Wandz.ai Android SDK Deployment Guide

Welcome to Wandz.ai!

We're thrilled to help you unlock the full potential of our adaptive AI platform. This guide will walk you through the deployment process to ensure a smooth integration with Wandz.ai.

Please follow these steps carefully for optimal results.

Android SDK Version 1.0.37+

Overview

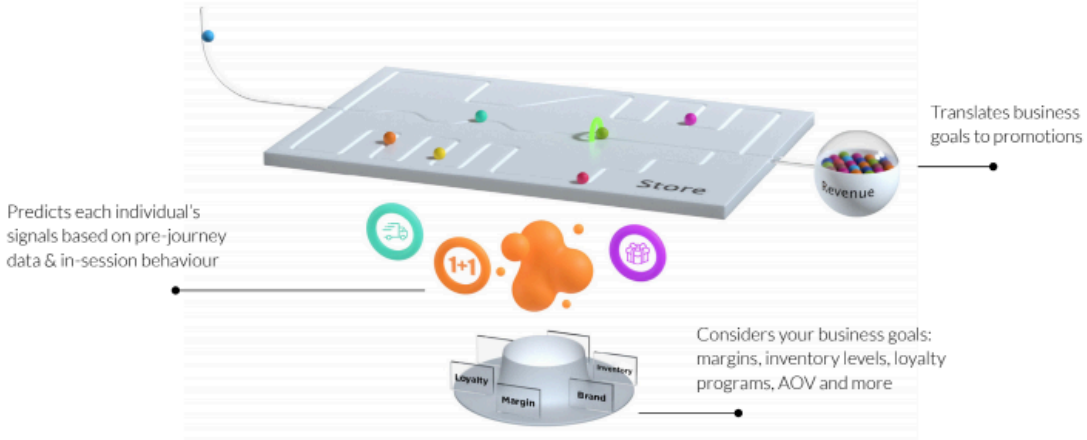
Wandz Real-Time Predictive AI

Our Predictive AI platform enhances the customer journey for numerous global online brands. Wandz.ai's innovative technology leverages in-session data, consumer-side signals, behavioral analytics, and prediction algorithms to personalize every interaction, guiding each customer smoothly to their tailored destination.

Introducing Wandz

The Wandz.ai SDK library for Android empowers developers to integrate advanced predictive AI capabilities into mobile applications effortlessly. By leveraging real-time data and machine learning models, the SDK enables personalized, in-session predictions tailored to each user's behavior. This ensures that your app delivers the right content, offers, and experiences at the optimal moment, enhancing user engagement and conversion rates.

Designed for flexibility and ease of use, the Wandz.ai SDK allows developers to incorporate predictive analytics seamlessly without extensive coding or technical overhead. The SDK integrates smoothly with existing Android applications, offering robust features to track and analyze user interactions in real time. With built-in support for GDPR and CCPA compliance, Wandz.ai ensures that user privacy is maintained while delivering high-impact, data-driven insights to optimize every step of the customer journey.



Integration

The integration and role of the Wandz SDK are as follows (see Figure 1):

1. The application initializes the SDK with an API call (WandzClient.start) to verify and gather information about the associated account.
2. Once initialized, the Wandz library tracks the user behavior automatically and reports back to the Wandz AI backserver for more precise predictions.
   Note: Information that cannot be retrieved by the SDK must be passed to Wandz using the appropriate API calls that the library provides.
3. The Wandz SDK returns an outcome that predicts the user's future actions or characteristics. Additionally, if the Wandz Interactions library is enabled and display criteria that are set via the platform are met, an interactive popup will become visible to the user.

Note: Programmatic calls can be made to the SDK to start an AI prediction calculation (Example: requestPrediction).

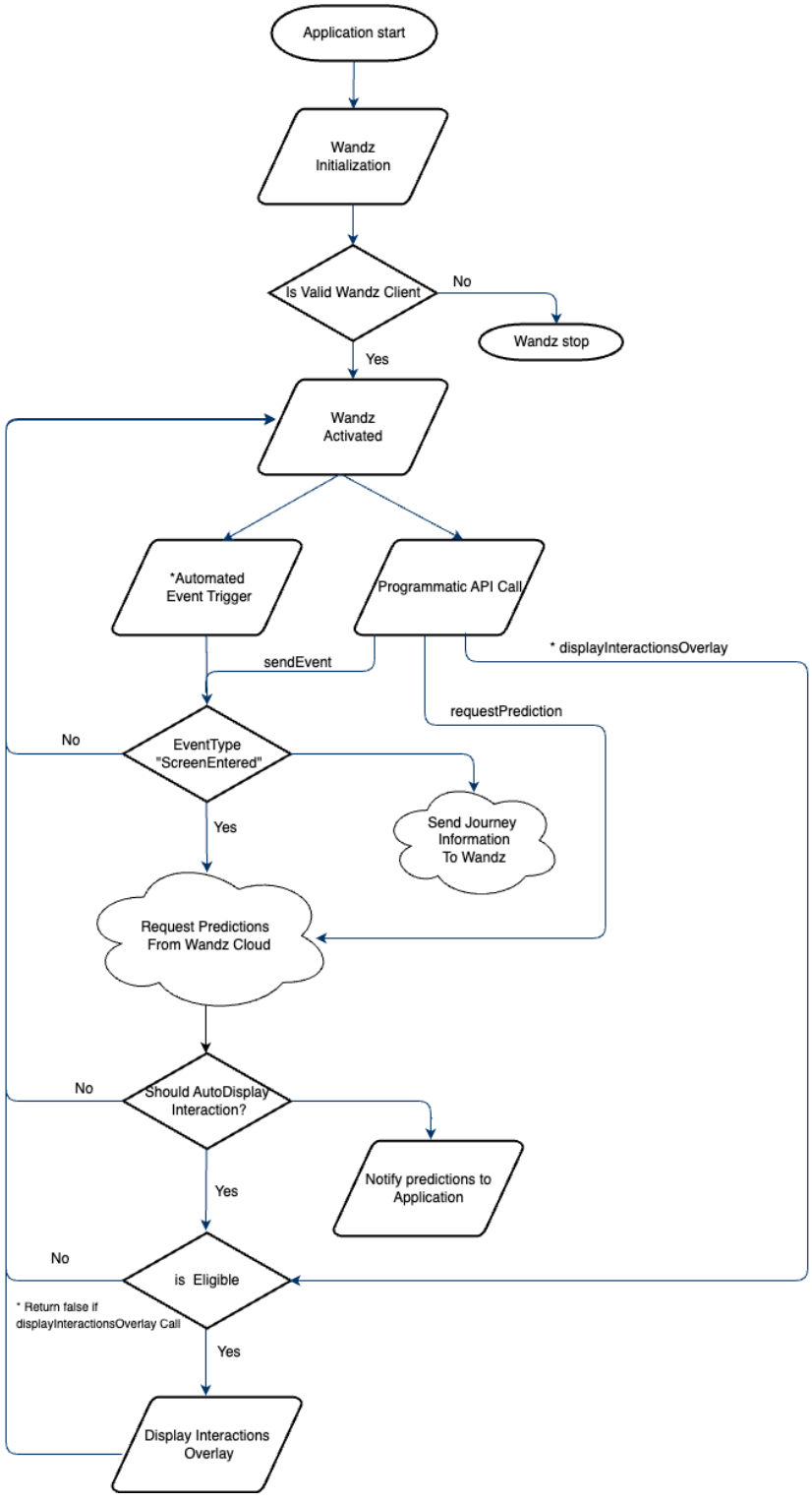


Figure 1. Flow

Setup and installation

Basic requirements

To successfully install and use the Wandz SDK, you must follow these requirements:

- Minimum Android SDK version: 21
- Dependencies:
  - androidx.appcompat:appcompat:1.6.1
  - com.squareup.retrofit2:retrofit:2.9.0
  - com.squareup.retrofit2:converter-gson:2.9.0
  - com.google.code.gson:gson:2.9.1
- An active Wandz account

  If you do not have a Wandz account, contact your Customer Success Manager or contact us via our website. Wandz provides you with an account ID (Client Tag ID) *to activate the SDK.*

The following instructions will help you to integrate Wandz into your application.

Adding the Wandz dependency

In Android Studio, navigate to build.gradle file at the app level and add the Wandz core dependency:

```
Android {
    defaultConfig {
        minSdkVersion 21
    }
}
dependencies {
            implementation 'ai.wandz.android:core-wandz:1.0.37'
}
```

Wandz SDK has two additional complementary libraries that can be used, “AutoCapture” & “Activate”.
The AutoCapture library captures journey events automatically, without the programmer needing to report them. These events include lifecycle, click & affinities. The second library is Activate, which holds user interaction capabilities, can display popups designed using the Wandz Platform and following the required display rules.

```
dependencies {
            implementation 'ai.wandz.android:autocapture-wandz:1.0.15'
            implementation 'ai.wandz.android:acticate-wandz:1.0.0.18'
}
```

Wandz Libraries

Libraries Structure

Wandz Core

The Wandz Core library serves as the foundational layer of the Wandz Android ecosystem. It provides essential utilities, base configurations, shared data models, and lifecycle-aware components that ensure seamless integration and communication between all abilities & modules. Designed for reusability and scalability, Wandz Core simplifies common tasks and promotes consistency across different features within the platform.

Wandz Activate

Wandz Activate enables predictive interactions within the Wandz ecosystem by intelligently displaying prompts based on dynamic rules defined through the Wandz platform. This library interprets context-aware triggers and user behavior to decide when and how to surface targeted UI elements. Designed for seamless integration and configurability, Activate empowers apps to deliver timely, relevant prompts that enhance user engagement and drive desired actions—all without hardcoding logic into the app itself.

Wandz AutoCapture

Wandz AutoCapture automatically tracks app lifecycle events, user interactions, and user affinities to provide rich behavioral insights with zero manual instrumentation. Designed for seamless background operation, this library captures meaningful signals—from screen transitions and taps to patterns in user behavior—enabling real-time analytics and personalization. Integrated deeply with the Wandz ecosystem, AutoCapture empowers smarter decision-making by surfacing data-driven context across the app experience.

Initialization

The host application must register with a Wandz Account ID. The ID must be located under the application tag in the AndroidManifest file. For example:

```
<manifest>
  <application>
    <meta-data android:name="ai.wandz.sdk.client_id" android:value="ACCOUNT_ID"/>
    ...
  </application>
</manifest>
```

ACCOUNT_ID	The Customer ID of your Wandz account. Type: String Required

You have to initialize the Wandz SDK in the onCreate() method of your Application. Only one instance of the Wandz will be instantiated.

```
WandzClient.start(Context applicationContext);
```

In case your project uses additional Wandz libraries, they must be initialized as well in the same manner as the Core SDK.

```
WandzActivate.start(Context applicationContext);

WandzAutoCapture.start(Context applicationContext);
```

APIs

The Wandz SDK has a primary object named ***WandzClient*** for interacting with the Wandz library. All interactions between the application and the Wandz library should be via the WandzClient object. When using a Wandz sub-library (activate, for example), the primary object of that library should be used (***WandzActivate*** object, for example).

Mandatory API Calls

The following MUST be called/implemented for proper functionality:

- API entities
  - WandzClient.start
  - WandzClient.reportScreenEntered

    Cart / Checkout / Confirmation screen entered events must be reported. This provides vital information for the Wandz AI mechanism to produce predictions.

Session Properties

Setting End User IDs

In order to align your journey data with Wandz, you can set your unique end-user & session IDs with setEndUserIds api. The call should be done after a successful login via the following method.

```
WandzClient.setEndUserIds(String userId, String sessionId);
```

userId	The App internal user ID. Type: String Optional: Default Value: null
sessionId	Represents the app internal session ID. Update if changes for any reason. Type: String Optional: Default Value: null

Reporting App Referrer

If available, report to the Wandz system the package referrer & its URI. They are important in order to make more accurate predictions.

```
WandzClient.reportReferrer(String referrer, String referrerUri);
```

referrer	The package name of the 3rd party app that initiated the launch of the session. Type: String Optional: Default Value: null
referrer Uri	The Uri that was used by the 3rd party app to start the first session. Type: String Optional: Default Value: null

Listeners

The Wandz SDK uses the observer pattern listeners to push specific events to your application. If you wish to be notified, you must implement and register one of the below listeners on classes you wish to receive Wandz notifications. Once the class no longer needs to receive these notifications, you must unregister them. (In Activity/Fragment, “add” will be done in `OnResume` and “remove” in `OnPause`)

Register Prediction Listener

The values of prediction are calculated asynchronously, so in order to receive prediction information you will need to register a listener. The calculation is triggered automatically on every screen-entered event or programmatically using the getPrediction method.

```
WandzClient.registerPredictionListener(IWandzPredictionListener listener);
```

IWandzPredictionListener	The listener class must implement the predictionsCallback method that receives PredictionModel arrayList. Type: Interface

Register Audiences Listener

The audience values are calculated asynchronously therefore in order to receive the user-associated list of audiences a listener is required.

```
WandzClient.registerAudiencesListener(IWandzAudiencesListener listener);
```

IWandzAudiencesListener	The listener class must implement the audiencesCallback method that receives the Audience ArrayList. Type: Interface

Register AI Features Listener

The AI Features' values are continuously calculated asynchronously (screen/session/device levels), therefore, in order to receive their values, a listener is required. The listener will be triggered on any AI Feature value change according to the `featuresFilter` keys parameter.

```
WandzClient.registerAiFeaturesListener(IWandzAIFeaturesListener listener, ArrayList<String> featuresFilter);
```

IWandzAiFeaturesListener	The listener class must implement the aiFeatureCallback method that receives key & value parameters. Type: Interface
featuresFilter	A positive list of AI feature keys you wish to listen to their values. If set to null, then all AI Features values are sent. Type: ArrayList<String> Optional: Default Value: null

Unregister Listeners

Remove listeners that were registered from the SDK. Use this method when the listeners are no longer needed. Only non-null values will be unregistered.

```
WandzClient.unregisterListeners(IWandzPredictionsListener, IWandzAIFeaturesListener, IWandzAIFeaturesListener);

//OR

WandzClient.unregisterAllListeners();
```

Live QA

Certain library abilities may be marked as live QA only, thus making them invisible to the public. However, they can be turned on for certain devices for QA purposes (interactions / adaptive search /…).
To switch the installed application to Wandz live QA mode, add the following file "**wandz_<APP_PACKAGE>.qa**" to the following Android directory "**/data/local/temp**". The changes will take effect after the application restarts.

```
//switch to Wandz Live QA mode
adb push <FILE_LOCATION>/wandz_<APP_PACKAGE>.qa /data/local/tmp/

//revert to regular mode
adb shell rm /data/local/tmp/wandz_<APP_PACKAGE>.qa
```

Data Layers APIs

AI Features

WandzAiFeature Enum

This enum holds basic key names used to retrieve/set information that the SDK library holds.

APP_VERSION	BATTERY_IS_CHARGING	BATTERY_PERCENT	BATTERY_PERCENT_SCORE
BATTERY_OVERHEATED	BATTERY_CHARGE_TYPE	COUNTRY	COUNTRY_SIM
CPU_STRENGTH_SCORE	CPU_STRENGTH_VALUE	DAY_OF_SESSION	DEVICE_LAYOUT
DEVICE_TYPE	DEVICE	LANGUAGE_CHINESE	LANGUAGE_DUTCH
LANGUAGE_ENGLISH	LANGUAGE_FRENCH	LANGUAGE_GERMAN	LANGUAGE_SPANISH
LANGUAGE_RUSSIAN	LANGUAGE_UKRAINIAN	LANGUAGE_POLISH	LANGUAGE_ITALIAN
LANGUAGE_HEBREW	LANGUAGE_ARABIC	LANGUAGE_OTHER	APPROVED_CAMERA
APPROVED_LOCATION	APPROVED_NOTIFICATIONS	IS_DARK_MODE	IS_DAY
NETWORK_STRENGTH_SCORE	NETWORK_STRENGTH_VALUE	NUMBER_OF_SESSIONS	NUMBER_OF_PURCHASES
OS	OS_VERSION	PAGE_COUNT	PREF_LANGUAGE
PX_HEIGHT	PX_WIDTH	REFERRER	REFERRER_URI
TIME_OFF_APP_SCORE	TIME_OFF_APP_VALUE	TIME_ON_APP_SCORE	TIME_ON_APP_VALUE
TIME_ON_SCREEN_SCORE	TIME_ON_SCREEN_VALUE	TIME_SINCE_LAST_VISIT_VALUE	TIME_SINCE_LAST_VISIT_SCORE
TIME_ZONE	SCREEN_BRIGHTNESS_VALUE	SCREEN_BRIGHTNESS	AMBIENT_BRIGHTNESS_VALUE
AMBIENT_BRIGHTNESS	USER_MOBILITY	PAGE_TYPE	HOUR_IN_DAY
SCREEN_TITLE	IN_CART	IN_CHECKOUT	IN_CONFIRMATION_PAGE
CLICKS_IN_SESSION_SCORE	CLICKS_IN_SESSION_VALUE	NUMBER_OF_PRODUCT_VIEWS	PURCHASE

Get AI Feature Value

Retrieves the value of a specific AI Feature synchronously.
The method will return an Object of the current value of the feature or NULL if the SDK didn't calculate the feature value.
A second attribute can be passed to cast the Value output to a specific class.

```
WandzClient.getAiFeatureValue(WandzAiFeature aiFeature, Class<T> clazz);

//get the value of a custom AI feature
WandzClient.getAiFeatureValue(String aiFeature, Class<T> clazz);
```

Parameters:

aiFeature	A WandzAiFeature or a unique String name that represents the requested AI feature. Type: WandzAiFeature / String Required
clazz	Class for the return value of the requested feature. Type: Object

Set Custom AI Feature

The SDK can receive custom AI Features On which to calculate its predictions. Once set a value the prediction mechanism will incorporate the custom AI features that were programmatically set to produce better predictions tailored to your application.

```
WandzClient.setCustomAiFeature(String feature, Object value);

//set multiple custom AI features at once
WandzClient.setCustomAiFeatures(HashMap<String, Object> aiFeatures);
```

Parameters:

feature	A unique String name that represents the AI feature in question Type: String Required
value	Basic data typed value for the custom feature. Type: Object Required

Affinities

AffinityType Enum

User affinities can be of different types. To assist in sorting them out, all affinities are categorized into types. When reporting on any user affinity, a type must be assigned via the "reportAffinity" API.

```
enum AffinityType
{
CATEGORY,
BRAND,
COLOR
}
```

Report Affinity

The report affinity method is used to add an affinity to the end user. It takes two parameters: affinityType, which specifies the type of affinity, and affinityValue, which specifies the value of the affinity.

```
WandzClient.reportAffinity(AffinityType affinityType, String affinityValue)
```

Parameters:

affinityType	The type of affinity that is reported Type: AffinityType Required
affinityValue	The affinity(name) that is reported Type: String

Get Affinities

Returns a list of known affinities that are associated with the user.

```
WandzClient.getAffinities()
WandzClient.getAffinities(Integer maxAffinities, AffinityType affinityType)
```

Parameters:

maxAffinitiesToReturn	The maximum number of affinities to return. If NULL, then the number of returned affinities will be determined by platform configuration. Type: Integer
affinityType	The type of affinity that is requested. If Null, then all affinity types will be returned. Type: AffinityType

Calculate Affinities

Return a list of affinities associated with the text. The text that is passed to the method is scanned for affinities according to client-specific configurations, and the list of relevant affinities is returned, or Null is not found. Additionally, the affinities are added to the end user's affinities.

```
WandzClient.calculateAffinities(String textToScan)
WandzClient.calculateAffinities(ArrayList<String> textsToScan)
```

Parameters:

textToScan	A text string to scan for affinities. Type: String

Events

The Wandz AI requires information about the client journey in order to calculate predictions. Some events are detected automatically, but additional events should be triggered manually.

ScreenType Enum

The accuracy of Wandz AI is dependent on tracking the movement of the end user through the app. The accuracy of the Wandz increases the more screen types are sent when screens are changed. The following event types can be used to programmatically report screen changes to the SDK to calculate optimal predictions.

ACCOUNT	CART	CATEGORY	CHECKOUT
CUSTOMER_SERVICE	ERROR_SCREEN	HOME	LOGIN
ORDER_CONFIRMATION	ORDER_DETAILS	PRODUCT	REGISTRATION
SEARCH	SPLASH	STORES	TRACK_ORDER

EventType Enum

The accuracy of Wandz AI is dependent on the number and variety of event types sent. The accuracy of the Wandz increases if more event types are sent. The following event types can be used to programmatically report events to the SDK to calculate optimal predictions.

CLICK_CART	CLICK_CONTACT	CLICK_CHECKOUT	CLICK_GIRT_CARD
CLICK_HELP	CLICK_LOGIN	CLICK_LOGOUT	CLICK_NEW_ARRIVALS
CLICK_PRODUCT_DETAILS	CLICK_READ_REVIEW	CLICK_RETURN_INFO	CLICK_SEARCH
CLICK_SHIPPING_DETAILS	CLICK_SIGN_UP	CLICK_SIMILAR_PRODUCTS	CLICK_SOCIAL_MEDIA
CLICK_TRACK_ORDERS	CLICK_WHICH_LIST	CLICK_WRITE_REVIEW	CLICK_IMAGE
CLICK_FILTER	ADDED_TO_CART	REMOVED_FROM_CART	CLICK_COUPON
PURCHASE			

Report Event

The SDK sends journey events automatically, the `reportEvent` API is used to programmatically report events. It is encouraged to use the EventType enum to notify the system about the event that took place. In the case that there is no matching event found, a custom String can be used instead.

```
WandzClient.reportEvent(EventType eventType);

//for custom event types
WandzClient.reportEvent(String eventType);
```

Parameters:

eventType	An enum representing the possible events Type: EventType / String Required

Report Screen Entered Event

The SDK requires screen change events to produce predictions. Each start of a screen (activity/fragment) should be reported to the library.

```
WandzClient.reportScreenEnteredEvent(ScreenType screenType, String shortDescription, Activity currentActivity);

//for custom screen types
WandzClient.reportScreenEnteredEvent(String screenType);
```

Parameters:

screenType	An enum or String representing the event type Type: ScreenType / String Required
shortDescription	A short screen descriptor of the screen. Used in cases of ambiguous screens like category/product pages.

Note:
The checkout & Order Confirmation screen types are the most important to report.

Report App Paused / Resumed

Sending the application status (paused/resumed) will help create more accurate predictions.

```
WandzClient.reportAppPaused();
WandzClient.reportAppResumed();
```

Block AutoCapture UI Scanner

The Wandz autocapture process scans the entire UI in order to capture click events and process text for affinity purposes. There are two ways to prevent the Wandz autocapture library from scanning a view and its descendants.

1. Use the blockUIScanner API call to block/allow scanning
2. Add a tag to the view and set its value to contain wandz_block_scan: true

```
WandzAutoCapture.blockUIScannel(boolean block);
```

```
<LinearLayout
 ...
 android:tag="wandz_block_scan:true">
</LinearLayout>
```

Audiences

Audience

This class is used to get information about the client's associated audiences.

```
public class Audience {
  string uuid
  string name
}
```

uuid	Unique set of characters that identify an audience Type: String
name	A human-readable string that describes the audience Type: String

Get Audiences

Returns synchronously a list of all audiences that the end user is part of.

```
WandzClient.getAudiences();
```

Predictions

Prediction Model

This structure is used in callbacks to get information about the client's predictions.

```
struct PredictionModel {
   guid: String
   displayName: String
   predictionScore: Double
   prediction: Boolean
}
```

guid	A unique set of characters that identifies the prediction. Type: String
displayName	A human-readable string that describes the prediction. Type: String
predictionScore	The prediction percent value is 0-1. Type: Double
prediction	The Boolean value of the prediction according to its threshold. Type: Boolean

Request Prediction

The SDK automatically recalculates its predictions on every screen entered. If needed, a prediction request can be programmatically requested.
The receive the response, a prediction listener must be registered via the registerPredictionsListener method.

```
WandzClient.requestPrediction();
```

Adaptive Interactions

Last Interaction Displayed

Returns an Interaction object containing the details of the last interaction displayed, or null if no interaction was displayed until the request.

```
WandzActivate.getLastInteractionDisplayed();
```

Show Interaction

Interactions are usually triggered according to set rules, but the interactions can be triggered programmatically if needed (redisplay button, for example). The ShowInteraction method requires an Interaction object to be sent to it.

```
Interaction last = WandzActivate.getLastInteractionDisplayed();
WandzActivate.ShowInteraction(last);
```

Interaction response

Once an interaction button/link is clicked by the end user, it triggers the interaction listener if one was registered. The object sent must implement the *IWandzInteractionsListener* interface. There can be only one listener to the Interaction callback. The callback returns 2 objects: the original interaction that was displayed and the client interaction record that holds the event information.

```
WandzActivate.setWandzInteractionListener((Interaction interaction, ClientInteractionRecord
clientInteractionRecord) → {
  …
});
```

Allow / Deny interactions display

Interactions can be allowed/denied programmatically in addition to the prerequisites determined in the Wandz platform.

```
WandzActivate.allowInteraction(boolean allow);
```

Adaptive Search

Adaptive Search dynamically suggests search terms based on user behavior and context, delivering personalized, relevant suggestions in real time. It enhances discoverability by adapting to each user's preferences and usage patterns. The suggestions are based on categories, brands, and colors.

```
// returns all suggestions
ArrayList<String> suggestions = WandzClient.getAdaptiveSearchSuggestions();

// returns all suggestions filtered by a search term
WandzClient.getAdaptiveSearchSuggestions(String searchTerm);

//can be combined with AutoCompleteTextView
autocompleteAdapter = new ArrayAdapter<>(getContext(),
android.R.layout.simple_dropdown_item_1line, WandzClient.getAdaptiveSearchSuggestions());
autocompleteTextView.setAdapter(autocompleteAdapter);
```

A/B Tests

The A/B Test method determines whether a user is part of a specific A/B test by accepting a string input—either the test's name or ID—and returning a boolean result. It evaluates eligibility based on configurations defined in the Wandz Platform, including rollout percentage and target audience criteria. By abstracting the logic to a simple method call, it enables developers to conditionally execute code or show features only for users enrolled in the experiment, without manually handling any segmentation or allocation logic.

```
Boolean result = WandzClient.isInABTestGroup(String testgroupIdOrName);
```

Hybrid Apps (WebView)

The Wandz library supports data journey continuation between the native and its inner webview. To ensure that the session continues to run correctly, the webview client needs to be monitored by the Wandz library. This can be achieved by one of two methods: either wrapping the web view client object completely or calling interceptWandzCommand in ShouldInterceptRequest of the app WebViewClient object.

```
//Option 1: Wrap the WebViewClient
WebViewClient wvClient = new WebViewClient() {
 …
};
webview.setWebViewClient(WandzWebViewClient.wrap(wvClient));

//Option 2: interceptWandzCommands
WebViewClient wvClient = new WebViewClient() {
  @Override
  public WebResourceResponse shouldInterceptRequest(WebView view, WebResourceRequest
request) {
    WebResourceResponse response =
WandzWebViewClient.interceptWandzCommands(request.getUrl());
    if(response != null) {
      Return response;
    }
    return super.shouldInterceptRequest(view, request);
  }
};
```

Sample App

To run the sample project, you will need Android Studio installed.

1. Download the sample project from the following location:

    https://github.com/namogoo/wandz-android-sample

2. Open and run in Android Studio.