

Monday.com SDK Guide

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The [Monday.com](#) SDK offers developers the ability to create, customize, and extend functionalities for a wide range of use cases within [Monday.com](#) work operating system. The SDK allows you to build board views, item views, widgets, automation, and integration features using a combination of JavaScript, REST APIs, and a robust client-side SDK. Below, I'll cover key aspects of working with the [Monday.com](#) SDK.

1. Setting Up the Environment

To get started, you'll need to set up your development environment. [Monday.com](#) supports an easy development process through its Apps Framework. You will need:

- Node.js (v12 or higher recommended) as it provides a runtime environment for JavaScript code.
- ngrok to expose your local server to the public internet for webhook testing.

Begin by creating a new [Monday.com](#) app using the [Monday Apps Framework CLI](<https://github.com/mondaycom/monday-cli>). This tool provides a convenient way to initialize, develop, and deploy your apps within the platform.

To initialize your app, use:

```
npx @mondaydotcomorg/monday-cli init
```

This command will guide you through the process of configuring your app, including adding capabilities such as Board Views, Item Views, Widgets, and Integrations.

2. The SDK Client Library

The [Monday.com](#) client SDK is a JavaScript library that allows you to interact directly with data in the [Monday.com](#) environment. To get started, install the SDK into your project:

```
npm install @mondaycom/sdk
```

The SDK provides utility functions that allow your application to fetch data, mutate board items, and interact with [Monday.com](#)'s interface. Here's an example of importing the SDK and connecting it to your app:

```
import mondaySdk from "@mondaycom/sdk";

const monday = mondaySdk();
monday.setToken("YOUR_USER_API_TOKEN");
```

The token can either be an OAuth token or an API token, and it should be used carefully to manage your app's access.

3. App Capabilities

A [Monday.com](#) app can offer a variety of capabilities, such as views, widgets, integrations, and automations.

- Board View & Item View: Board and Item views are custom UI elements that enhance the user experience. The `monday.execute` method can be used to communicate with [Monday.com](#) from these views. For example, if you want to run a query that retrieves board items:

```
monday.api(`{
  boards(ids: 123456789) {
    items {
      name
      column_values {
        text
      }
    }
  }
}`).then((res) => {
  console.log(res.data);
});
```

- Widgets: Widgets can be used in dashboards and offer a rich way to display data from your boards. Widgets interact with data using the `monday.api()` method as well as the React framework, which helps in crafting a modern UI.

- Integration Recipes: Integration recipes define specific triggers and actions that your app can perform. These recipes are written in a user-friendly, no-code environment and typically involve three key parts: a trigger, a condition, and an action. For example, a trigger could be "When a new item is created" and the action could be "Send data to a third-party API".

- Automations: Automations within [Monday.com](#) involve creating seamless workflows that automatically execute when a trigger occurs. Using the SDK, you can register custom automations by configuring integration files with a trigger and action block.

4. Using GraphQL for Data Retrieval

The [Monday.com](#) API uses GraphQL to query data. Unlike traditional REST APIs, GraphQL allows you to define precisely what data you want returned, reducing payload sizes and increasing efficiency. You can use the `monday.api()` method to run GraphQL queries directly from within your application, such as to retrieve items, users, and board configurations.

```
const query = `{
  boards(limit: 1) {
    name
    items {
      name
    }
  }
}`;

monday.api(query).then((res) => {
  console.log(res.data.boards);
});
```

5. OAuth for Authentication

To allow your application to interact with users' [Monday.com](#) accounts, you'll need to use OAuth 2.0. [Monday.com](#) provides an OAuth flow for authenticating users securely. This involves:

1. Redirecting users to the authorization URL.
2. Exchanging the authorization code for an access token.
3. Using the access token to perform actions on behalf of the user.

Authentication ensures your app has permissions to interact with users' data, depending on the provided scopes.

6. Utilizing the Storage API

The Storage API provided by [Monday.com](#) allows you to store key-value data related to your app. It's useful for persisting app-specific settings, like user preferences or state information:

```
// Storing data
monday.storage.instance.setItem('key', 'value').then((res) => {
  console.log('Data saved successfully', res);
});

// Retrieving data
monday.storage.instance.getItem('key').then((res) => {
  console.log('Data retrieved', res.data.value);
});
```

7. Developing, Testing, and Deploying Your App

During development, ngrok is highly useful to make your local environment publicly accessible. You can run your local server and expose it using ngrok, enabling [Monday.com](#) to interact with your app's endpoints for webhooks or integration testing.

After development, apps can be submitted to the [Monday.com](#) Apps Marketplace. The submission involves providing detailed documentation, a video demo, and a verification process to ensure security and stability.

8. Handling Webhooks

Webhooks allow you to listen for changes within your [Monday.com](#) boards. You can create custom webhooks to react to board events, such as when an item is updated or deleted. The [Monday.com](#) SDK and API make it easy to set up webhooks and direct them to your local server for processing.

9. Best Practices

- **Error Handling:** Ensure you have robust error-handling mechanisms, as API queries and mutations can fail due to connectivity issues, incorrect board IDs, or permission problems.
- **Efficient API Usage:** Limit API usage to reduce costs and avoid hitting rate limits. Use GraphQL to query only necessary fields and avoid redundant calls.
- **Secure Token Management:** Always manage tokens securely. For OAuth tokens, use secure storage and restrict permissions as much as possible.
- **UI/UX Design:** If building board views or widgets, keep the UI intuitive, as the end users are often non-technical users managing their workflows.

Conclusion

The [Monday.com](https://monday.com) SDK provides a versatile set of tools to build powerful customizations within the Monday ecosystem. From querying data using GraphQL to developing sophisticated widgets and board views, the SDK empowers developers to extend [Monday.com](https://monday.com)'s functionalities significantly. Whether you're creating simple automation workflows or sophisticated apps, understanding the SDK capabilities will help leverage the platform to its fullest potential.