



## Core Concepts

### Initialization

Before using Mixpanel, initialize it with your project token. This is typically done once on page load.

```
mixpanel.init('YOUR_PROJECT_TOKEN');
```

The init method sets up the Mixpanel object and prepares it for tracking data. Replace `'YOUR_PROJECT_TOKEN'` with your actual Mixpanel project token.

### Identifying Users

Identifying users is crucial for tracking their behavior across sessions. Use `mixpanel.identify()` to set a unique user ID.

```
mixpanel.identify('user123');
```

Alternatively, you can use `mixpanel.alias()` to connect anonymous users to identified users, typically after registration or login.

```
mixpanel.alias('newUser',  
mixpanel.get_distinct_id());
```

### Tracking Events

Track user actions using `mixpanel.track()`. Events can include properties providing additional context.

```
mixpanel.track('Product Viewed', {  
  'product_id': '456', 'product_name': 'Awesome  
  Gadget' });
```

Customize event tracking with distinct properties to segment and analyze data effectively.

## People Properties

### Setting User Profile Properties

Use `mixpanel.people.set()` to store user profile information, such as demographics or preferences.

```
mixpanel.people.set({ 'name': 'John Doe',  
  'age': 30, 'signup_date': new Date() });
```

Setting properties allows for detailed user segmentation and personalized messaging.

### Incrementing Numeric Properties

You can increment numeric properties using `mixpanel.people.increment()`. This is useful for tracking metrics like purchase counts or points.

```
mixpanel.people.increment('total_purchases',  
1);
```

Incrementing ensures accurate tracking of cumulative metrics over time.

### Appending to List Properties

Append values to list properties with `mixpanel.people.append()`. This is great for tracking a user's interests or viewed categories.

```
mixpanel.people.append({ 'viewed_categories':  
  'electronics' });
```

Appending allows for dynamic tracking of user activities and interests.

## Advanced Tracking

### Registering Super Properties

Super properties are automatically included with every event. Use `mixpanel.register()` to set these.

```
mixpanel.register({ 'app_version': '1.2.3',  
  'platform': 'web' });
```

Registering super properties simplifies event tracking and ensures consistent data across events.

### Timing Events

Measure the duration of specific processes using `mixpanel.time_event()` before tracking the event.

```
mixpanel.time_event('Image Upload');  
// ... (code for image upload) ...  
mixpanel.track('Image Upload'); // Duration is  
  automatically included
```

Timing events provides valuable insights into user experience and performance bottlenecks.

### Tracking Revenue

Track revenue generated by users with `mixpanel.people.track_charge()`. This updates the user's total revenue.

```
mixpanel.people.track_charge(49.99, {  
  'product_id': '789', 'product_name': 'Premium  
  Access' });
```

Revenue tracking is essential for understanding the monetary value of users.

## Engagement

### A/B Testing

Mixpanel supports A/B testing. Use event tracking to measure the performance of different variations.

```
mixpanel.track('A/B Test Result', {  
  'variation': 'control', 'conversion': true });
```

Track user interactions to optimize content and offers.

### Sending Push Notifications

Integrate Mixpanel with push notification services to engage users. Track push notification opens and conversions.

```
mixpanel.track('Push Notification Opened', {  
  'notification_id': '123' });
```

Push notifications can drive user engagement and retention.

### Using Funnels

Define funnels in Mixpanel to track user progression through key steps, such as signup or purchase flows.

```
mixpanel.track('Funnel Step 1', { 'user_id':  
  'user456' });
```

Analyze funnel data to identify drop-off points and improve user flows.