ODK MCP System User Manual

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Introduction

Welcome to the ODK MCP System User Manual. This manual provides comprehensive guidance on using the ODK MCP System, a powerful platform for data collection, management, and analysis based on Open Data Kit (ODK) and Model Context Protocol (MCP).

Purpose and Scope

This manual is designed to help users effectively utilize the ODK MCP System for data collection, management, and analysis. It covers all aspects of the system from a user's perspective, including project management, form creation, data collection, analysis, and reporting.

Target Audience

This manual is intended for:

- Project managers who need to set up and manage data collection projects
- Field workers who collect data using the system
- Analysts who process and analyze the collected data
- Administrators who manage users and system settings

System Overview

The ODK MCP System is a comprehensive platform that enables:

- Creation and management of data collection projects
- Design and deployment of data collection forms
- Collection of data through user-friendly interfaces
- Analysis of collected data using various statistical methods
- Generation of reports and visualizations

- Integration with other systems and tools

Getting Started

Accessing the System

The ODK MCP System can be accessed through a web browser. To access the system:

1. Open a web browser (Chrome, Firefox, or Edge recommended)
2. Navigate to the system URL provided by your administrator
3. You will be directed to the sign-in page

User Registration

If you are a new user and do not have an account:

1. Click on the "Register" or "Sign Up" link on the sign-in page
2. Fill in the required information:
3. Username
4. Email address
5. Password
6. Confirm password
7. Click "Register" to create your account
8. You may need to verify your email address by clicking a link sent to your email
9. Once verified, you can sign in to the system

Signing In

To sign in to the system:

1. Enter your username or email address
2. Enter your password
3. Click "Sign In"
4. If you have forgotten your password, click "Forgot Password" and follow the instructions to reset it

User Interface Overview

The ODK MCP System user interface consists of the following main components:

Navigation Sidebar

The sidebar on the left side of the screen provides access to the main sections of the system:

- **Home**: Dashboard with an overview of your projects and recent activity
- **Projects**: List of projects you have access to
- **Forms**: Forms available in the current project
- **Data Collection**: Interface for collecting data
- **Data Analysis**: Tools for analyzing collected data
- **Reports**: Report generation and management
- **Settings**: User and system settings

Top Bar

The top bar displays:

- Current project name
- User profile menu
- Notifications
- Help and support options

Main Content Area

The main content area displays the selected section's content and functionality.

Context Panel

Some sections include a context panel on the right side that provides additional information and options related to the current view.

Project Management

Projects are the top-level organizational units in the ODK MCP System. They contain forms, data, and analysis results related to a specific data collection effort.

Creating Projects

To create a new project:

1. Navigate to the **Projects** section from the sidebar
2. Click the "New Project" button
3. Fill in the project details:
4. **Name**: A descriptive name for the project

5. **Description**: A brief description of the project's purpose
6. **Start Date**: When the project begins
7. **End Date**: When the project is expected to end (optional)
8. **Tags**: Keywords to help categorize the project (optional)
9. Click "Create Project"

Managing Projects

The Projects section displays a list of all projects you have access to. For each project, you can:

- **View**: Click on the project name to open it
- **Edit**: Click the edit icon to modify project details
- **Archive**: Click the archive icon to archive the project
- **Delete**: Click the delete icon to permanently delete the project (requires confirmation)

To search for specific projects:

1. Use the search box at the top of the project list
2. Enter keywords from the project name or description
3. The list will filter to show only matching projects

Project Settings

To access project settings:

1. Open the project
2. Click on the "Settings" tab

Project settings include:

- **General Settings**: Project name, description, dates, and tags
- **Users**: Manage users who have access to the project
- **Forms**: Configure form settings for the project
- **Data**: Configure data storage and access settings
- **Analysis**: Configure analysis settings
- **Integrations**: Configure integrations with other systems

User Roles and Permissions

The ODK MCP System uses role-based access control to manage permissions. The available roles are:

- **Admin**: Full access to all project features
- **Project Manager**: Can manage project settings, forms, and data
- **Data Collector**: Can fill and submit forms
- **Analyst**: Can access and analyze data
- **Viewer**: Can view forms, data, and analysis results

To add a user to a project:

1. Go to the project settings
2. Click on the "Users" tab
3. Click "Add User"
4. Enter the user's email address
5. Select the appropriate role
6. Click "Add"

To modify a user's role:

1. Go to the project settings
2. Click on the "Users" tab
3. Find the user in the list
4. Click the edit icon
5. Select the new role
6. Click "Save"

To remove a user from a project:

1. Go to the project settings
2. Click on the "Users" tab
3. Find the user in the list
4. Click the delete icon
5. Confirm the removal

Form Management

Forms are the templates used for data collection. The ODK MCP System uses the XLSForm standard for form definition.

Creating Forms

To create a new form:

1. Navigate to the **Forms** section from the sidebar
2. Click the "New Form" button
3. Choose one of the following options:
4. **Upload XLSForm**: Upload an existing XLSForm file
5. **Create from Template**: Start with a pre-defined template
6. **Create from Scratch**: Build a form using the form designer

Uploading an XLSForm

1. Click "Upload XLSForm"
2. Click "Browse" to select the XLSForm file from your computer
3. Enter a name for the form
4. Click "Upload"
5. The system will validate the form and display any errors or warnings
6. If the form is valid, click "Save" to create the form

Creating from a Template

1. Click "Create from Template"
2. Browse the available templates
3. Select a template that matches your needs
4. Customize the template as needed
5. Click "Save" to create the form

Creating from Scratch

1. Click "Create from Scratch"
2. Use the form designer to add questions and logic
3. Click "Save" to create the form

XLSForm Basics

XLSForm is a standard for authoring forms in Excel. An XLSForm consists of three main sheets:

1. **survey**: Contains the questions and their attributes
2. **choices**: Contains the options for multiple-choice questions
3. **settings**: Contains form-level settings

Survey Sheet

The survey sheet defines the questions in the form. Each row represents a question or a form control. The main columns are:

- **type**: The type of question (e.g., text, select_one, integer)
- **name**: The variable name for the question
- **label**: The text displayed to the user
- **required**: Whether the question is required (yes/no)
- **relevant**: A condition that determines when the question is shown
- **constraint**: A condition that the answer must satisfy
- **constraint_message**: The error message shown when the constraint is violated
- **appearance**: How the question is displayed

Choices Sheet

The choices sheet defines the options for multiple-choice questions. Each row represents an option. The main columns are:

- **list_name**: The name of the option list
- **name**: The value stored when this option is selected
- **label**: The text displayed to the user

Settings Sheet

The settings sheet defines form-level settings. The main settings are:

- **form_title**: The title of the form
- **form_id**: A unique identifier for the form
- **version**: The form version
- **default_language**: The default language for the form

Form Versioning

The ODK MCP System supports form versioning to track changes to forms over time. When you update a form, you can:

1. **Create a new version**: This preserves the existing form and creates a new version
2. **Update the current version**: This replaces the current form with the new one

To create a new version:

1. Open the form
2. Click "Create New Version"
3. Upload the updated XLSForm or make changes in the form designer

4. Click "Save"

To update the current version:

1. Open the form
2. Click "Edit"
3. Upload the updated XLSForm or make changes in the form designer
4. Click "Save"

Form Settings

To access form settings:

1. Open the form
2. Click on the "Settings" tab

Form settings include:

- **General Settings**: Form name, description, and version
- **Permissions**: Who can view and edit the form
- **Validation**: Configure validation rules
- **Appearance**: Configure how the form is displayed
- **Advanced**: Configure advanced settings like calculations and external data sources

Data Collection

Data collection involves filling out forms and submitting the data to the system.

Filling Forms

To fill out a form:

1. Navigate to the **Data Collection** section from the sidebar
2. Select the form you want to fill
3. Click "Start New Submission"
4. Fill in the form fields
5. Click "Save" to save a draft or "Submit" to submit the form

Offline Data Collection

The ODK MCP System supports offline data collection. To use this feature:

1. Before going offline, navigate to the **Data Collection** section
2. Click "Enable Offline Mode"

3. Select the forms you want to use offline
4. Click "Download Forms"
5. When you're offline, you can still access the system and fill out forms
6. Submissions will be stored locally
7. When you're back online, click "Sync" to upload your submissions

Managing Submissions

To view and manage submissions:

1. Navigate to the **Data Collection** section
2. Click on the "Submissions" tab
3. Select the form to view its submissions
4. The list shows all submissions with their status and submission date

For each submission, you can:

- **View**: Click on the submission to see the details
- **Edit**: Click the edit icon to modify the submission (if permitted)
- **Delete**: Click the delete icon to delete the submission (requires confirmation)

To search for specific submissions:

1. Use the search box at the top of the submission list
2. Enter keywords or values from the submission
3. The list will filter to show only matching submissions

Data Validation

The ODK MCP System validates data during submission to ensure data quality. Validation includes:

- **Required fields**: Ensuring that all required fields are filled
- **Data types**: Ensuring that values match their expected types (e.g., numbers, dates)
- **Constraints**: Checking that values satisfy any defined constraints
- **Skip logic**: Ensuring that the form flow is consistent

If validation fails, the system will display error messages indicating what needs to be corrected.

Data Analysis

The ODK MCP System provides powerful tools for analyzing collected data.

Descriptive Analytics

Descriptive analytics summarizes the main characteristics of the data. To perform descriptive analytics:

1. Navigate to the **Data Analysis** section
2. Click on the "Descriptive Analytics" tab
3. Select the form and data you want to analyze
4. Choose the variables to include in the analysis
5. Click "Generate Analysis"

The system will generate:

- **Summary statistics**: Mean, median, mode, standard deviation, etc.
- **Frequency tables**: Counts and percentages for categorical variables
- **Visualizations**: Histograms, bar charts, pie charts, etc.

Inferential Statistics

Inferential statistics allows you to make inferences and predictions based on the data. To perform inferential statistics:

1. Navigate to the **Data Analysis** section
2. Click on the "Inferential Statistics" tab
3. Select the form and data you want to analyze
4. Choose the analysis type:
5. **T-tests**: Compare means between groups
6. **ANOVA**: Analyze variance between groups
7. **Correlation**: Measure relationships between variables
8. **Regression**: Model relationships between variables
9. **Chi-square**: Test relationships between categorical variables
10. Configure the analysis parameters
11. Click "Run Analysis"

The system will generate:

- **Test results**: Test statistics, p-values, confidence intervals
- **Effect sizes**: Measures of the strength of relationships
- **Visualizations**: Scatter plots, box plots, etc.

Data Exploration

Data exploration allows you to interactively explore the data. To use data exploration:

1. Navigate to the **Data Analysis** section
2. Click on the "Data Exploration" tab
3. Select the form and data you want to explore
4. Use the interactive tools to:
5. Filter data based on various criteria
6. Group data by different variables
7. Create pivot tables
8. Generate visualizations
9. Save your exploration for future reference

Visualizations

The ODK MCP System provides various visualization types:

- **Bar charts**: For comparing categories
- **Pie charts**: For showing proportions
- **Histograms**: For showing distributions
- **Box plots**: For showing data distribution and outliers
- **Scatter plots**: For showing relationships between variables
- **Line charts**: For showing trends over time
- **Heat maps**: For showing patterns in complex data
- **Maps**: For showing geographical data

To create a visualization:

1. Navigate to the **Data Analysis** section
2. Click on the "Visualizations" tab
3. Select the form and data you want to visualize
4. Choose the visualization type
5. Configure the visualization parameters
6. Click "Generate Visualization"
7. Customize the visualization as needed
8. Save or export the visualization

Reporting

The ODK MCP System allows you to create comprehensive reports based on your data and analysis.

Creating Reports

To create a new report:

1. Navigate to the **Reports** section
2. Click "New Report"
3. Select the report type:
4. **Standard Report**: A pre-defined report format
5. **Custom Report**: A report you design from scratch
6. **Dashboard**: A collection of visualizations and metrics
7. Configure the report settings:
8. **Title**: The report title
9. **Description**: A brief description of the report
10. **Data Source**: The form or analysis to use as the data source
11. **Sections**: The sections to include in the report
12. **Visualizations**: The visualizations to include
13. **Tables**: The data tables to include
14. Click "Generate Report"
15. Preview the report and make any necessary adjustments
16. Click "Save" to save the report

Report Templates

The ODK MCP System provides several report templates:

- **Summary Report**: A high-level summary of the data
- **Detailed Report**: A comprehensive report with all data and analysis
- **Executive Summary**: A concise report for decision-makers
- **Field Report**: A report focused on data collection activities
- **Analysis Report**: A report focused on data analysis results

To use a template:

1. Navigate to the **Reports** section
2. Click "New Report"
3. Select "Standard Report"
4. Choose the template from the list
5. Configure the template settings
6. Click "Generate Report"

Exporting Reports

Reports can be exported in various formats:

- **PDF**: For printing and sharing
- **HTML**: For web viewing
- **Word**: For editing in Microsoft Word
- **Excel**: For further analysis in Microsoft Excel
- **PowerPoint**: For presentations

To export a report:

1. Open the report
2. Click "Export"
3. Select the export format
4. Configure any format-specific options
5. Click "Export"
6. Save the exported file to your computer

Scheduling Reports

You can schedule reports to be generated automatically:

1. Open the report
2. Click "Schedule"
3. Configure the schedule:
4. **Frequency**: How often to generate the report (daily, weekly, monthly)
5. **Start Date**: When to start generating the report
6. **End Date**: When to stop generating the report (optional)
7. **Recipients**: Who should receive the report
8. **Format**: The format to use for the report
9. Click "Save Schedule"

Settings and Configuration

The Settings section allows you to configure your user profile and system settings.

User Profile

To access your user profile:

1. Click on your username in the top bar
2. Select "Profile"

In your profile, you can:

- Update your personal information
- Change your password
- Configure notification preferences
- Manage your API keys
- View your activity history

System Settings

System settings are available to administrators and include:

- **General Settings**: System name, logo, and branding
- **User Management**: Add, edit, and remove users
- **Role Management**: Configure roles and permissions
- **Security Settings**: Configure authentication and authorization
- **Integration Settings**: Configure integrations with other systems
- **Backup and Restore**: Configure backup and restore options

Integration Settings

Integration settings allow you to connect the ODK MCP System with other systems:

- **Baserow Integration**: Connect to Baserow for data storage
- **AI Tool Integration**: Connect to AI tools like Claude or ChatGPT
- **External API Integration**: Connect to external APIs for data exchange
- **Export Integration**: Configure export options for external systems

API Keys

API keys allow external systems to access the ODK MCP System API. To manage API keys:

1. Navigate to the **Settings** section
2. Click on the "API Keys" tab
3. To create a new key:
4. Click "Generate API Key"
5. Enter a name for the key
6. Select the permissions for the key
7. Click "Generate"
8. Copy and save the key (it will only be shown once)
9. To revoke a key:
10. Find the key in the list
11. Click "Revoke"

12. Confirm the revocation

Advanced Features

Baserow Integration

Baserow integration allows you to use Baserow as the data storage backend. To configure Baserow integration:

1. Navigate to the **Settings** section
2. Click on the "Integrations" tab
3. Click on "Baserow Integration"
4. Enter your Baserow URL and API token
5. Click "Test Connection" to verify the connection
6. Click "Save" to enable the integration

Once configured, you can:

- Store form submissions in Baserow tables
- Use Baserow views for data analysis
- Sync data between the ODK MCP System and Baserow

AI Tool Integration

AI tool integration allows you to use AI tools like Claude or ChatGPT with the ODK MCP System. To configure AI tool integration:

1. Navigate to the **Settings** section
2. Click on the "Integrations" tab
3. Click on "AI Tool Integration"
4. Select the AI tool (Claude, ChatGPT, etc.)
5. Enter your API key for the selected tool
6. Configure the integration settings
7. Click "Save" to enable the integration

Once configured, you can:

- Use AI tools for data analysis
- Generate reports with AI assistance
- Extract insights from unstructured data

Custom Analysis

Custom analysis allows you to create your own analysis scripts. To use custom analysis:

1. Navigate to the **Data Analysis** section
2. Click on the "Custom Analysis" tab
3. Choose one of the following options:
4. **Python Script**: Write a Python script for analysis
5. **R Script**: Write an R script for analysis
6. **SQL Query**: Write an SQL query for analysis
7. Write your script or query
8. Click "Run" to execute the analysis
9. View the results and save them if desired

Troubleshooting

Common Issues

Sign-In Issues

Issue: Unable to sign in

Solutions: - Check that you are using the correct username and password - Reset your password if you have forgotten it - Contact your administrator if your account is locked

Form Issues

Issue: Form validation errors

Solutions: - Check that your XLSForm follows the correct format - Review the error messages for specific issues - Use the XLSForm validator to check your form before uploading

Data Collection Issues

Issue: Unable to submit form

Solutions: - Check your internet connection - Ensure all required fields are filled - Check for validation errors in the form

Analysis Issues

Issue: Analysis fails to run

Solutions: - Check that the data is in the correct format - Ensure you have selected valid variables for the analysis - Try a simpler analysis first to identify the issue

Getting Help

If you encounter issues that you cannot resolve:

1. Check the documentation for guidance
2. Contact your system administrator
3. Submit a support ticket through the help system
4. Check the community forums for similar issues and solutions

Glossary

- **API**: Application Programming Interface, a set of rules for interacting with software
- **Baserow**: An open-source no-code database tool
- **Constraint**: A rule that restricts the values that can be entered in a form
- **Dashboard**: A visual display of key information
- **Form**: A template for collecting data
- **MCP**: Model Context Protocol, a framework for AI agent interaction
- **ODK**: Open Data Kit, a suite of tools for mobile data collection
- **Project**: A collection of forms, data, and analysis related to a specific effort
- **RBAC**: Role-Based Access Control, a method for managing permissions
- **Submission**: A completed form with data
- **XLSForm**: A standard for authoring forms in Excel

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