balances
- Sends employee notifications
- Records decision dates

`updatePTOBalanceForRow(row)`

- Updates employee PTO balances when approved
- Finds matching employee by ID
- Adds to Used PTO, subtracts from Remaining PTO

Validation Functions

`validateSubmissionDeadline(absenceType, startDate)`

- Checks if request meets deadline requirements
- Vacation/Personal: 14 days advance notice
- Sick Leave: 24 hours advance notice

`checkSufficientPTOBalance(row)`

- Verifies employee has enough PTO hours
- Prevents over-allocation
- Triggers "Insufficient Balance" status if needed

Manager Workflow

Daily Operations

1. **Review New Requests**
   - Check email notifications for new submissions
   - Review PTO Requests sheet for pending items
   - Note any "Late Submission" flags
2. **Approve/Deny Requests**
   - Click Status dropdown for each request
   - Select appropriate status:
     - **Approved**: Automatically updates balance and notifies employee
     - **Denied**: Sends denial notification
     - **Needs More Info**: Requests additional details
3. **Handle Special Cases**
   - **Late Submission**: Decide whether to approve as exception
   - **Insufficient Balance**: Choose to deny or allow negative balance
   - **Emergency Requests**: Use manager discretion

Manager Dashboard

Use Google Sheets filters and sorting:

- Filter by Status = "Pending" for items needing attention
- Sort by Submitted Date for chronological review
- Filter by Absence Type for pattern analysis

Troubleshooting

Common Issues

Form Responses Not Appearing

1. Check form-sheet connection:
   - Form > Responses > Green spreadsheet icon
   - Ensure connected to correct sheet

2. Verify sheet name is "PTO Requests"
3. Check for multiple response tabs (delete duplicates)

Script Not Running

1. Check triggers in Apps Script:
   - Clock icon > Add Trigger if missing
   - Function: onFormSubmit, Event: On form submit
   - Function: onEdit, Event: On edit
2. Verify script permissions are granted

Balance Not Updating

- **Employee ID Mismatch**: Most common cause
  - Check exact matching between sheets (case-sensitive)
  - Remove extra spaces
  - Ensure same format (EMP001 vs Emp001)
- **Wrong Column References**: Verify Used PTO in Column F, Remaining PTO in Column G

Email Notifications Not Sending

- Verify manager email in script: `smithcareers1@gmail.com`
- Check employee emails in Column C of Employee sheet
- Confirm Gmail quota not exceeded (100 emails/day limit)

Debug Tools

Apps Script Execution Log

1. Apps Script > Executions (clock icon)
2. Click on execution to view details
3. Look for error messages or console logs

Manual Function Testing

1. Apps Script > Select function dropdown
2. Choose function to test (e.g., `updatePTOBalanceForRow`)
3. Click Run to execute manually
4. Check logs for output

Tips and Tricks

Apps Script Power Tips

Find and Replace in Code

- `Ctrl+F`: Opens find dialog
- `Ctrl+H`: Opens find and replace
- Use for bulk code updates (email addresses, column references)

Function Testing

- Test individual functions before full deployment
- Use `console.log()` statements for debugging
- Check execution transcript for detailed logs

Version Control

- Apps Script > Manage versions
- Create versions before major changes
- Rollback if issues occur

Sheet Management

Data Validation Shortcuts

- Copy validation rules: Select cells > Ctrl+C > Select range > Ctrl+Alt+V
- Apply to entire columns for consistency

Conditional Formatting

- Highlight "Late Submission" in red
- Color-code statuses for quick visual scanning
- Format insufficient balance warnings

Filter Views

- Create saved filter views for common searches
- "Pending Approvals" filter for daily workflow
- "This Week's Requests" for time-based review

Employee Management

Bulk Updates

- Use formulas for PTO allotment calculations
- Import employee data from HR systems
- Batch email updates using mail merge

ID Management

- Establish consistent Employee ID format
- Document ID structure for new hires
- Regular audit to catch mismatches

Maintenance

Regular Tasks

Weekly Review

- Check for stuck "Pending" requests
- Verify balance calculations are accurate
- Review any error logs in Apps Script

Monthly Maintenance

- Audit Employee ID consistency
- Update PTO allotments for new periods
- Review and archive old requests

Quarterly Updates

- Update manager email addresses
- Review deadline policies
- Test all notification emails

System Monitoring

Key Metrics to Watch

- Script execution success rate

- Average approval time
- Balance accuracy
- Email delivery success

Performance Optimization

- Archive old requests to separate sheets
- Minimize script complexity for faster execution
- Regular cleanup of unused functions

Backup and Recovery

Data Backup

- Regular Google Sheets backup downloads
- Export employee data monthly
- Copy script code to external storage

Disaster Recovery

- Document all setup steps for recreation
- Maintain employee contact list separately
- Test restoration procedures quarterly

Advanced Configuration

Customization Options

Deadline Modifications

- Edit `validateSubmissionDeadline()` function
- Change day requirements per absence type
- Add new absence types with custom rules

Email Template Updates

- Modify notification text in email functions
- Add company branding
- Customize subject lines

Status Options

- Add new status types in dropdown
- Update script logic for new statuses
- Create custom workflows

Integration Possibilities

Calendar Integration

- Google Calendar event creation on approval
- Team calendar visibility
- Conflict detection

Reporting Enhancements

- Automated monthly reports
- Department-level analytics
- Trend analysis dashboards

Support and Resources

When You Need Help

1. **Check Execution Logs**: Most issues show clear error messages
2. **Test Components Separately**: Isolate form, sheet, and script issues
3. **Verify Data Integrity**: Employee ID matching is the most common problem
4. **Review Recent Changes**: What worked before the issue started?

Best Practices

- Make small changes and test frequently
- Document customizations for future reference
- Maintain consistent data formats
- Regular system health checks
- Keep backups of working versions

This system provides a solid foundation for PTO management while remaining flexible for future enhancements and customizations.