Microinteractions Toolkit

Reference cards to help designers design effective microinteractions

Microinteractions are commonly defined as the smallest unit of user interaction boiled down to a single use case. They are product use cases each focused on a single task. First described by Dan Saffer in his book by the same name, microinteractions are the task-based and goal-oriented engagement details that users have with interfaces that can inform, enhance, supply context, prevent errors and provide delightful experiences.

Taking the basic framework from Saffer's Microinteractions, but going well beyond it, we have analysed hundreds of microinteractions and thousands of use cases to arrive at six functional categories. We have distilled and described in a set of reference cards that contain general principles, use cases and design strategies. These cards serve as essential tools to systematically identify use cases you may encounter and to design effective microinteractions for them.

Created at IDC, IIT Bombay
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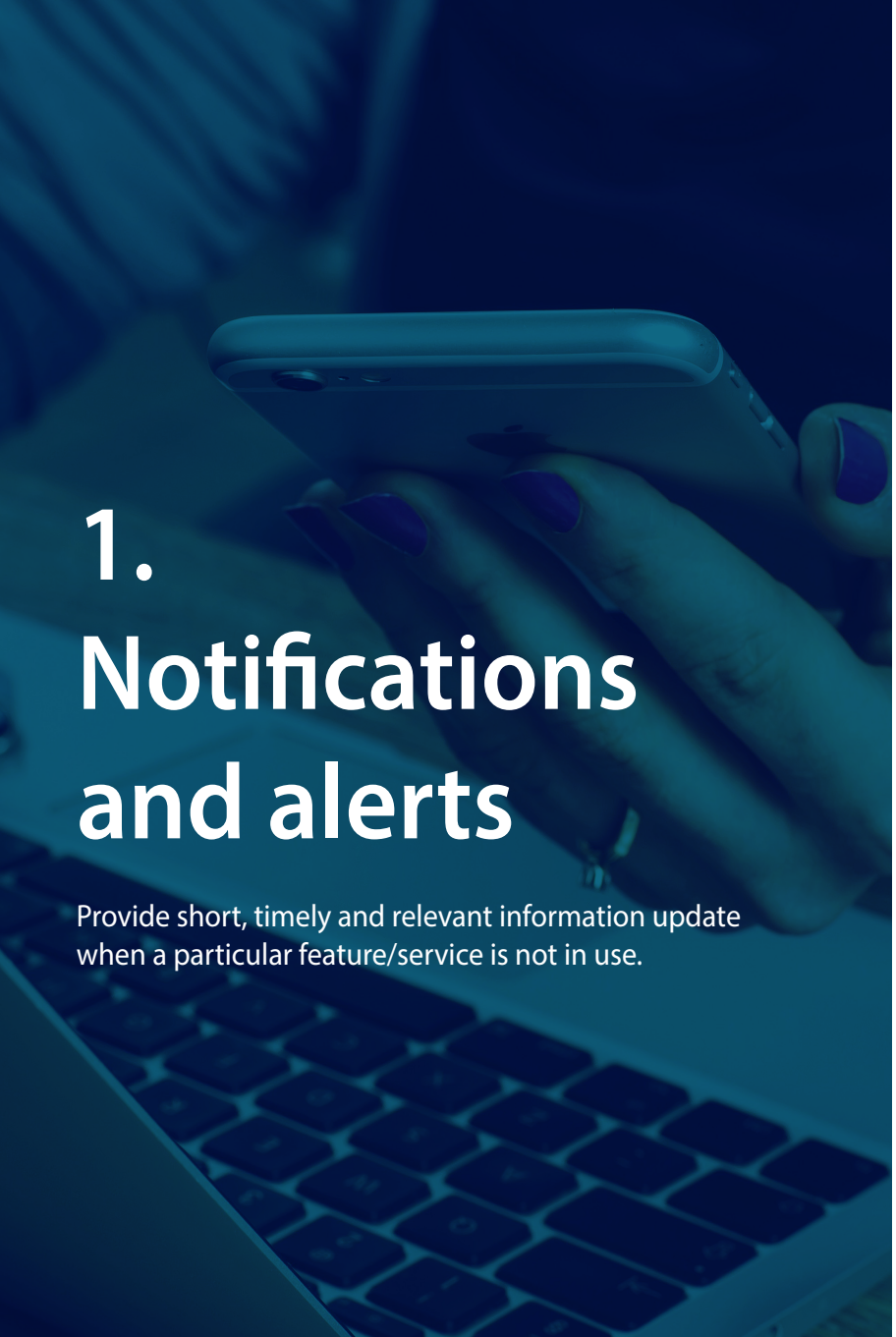


1. Notifications and alerts

Provide short, timely and relevant information update when a particular feature/service is not in use.

GENERAL PRINCIPLES

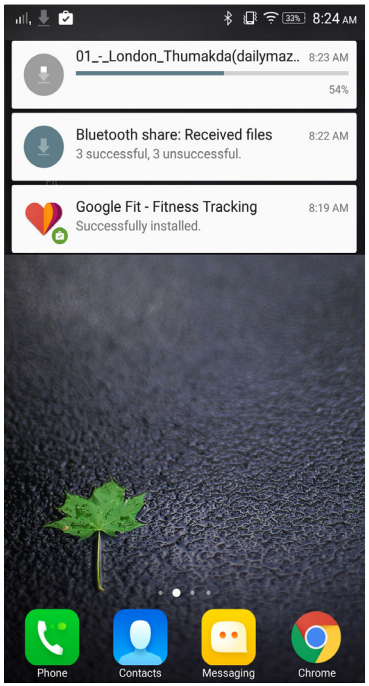
1. Visualize Quantitative Information

2. Use Notification as a Nudge

3. Enable Appropriate Medium of Interaction

4. Maintain Functional Continuity

1. Notifications and alerts



Visualize quantitative information

If a notification contains data from which intervals and ratios can be calculated, provide a visual representation that helps compare, contrast, predict or preempt actions easily.

The status bar shows live feed activity status of signal strength, wifi strength, download, upload, installation completions, battery charge remaining, state of on and off of hotspot, bluetooth, airplane mode, charging and time.

The notification strip shows the progress of downloading, uploading, installation of files, apps, updates etc.

USE CASES

1. Notifying about the ongoing progress of an event or the status of a quantity which fluctuates dynamically from zero to maximum.
2. Giving an overview of data updates for a set of user activities to inform users about all inofrmation and how they relate to each other.
3. Giving information on a real time basis about location, contact, current activity etc.

STRATEGIES

1. Indicate clearly the minimum and maximum points in a range of user inputs or system generated values to enable users to estimate quantities.
2. Reduce complexity by converting continuous data into discrete units.
3. Color code different elements on the screen based on the progress status or functionality of each element.
4. Use the best suited means of visualization (graph, piechart, knob, slider, timeline) based on the number of elements and the information to be highlighted.
5. In case of multiple data points in a single screen, make appropriate use of forms and shapes to prioritize the data to enable better understanding.

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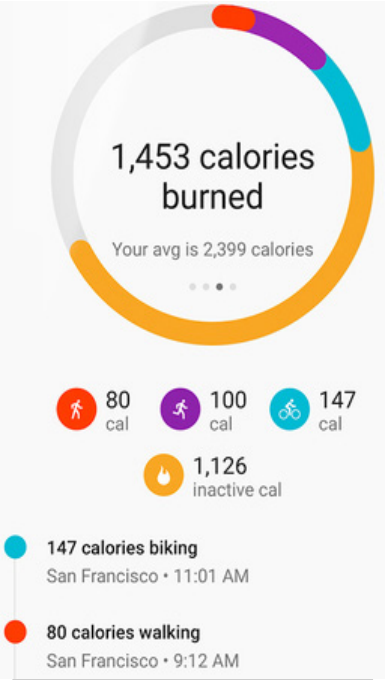

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Google Fit is a service that tracks health metrics like step count and real-time stats of runs, walks and rides in terms of speed, pace, route, elevation and the calories burnt. The data collected is aggregated or broken down and shown as per the user preference. The interface keeps the user motivated.

USE CASES

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3. Giving information on a real time basis about location, contact, current activity etc.

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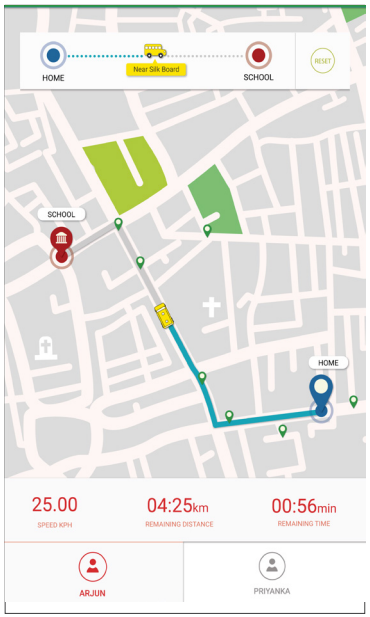

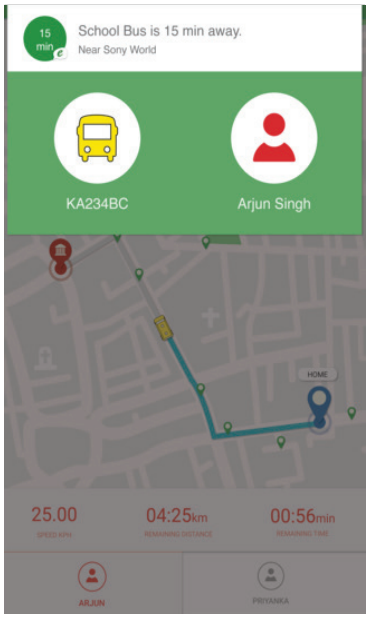

Visualize quantitative information

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School bus tracker feature on Educhat app notifes real time updates on school bus locations. The notifications displays the bus number and driver's details and help the user analyze the driver's performance, bus delays, over speeding, unscheduled bus stops or other emergencies.

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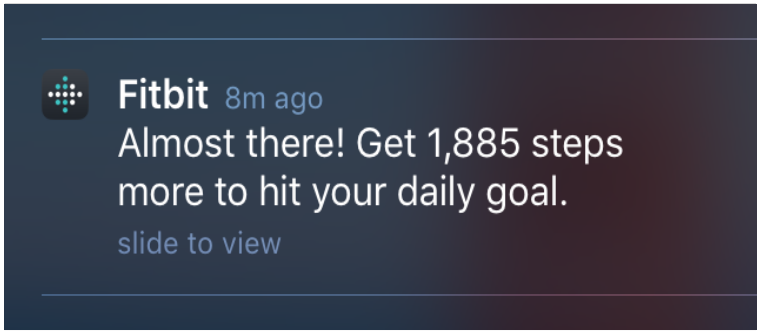

Use notification as a nudge

When the notification is a reminder or a suggestion that hopes to invoke a user response, make it a well calculated nudge (based on time and frequency) to ensure service/app stickiness.

Fitbit sends notifications to let the user know the number of steps required to complete a goal. By constantly reminding the user that he/she is nearing the goal, the notification motivates the user to finish the task. Slide to view option takes the user to the page that contains detailed data of the user's activities.

USE CASES

1. Sending notifications that are both informative and motivating for the user to want to continue a particular task.
2. Keeping the user updated and reminding enough number of times to get an action completed.
3. Feeding relevant information when users are more positively disposed to consider acting upon it.

STRATEGIES

1. User statistics are helpful when it comes to gathering data relevant to the particular service function.
2. Introduce visually appealing characters/mascots with various levels of customization that keep the user engaged .
3. Add a human touch to the text in the action points of the notifications with which the user interacts.
4. Give smart reasoning/back the information with competitive data for the user to want to react to it on a regular basis.

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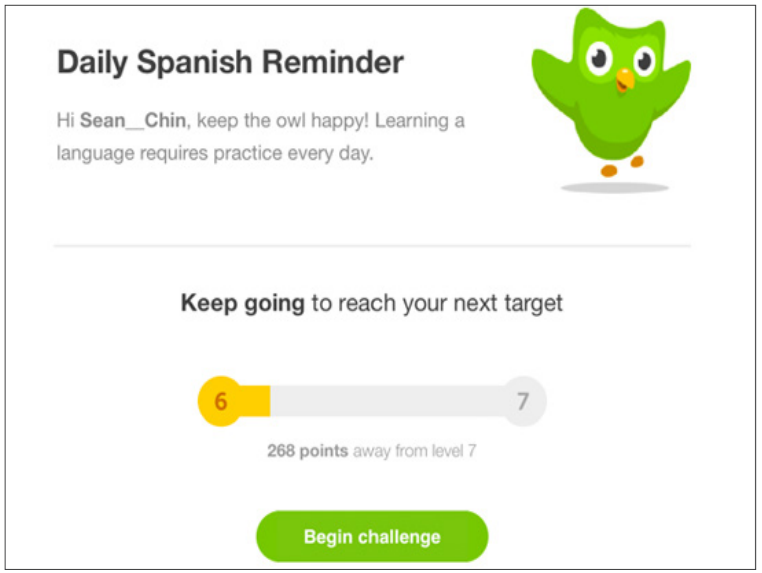

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Duolingo keeps track of the user's practice sessions and frequency of practice. It gives daily notifications and gives credit points for daily practice session consistency. It gives notifications on a timely interval, if the user does not practice for several days.

In this way the user gets motivated to schedule a time for the learning session. The motto is to keep the owl, a character of duolingo, happy.

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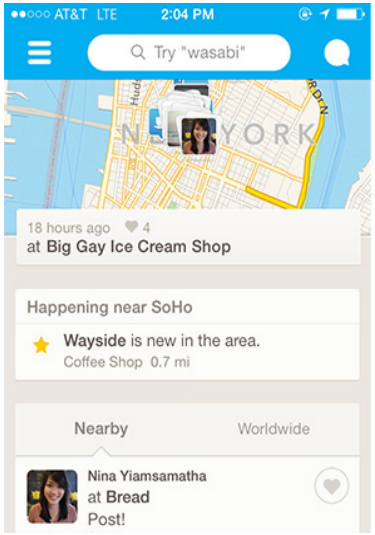

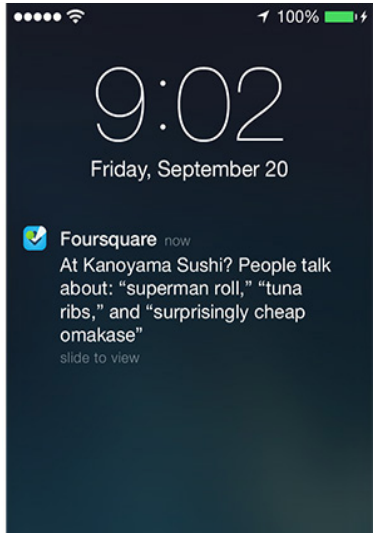

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The Foursquare app helps you discover new places, with recommendations from a community you trust. It is primarily for letting the user's friends know the user's location.

The user can also collect points, prize "badges," and eventually, coupons, that can be used in daily acitivites.

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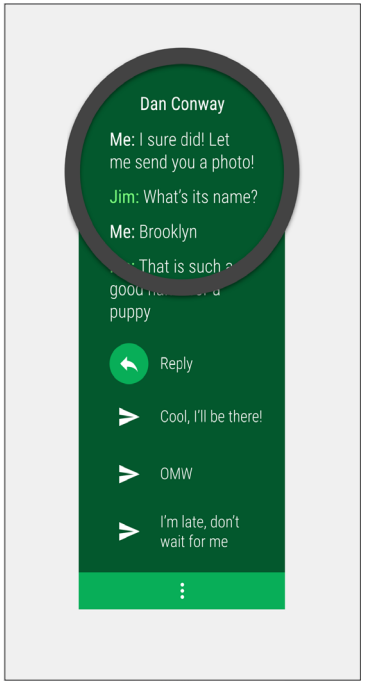

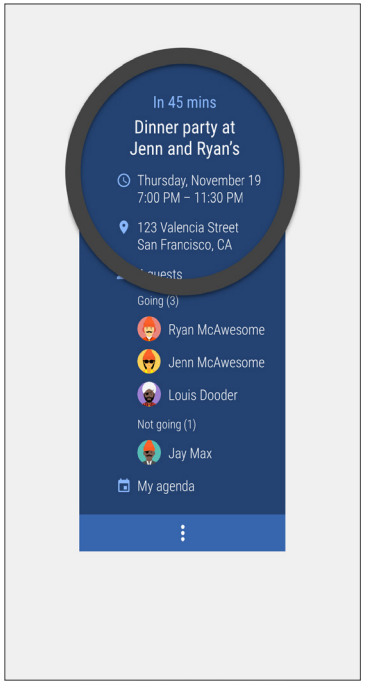

Enable appropriate medium of interaction

Choose the medium of a notification/alarm based on how easily and quickly the user can interact and extract information from the device or application.

In smart watches, the notifications are shown in condensed form, so that it fits the screen. It shows the most important keyword of the notification. While texting, smart answering prediction shows some of the predicted answers to choose from which reduces the typing effort on a small screen.

USE CASES

1. Giving quick real-time feedback to user inputs in physical devices that are accessed by many users at any time of the day.
2. Maintaining visual continuity and avoiding loss of information in smaller user interface areas.
3. Enabling information to be notified without any/much effort from the user's side.

STRATEGIES

1. Use prominent audio output for differentiating between successful and unsuccessful inputs.
2. Use visual elements like LED output in different colors to notify various states or events.
3. Use minimal text in case of smaller interface to ensure optimum usage of the available real estate space.
4. Use appropriate icons or imagery to replace text and minimise the space constraint.

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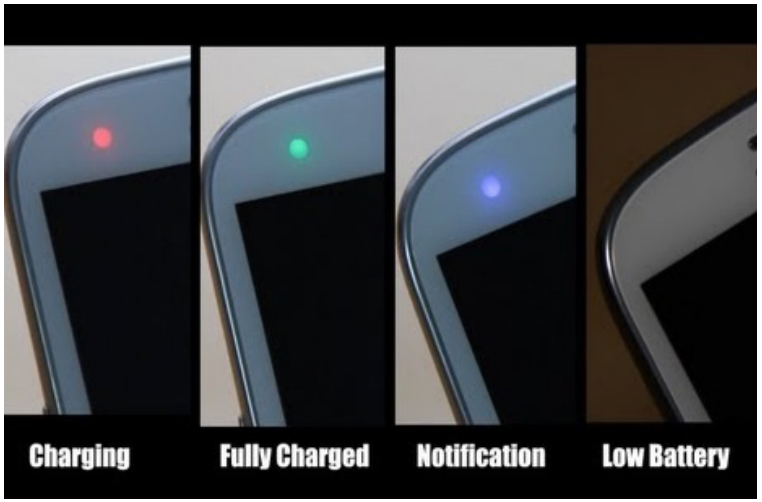

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The LED indicator at the top right corner of the phone indicates the charge left on the phone. It changes colour as defined by the user for a range of values of percentage of charge left. When the screen is off in the power saving mode, this is the only indication which shows that the phone is still switched on or active at that moment.

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1. Notifications and alerts

Maintain functional continuity

When the notification of any particular event requires a user response, follow it up with minimal number of actions to help the user react to it seamlessly.

Amazon sends out promotional reminders everyday during the sales season to encourage the user to shop directly after taking a look at the promotional information. On clicking the product, the user is directly taken to the product page thus improving ease of search.

USE CASES

1. Sharing maximum information out of any promotional notification at ease.
2. Showing quick input options to react to any alert effortlessly in a single step.
3. Reminding the user about multiple events on time and helping to choose how to react to them.

STRATEGIES

1. Have a single action button in the notification that directly takes the user to the required pages from the notification.
2. Let users have the options to customize the settings according to their convenience.

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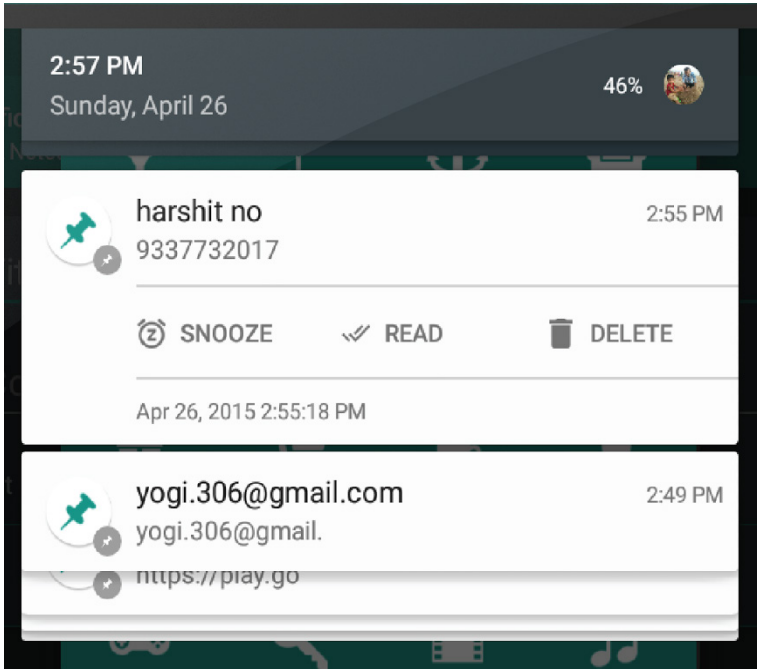

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Smart options of 'Snooze', 'Read' and 'Delete' are given in the notification from the Notes app. The pinned reminders can be snoozed to a later time, as suggested by the user, or deleted with a single click. If the user doesn't remeber what the rmeinder's title suggests, then he/she has the option to read the entire text with a click.

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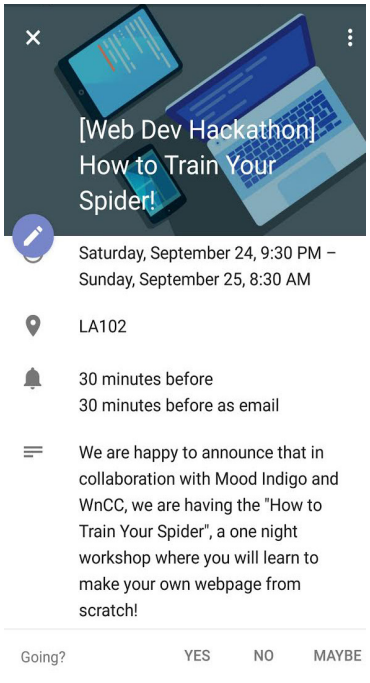

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Google Events recognizes data from incoming mails and converts it into events with a reminder for the user. It analyses keywords like the event timing, event venue, event title and description into specific fields of the event notification. In the short notification it shows only the important fields and allows the user to check the map or ways to reach the event on time.

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2. Keeping context

Microinteractions that make experiences feel coherent and organic.

GENERAL PRINCIPLES

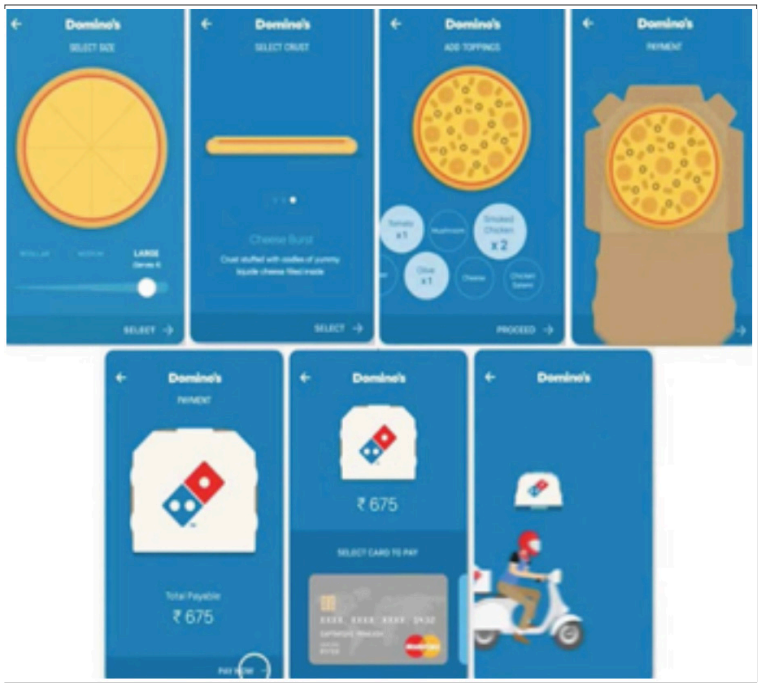
1. Maintain continuity in between sequence of interactions

2. Extend experiences across media

3. Keep in touch with the moment

4. Interact with physical objects through virtual interfaces

2. Keeping context



Maintain continuity within a sequence of interactions

A continuous flow through the sequential steps required to accomplish a task is essential to enhance the user's engagement.

Customizing & ordering a pizza requires user to follow a sequence of steps. The microinteraction in this example is the animation that makes the transition between steps smooth & continuous. Only the relevant actions required at each step are presented to the user. The graphical pizza is continuous across all the steps, in order to maintain context and reflect the previous decisions made by the user.

USE CASES

1. Accomplishing a complex task without losing focus or context.

2. Preventing disjointed/jarring experience in smaller screen sizes.

STRATEGIES

1. Identify the individual steps that make up a task.

2. Animate form, colour and orientation of existing UI elements, to generate new element.

3. Show what needs to be done in a particular step and how to proceed forward.

2. Keeping context

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A continuous flow through the sequential steps required to accomplish a task is essential to enhance the user's engagement.

In the Apple Watch, animations are the primary microinteractions that provide consistency while interacting with the device. This example captures the transition between screens. The lines and curves of the first screen animate into the second screen, creating a highly consistent and smooth experience.

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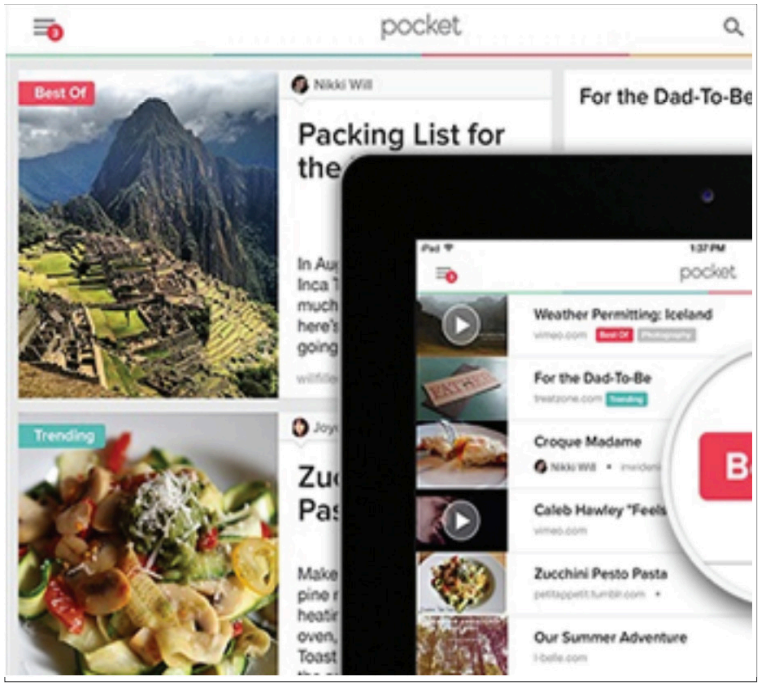


Extend experiences across media

Sync data accross the digital ecosystem the user has created around him/her. This allows the user to consume information as per his/her convenience and also leverage the full potential of the device.

Pocket is an example of '*microinteraction as a product*'. This product allows a user to save a link to read later. The link is then synced across all of the user's devices, where Pocket app is installed.

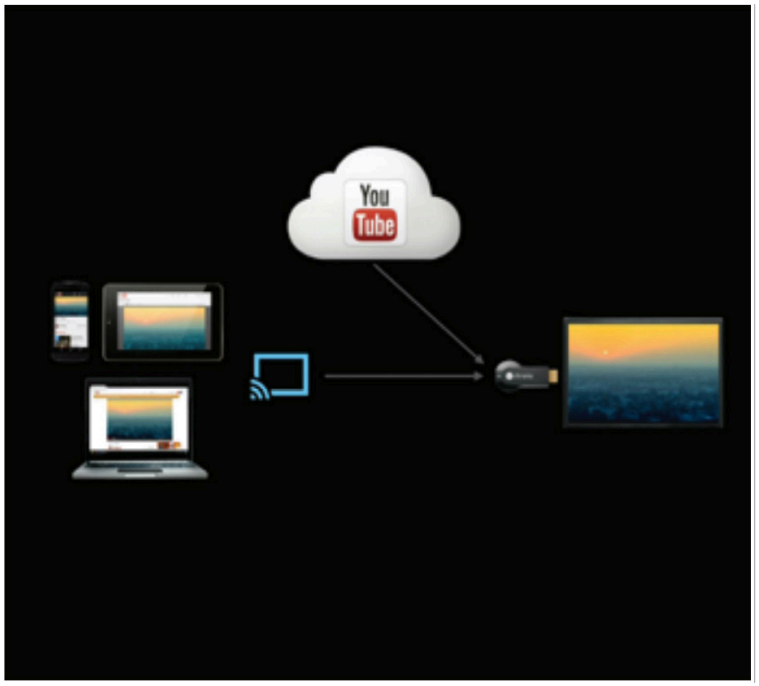
USE CASES

1. Enabling portability of data and content.
2. Utilizing the opportunities that the other medium provides.

STRATEGIES

1. If an ecosystem of devices enables similar ways of consuming information then the information should be synced across all of these devices.
2. Establish common protocols across devices such that they understand the context of the task being performed.
3. Generate device-centric interactions based on the properties of the device from which content will be consumed.

2. Keeping context



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Chromecast is a hardware media product developed by Google, that connects to TVs or larger monitors through an HDMI port.

Following which, users can stream their media to the TV or monitor with the click of a button.

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Keep in touch with the moment

Microinteractions should reflect contextual information related to user's time, location, relevant events, intent, motive and actions.

The above example depicts a Google search result of 'Bletchley Park'.

Bletchley Park was the central site for Britain's codebreakers during World War 2. The microinteraction animates an encrypted word into 'Bletchley Park', hence setting the context for the content search.

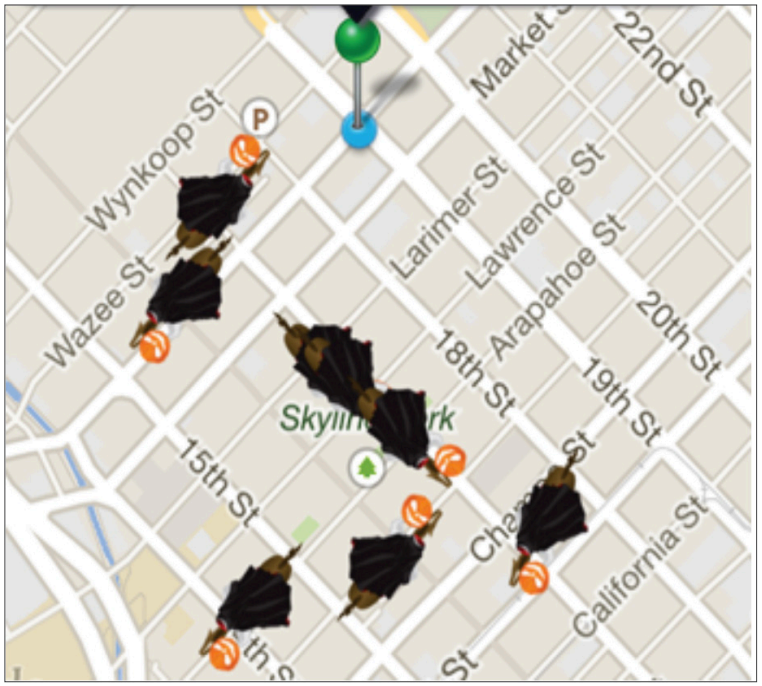
USE CASES

1. Learning things visually rather than from text.
2. Engaging with the product in new and exciting ways.
3. Minimizing negative experiences.

STRATEGIES

1. Represent the semantics of the context with dynamic visuals.
2. Make products aware of the real world.
3. Minimize the magnitude of negative experiences by injecting delightful context sensitive responses.

2. Keeping context



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The above example depicts a real world aware microinteraction. On Halloween, Uber replaced the car icons to witches on broomsticks. The choice of the witch icon is also very contextual as it signifies motion, which closely relates to what Uber essentially does.

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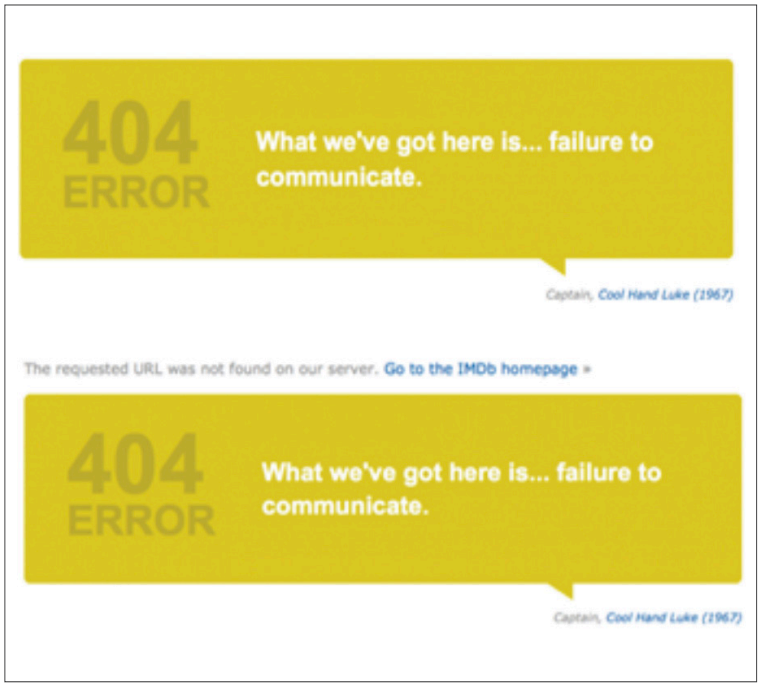

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The above example depicts the IMDB webpage error messages. The website, being a movie dedicated medium, uses quirky movie quotes as error messages. Every error message is unique and meaningfully curated corresponding the error that has occured.

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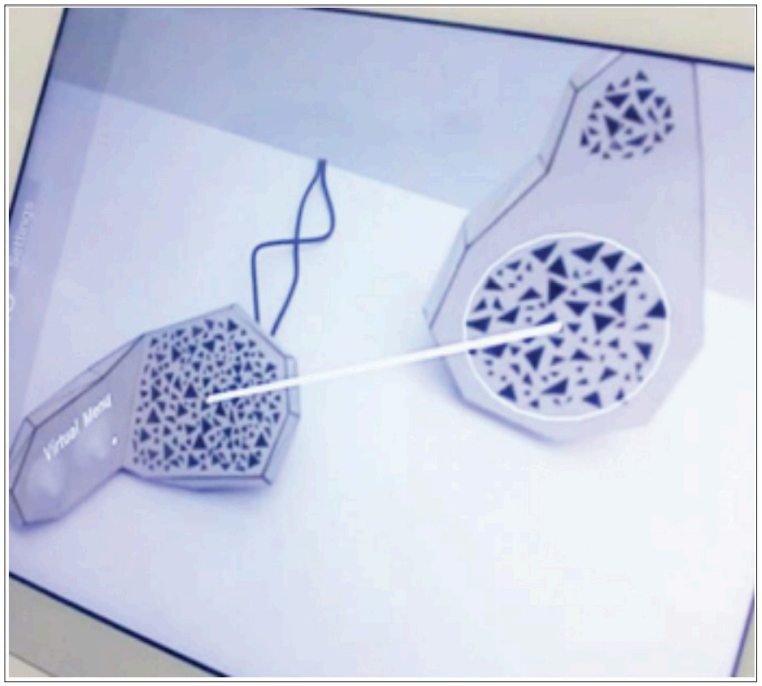

Interact with physical objects through virtual interfaces

As the digital world is gradually moving out from the screen and blending into our environment, it is important to understand how microinteractions enable us to interact with smart physical objects.

This example shows an external speaker on the right, being connected to a radio by drawing a line from the radio to the external speaker (microinteraction). This is done by pointing an iPad camera at the radio and drawing the line on the screen. Such microinteractions can be used to establish relationships between physical objects.

USE CASES

1. Connecting physical objects to accomplish a task.
2. Altering the properties of a physical object.
3. Making physical objects perform tasks .

STRATEGIES

1. Use intuitive patterns like drawing a line or a boundary around physical objects on a digital interface to group or establish relationships among those physical objects.
2. Use virtual interface elements such as numeric keypads, sliders, knobs etc. to change property values of physical objects.
3. Use virtual action triggers and rules to get the physical object to perform a task.

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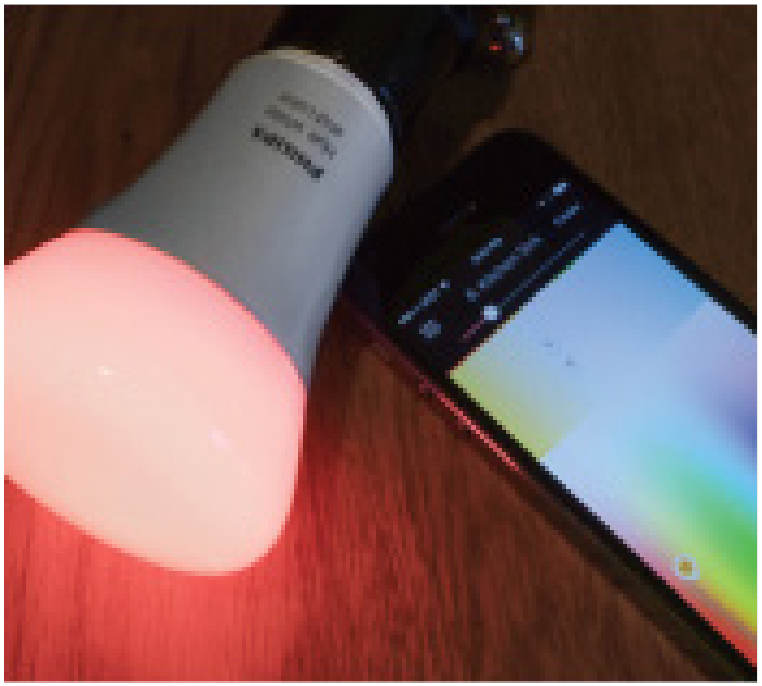

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In this example, the users can choose the desired colour of a Phillips Hue light by interacting with a HSL colour picker (microinteraction), on the Hue app.

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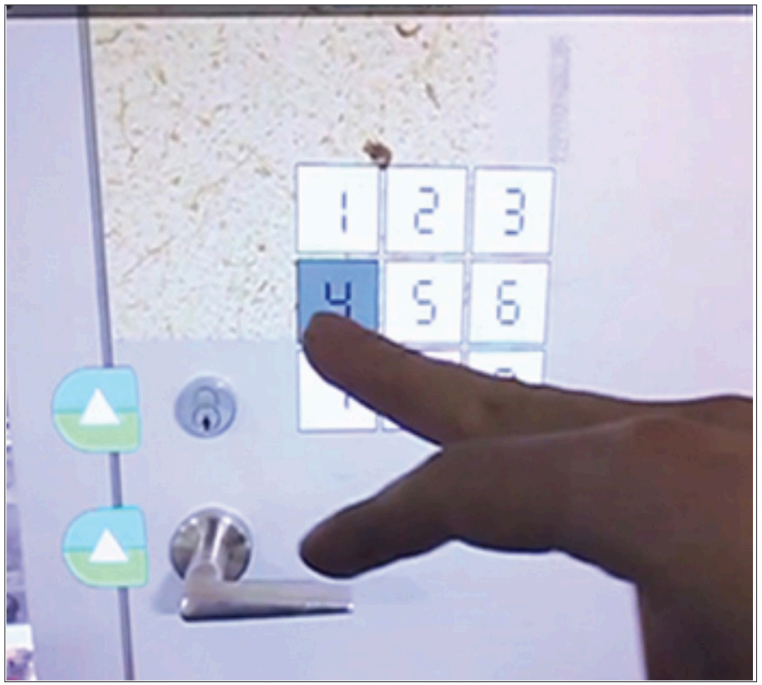


Interact with physical objects through virtual interfaces

As the digital world is gradually moving out from the screen and blending into our environment, it is important to understand how microinteractions enable us to interact with smart physical objects.

In the example above, an Augmented Reality app installed on a tablet, is being used to generate a numeric keypad when the tablet is aimed at the locking mechanism of a door. The user can type in the passcode through the virtual keypad to unlock the door.

USE CASES

1. Connecting physical objects to accomplish a task.

2. Altering the properties of a physical object.

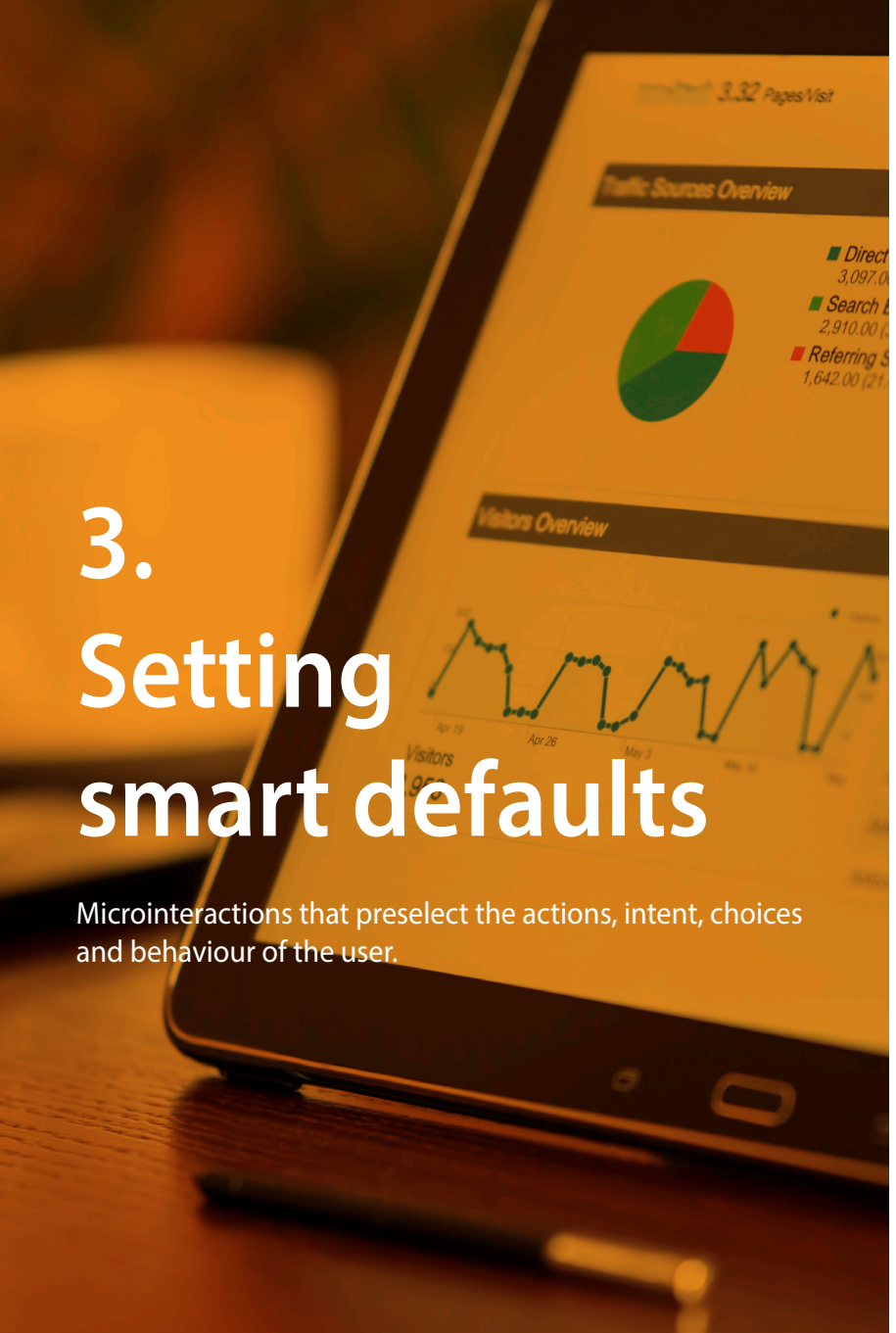
3. Making physical objects perform tasks .

STRATEGIES

1. Use intuitive patterns like drawing a line or a boundary around physical objects on a digital interface to group or establish relationships among those physical objects.

2. Use virtual interface elements such as numeric keypads, sliders, knobs etc. to change property values of physical objects.

3. Use virtual action triggers and rules to get the physical object to perform a task.



3. Setting smart defaults

Microinteractions that preselect the actions, intent, choices and behaviour of the user.

GENERAL PRINCIPLES

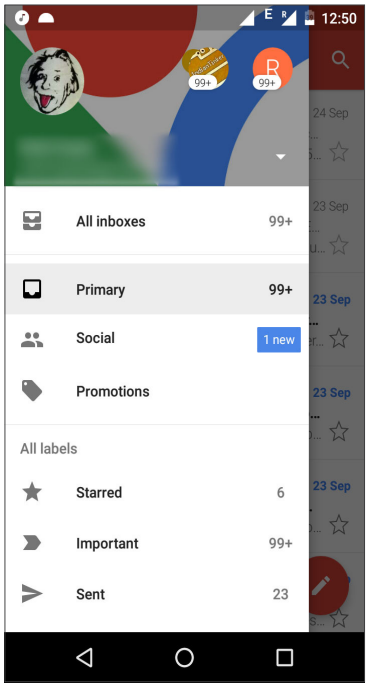
1. Set preferences that reduce complexity

2. Bring forward recent and repetitive actions

3. Anticipate most probable user actions from a set of possibilities

4. Drive the process of selection amongst a large pool of choices

3. Setting smart defaults



Set preferences that reduce user effort

Transfer data or reuse pre-existing information when setting up the interface to achieve a desired task that requires the user to choose from multiple options.

In this microinteraction, based on the content and sender of the email the category of the email is automatically decided by Gmail. This automatically sorts a large list of emails into discrete categories.

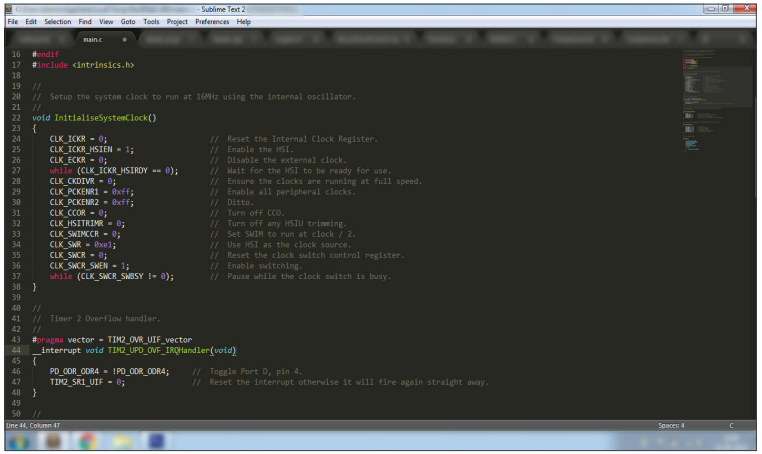
USE CASES

1. Viewing and interacting with long lists.
2. Accessing content with different constraints.
3. Working with large volume of functional text.
4. Setting defaults for small/no screen devies.

STRATEGIES

1. Organize cluttered lists for the user in simple default categories.
2. Prioritize the listing of content based on the automatically detected context or people.
3. Change the settings of parameters automatically based on user's current situation to make sure the intent of the action is preserved.
4. Enhance the clarity of content by applying a default style to the content to make relevant content show up.
5. For systems with a reduced interface, provide settings/ conguration interface on a more general and capable platform and provide regular feedback at all steps to keep the user informed.

3. Setting smart defaults



Set preferences that reduce user effort

Transfer data or reuse pre-existing information when setting up the interface to achieve a desired task that requires the user to choose from multiple options.

Code Editors automatically highlight and arrange the code in a file based on its extension making it easier to review the code.

The various keywords are highlighted using different colors to allow the user to clearly differentiate between them and the actual logic that is written.

USE CASES

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STRATEGIES

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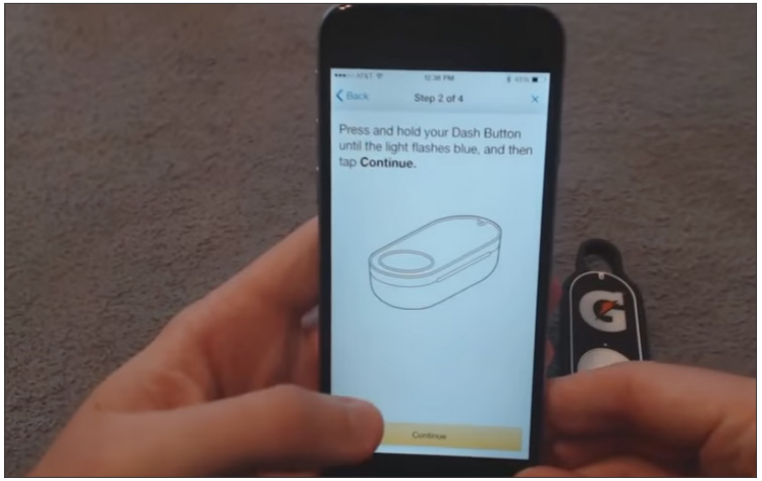

Set preferences that reduce user effort

Transfer data or reuse pre-existing information when setting up the interface to achieve a desired task that requires the user to choose from multiple options.

The smartphone provides a larger interface to configure the Amazon Dash button and sets it up to the default settings based on user's account details.

Sound waves are used to transfer the settings to the small button.

USE CASES

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2. Accessing content with different constraints.
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4. Setting defaults for small/ no screen devies.

STRATEGIES

1. Organize cluttered lists for the user in simple default categories.
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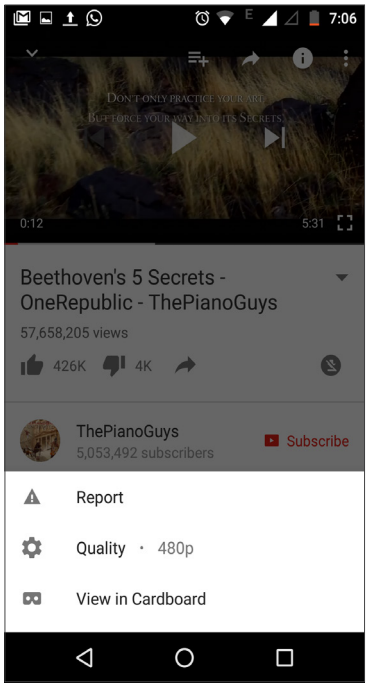

Set preferences that reduce user effort

Transfer data or reuse pre-existing information when setting up the interface to achieve a desired task that requires the user to choose from multiple options.

Youtube automatically adjusts the quality of the web streaming based on the user's internet speed. This allows users to watch content without adjusting the quality settings themselves.

USE CASES

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2. Accessing content with different constraints.
3. Working with large volume of functional text.
4. Setting defaults for small/no screen devies.

STRATEGIES

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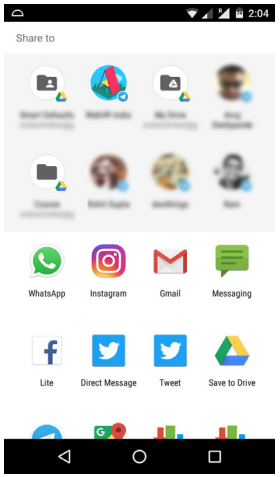
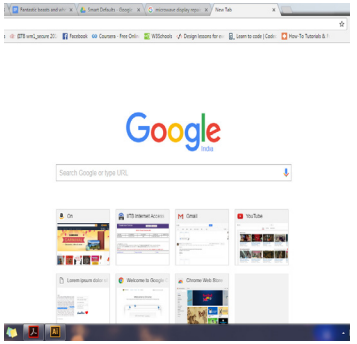




Bring forward recent and repetitive actions

If an action is being performed by the user multiple times recently, the options should be suggested as the next choice.

When sharing a picture from the gallery of an Android smartphone, the share dialog lists the last used interactions which helps users in repeating the previous task. It also presents the other Apps that accept the picture as a data.

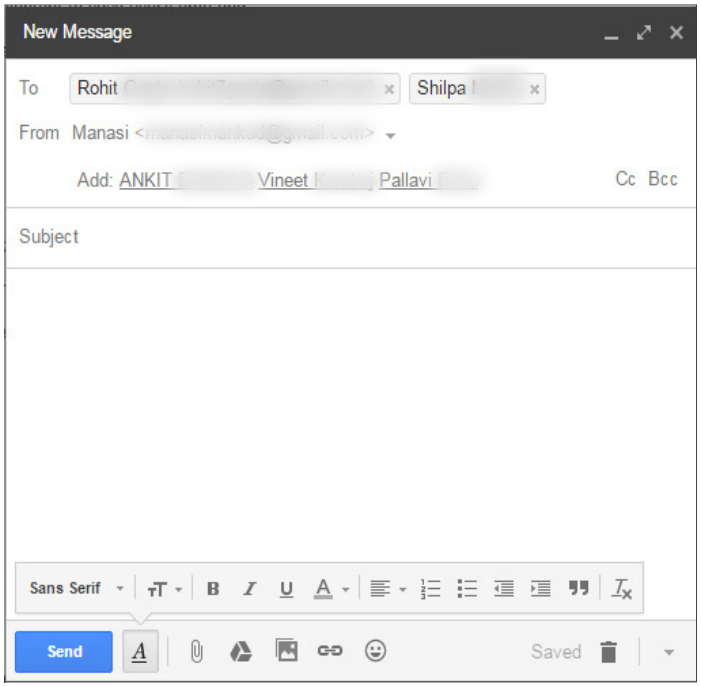
USE CASES

1. Revisting frequently used items.
2. Sharing content quickly.
3. Adding multiple items to a list.

STRATEGIES

1. Provide users with quick options based on his history to allow the user to achieve tasks quickly.
2. Show the possible ways in which the media can be shared and present them in a prioritized order.

3. Setting smart defaults



Bring forward recent and repetitive actions

If an action is being performed by the user multiple times recently, the options should be suggested as the next choice..

While composing a new message on Gmail, if it detects a frequent or recent recipient or a group of recipients, it will automatically suggest to add the remaining contacts from the group of people the user would usually interact with over email. This makes it easier for the user to repeat the action and choose the same group or a part of the group of people again in the future.

USE CASES

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2. Sharing content quickly.

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STRATEGIES

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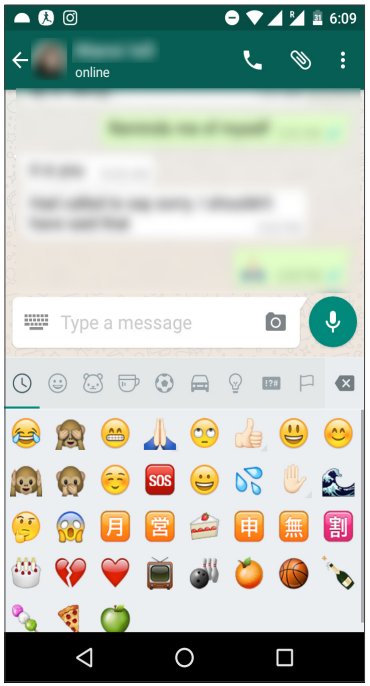

Bring forward recent and repetitive actions

If an action is being performed by the user multiple times recently, the options should be suggested as the next choice.

Whatsapp has a separate category for recently used emojis which is placed in the foremost tab of the emoji options. This helps the user quickly pick out the emojis most recently used instead of sifting through the various categories and looking for the correct emoji, thus making his/her chatting experience faster and more enjoyable.

USE CASES

1. Revisting frequently used items.
2. Sharing content quickly.
3. Adding multiple items to a list.

STRATEGIES

1. Provide users with quick options based on his history to allows the user to achieve tasks quickly.
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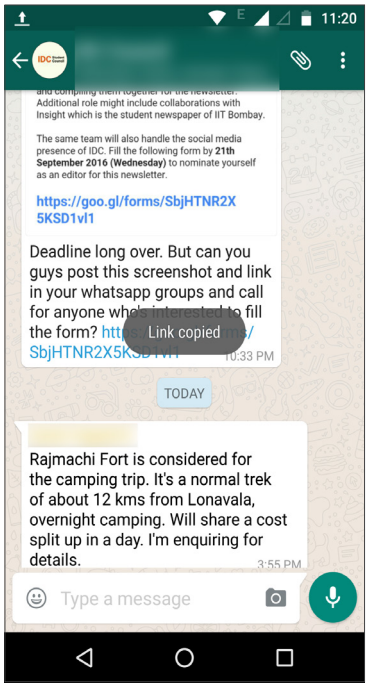


Anticipate probable user actions from a set of possibilities

User behaviour can be predicted. Use that information to create better experiences.

Short pressing a link on whatsapp causes the link to open, whereas long pressing the link will directly copy the link. Since copying of the link is probably the most used action by users, it is taken as the default result of the action.

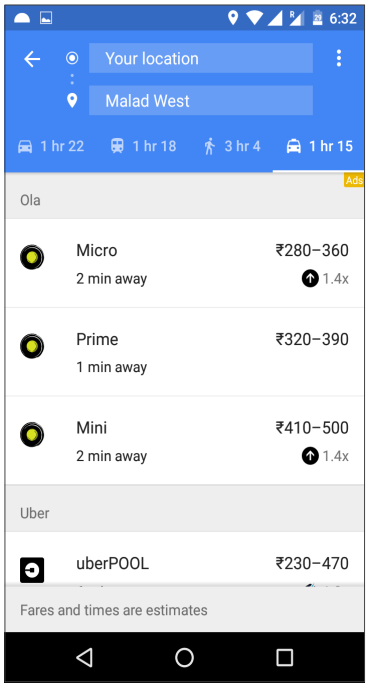
USE CASES

1. Interacting with special elements in a given text.
2. Completing a series of tasks to acheive a goal.
3. Replying quickly to common conversational statements.
4. Reducing the number of steps taken to perform the most probable intended action.

STRATEGIES

1. Predict and suggest actions based on user behavioural patterns.
2. Integrate useful services to help the users achieve their tasks seamlessly.
3. Provide affordances only when required to keep the interface less cluttered.

3. Setting smart defaults



Anticipate probable user actions from a set of possibilities

If user behaviour can be predicted, use that information to create better experiences.

After looking up places or directions on Google Maps, users most often would want to call a taxi or know the fares of the same, so integrating Google Maps with cab service previews enhances the experience of the user and makes the transportation process smoother and more pleasurable for the user.

USE CASES

1. Interacting with special elements in a given text.
2. Completing a series of tasks to acheive a goal.
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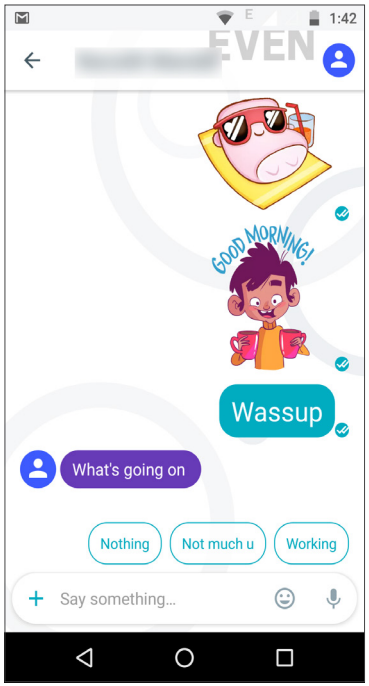

Anticipate probable user actions from a set of possibilities

If user behaviour can be predicted, use that information to create better experiences.

Google Allo predicts what the user might want to reply to common conversational questions and statements. It detects certain words and chain of words and suggests common replies for the same, which the user can choose to use for quick replies instead of typing repeatedly.

USE CASES

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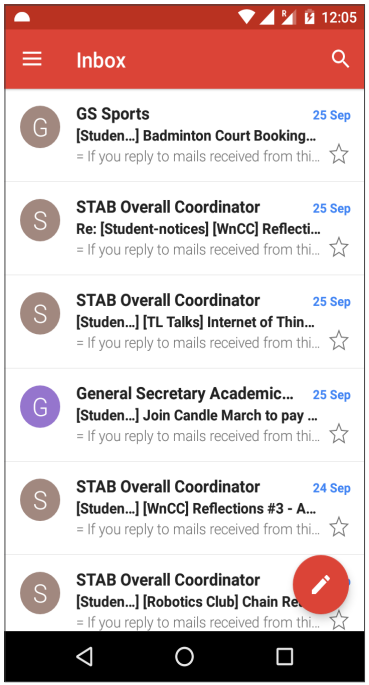

Anticipate probable user actions from a set of possibilities

If user behaviour can be predicted, use that information to create better experiences.

The Gmail App on Android by default shows a compose icon on the first screen. This icon is not available on other screens. This reduces the number of steps required to do the most probable activity when the user opens this screen.

USE CASES

1. Interacting with special elements in a given text.
2. Completing a series of tasks to acheive a goal.
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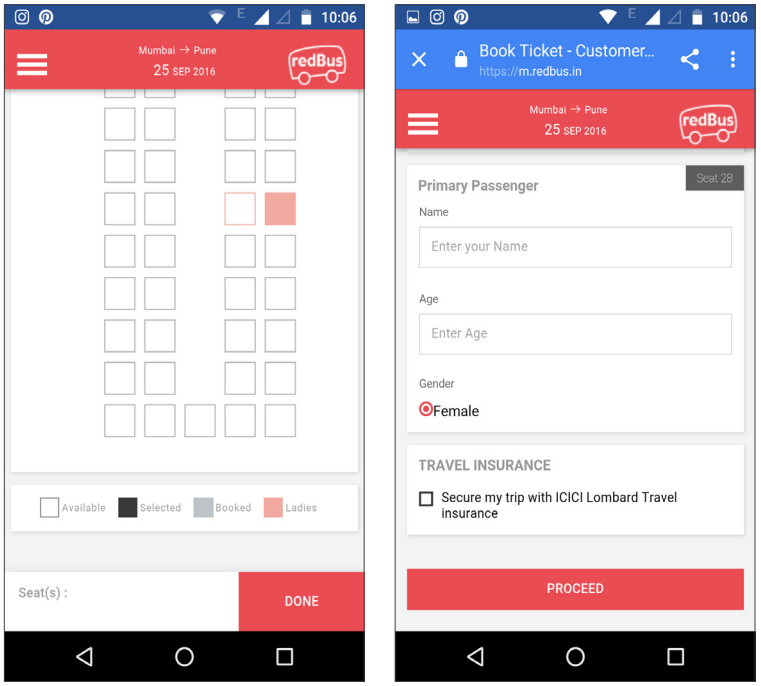


Drive the process of selection amongst a large pool of choices

Give the user a choice or the lack therof, depending upon the context to craft seamless experiences.

RedBus has a default restriction while booking a seat next to a female passenger. The user booking the seat must necessarily be female. No other option is allowed.This protects the interest of the passengers.

USE CASES

1. Selecting options for users with special needs.

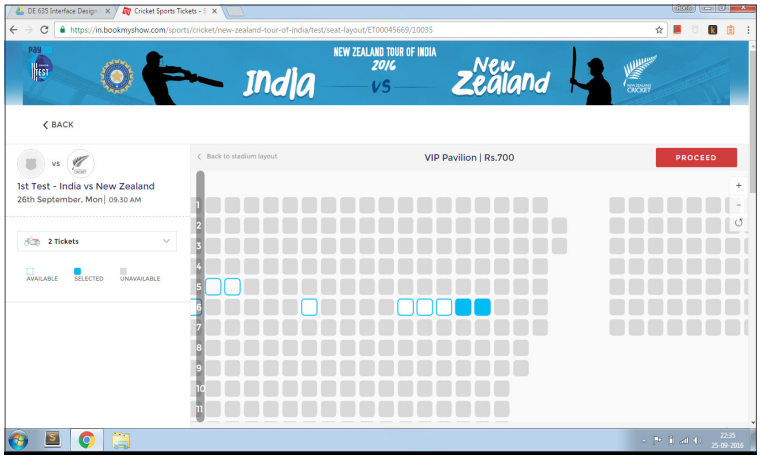
2. Taking similar decisions for multiple users in one interaction.

STRATEGIES

1. Understand users' cultural and moral requirements.

2. Suggest grouped choices.

3. Setting smart defaults



Drive the process of selection amongst a large pool of choices

Give the user a choice or the lack thereof, depending upon the context to craft seamless experiences.

When booking tickets for a group, the BookmyShow interface shows the possible combinations of seats for the user and suggests options from a huge choice pool so the group can sit together . It also tries to allocate seats such that a single seat is not left as it is diffuicult for the seller to sell it.

USE CASES

1. Selecting options for users with special needs.

2. Taking similar decisions for multiple users in one interaction.

STRATEGIES

1. Understand users' cultural and moral requirements.

2. Suggest grouped choices.

4. Interacting with data elements

Microinteractions that guide user's data input methods and navigation modes.

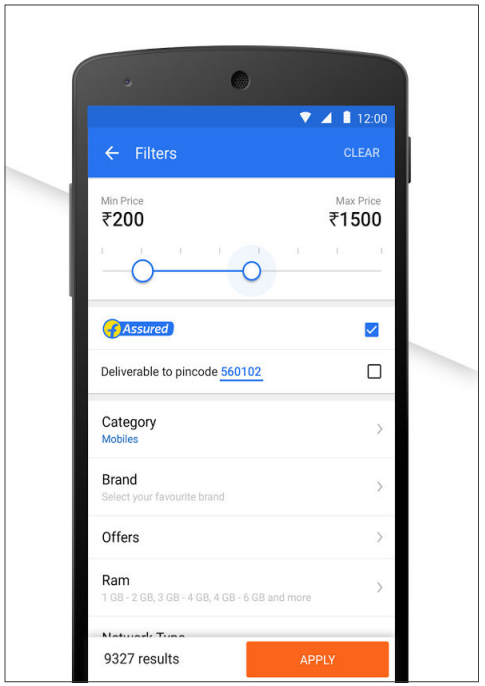
GENERAL PRINCIPLES

1. Provide appropriate input method

2. Provide live feedback

3. Navigating through content

4. Interacting with data elements



Provide appropriate input method

Understand the nature of the data expected from the user and choose appropriate input method to match it.

In this micro interaction, the price range has been selected by adjusting the slider. The left end of slider is the lower price range and right end indicates higher price range.

The price value is confirmed through the highlighted (blue) live display above the slider.

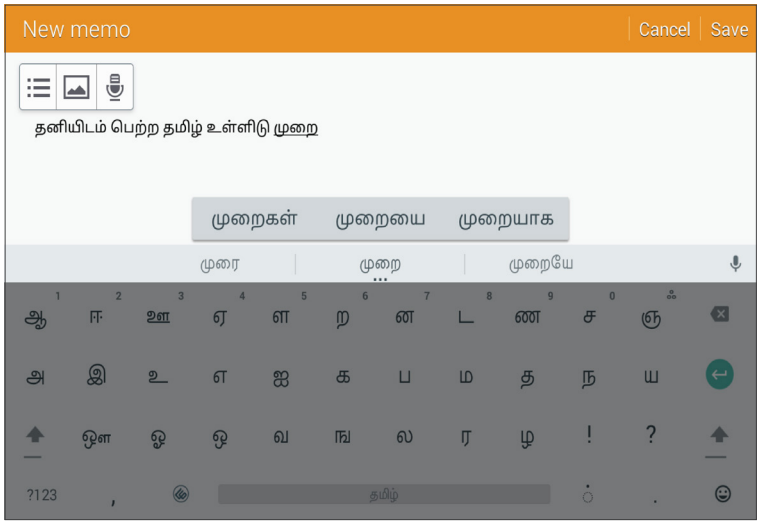
USE CASES

1. Choosing the option with quick interactions.
2. Using keyboardless input options.
3. Ensuring autocorrection in text input options.
4. Offering alternatives to choose from.

STRATEGIES

1. Use a slider instead of typing the details when input is a range.
2. Instantly suggest words for better text inputs.
3. Avoid the keypad by employing radio buttons and checkboxes.

4. Interacting with data elements



Provide appropriate input method

Understand the nature of the data expected from the user and choose appropriate input method to match it.

In this micro interaction, if the user types a word or sentence, then the word suggestions will appear subtly above the keypad . More complex words are offered upon hover.

USE CASES

1. Choose the option with quick interactions.

2. Using keyboardless input options.

3. Ensuring autocorrection in text input options.

4. Offering alternatives to choose from.

STRATEGIES

1. Use a slider instead of typing the details when input is a range.

2. Instantly suggest words for better text inputs.

3. Avoid the keypad by employing radio buttons and checkboxes.

4. Interacting with data elements

Provide live feedback

Enable the user to get an instant feedback for the interaction with data elements before proceeding to the next process.

Instagram allows filters to be applied over the image. The user can swipe left or right at the bottom of the preview window and select the desired filter. The microinteractions applied here are swipe and touch actions which is used to choose and enable the desired filter over image.

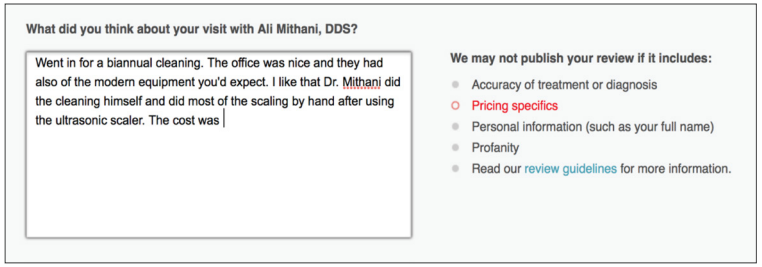
USE CASES

1. Getting live preview of the content before moving to the next step.
2. Enabling frequent cross checking methods to prevent errors.
3. Using visual indicators to know the ongoing process.

STRATEGIES

1. Use URL preview in social media to view the content before sharing.
2. Have a WYSIWYG editor for visual data.
3. Animate icons to indicate the nature of the task.
4. Detect and display content while typing text.

4. Interacting with data elements



Provide live feedback

Enable the user to get an instant feedback for the interaction with data elements before proceeding to the next process.

Review Editor has a live word detecting commentary option. If the user types anything related to the comments at the left, they will be enabled automatically and color changes from idle grey to red. The color transition with respect to the text typed in the editor is the microinteraction.

USE CASES

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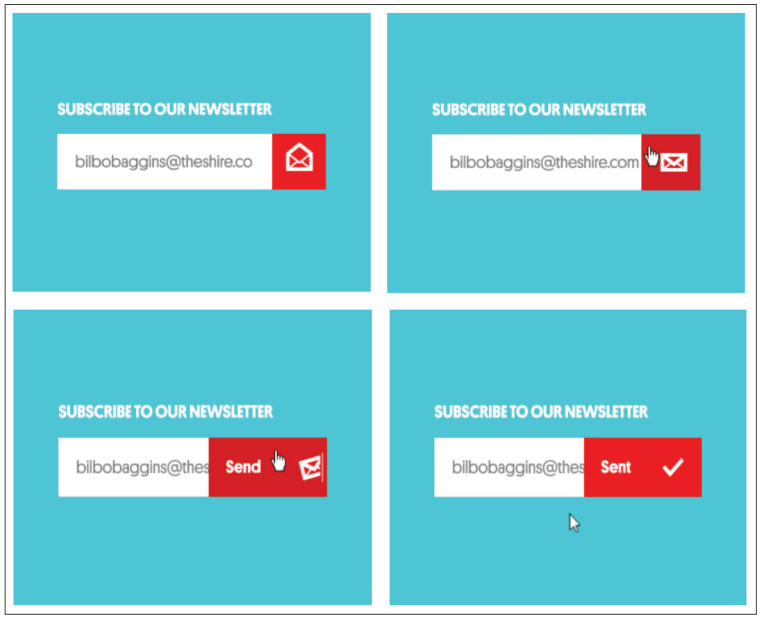

Provide live feedback

Enable the user to get an instant feedback for the interaction with data elements before proceeding to the next process.

The subscription of news letter is the task. The mailcover opens while typing the email address. After typing , if the user hovers over the letter icon the closed cover will be sent and the tick will be shown for sent option.

USE CASES

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2. Enabling frequent cross checking methods to prevent errors.

3. Using visual indicators to know the ongoing process.

STRATEGIES

1. Use URL preview in social media to view the content before sharing.

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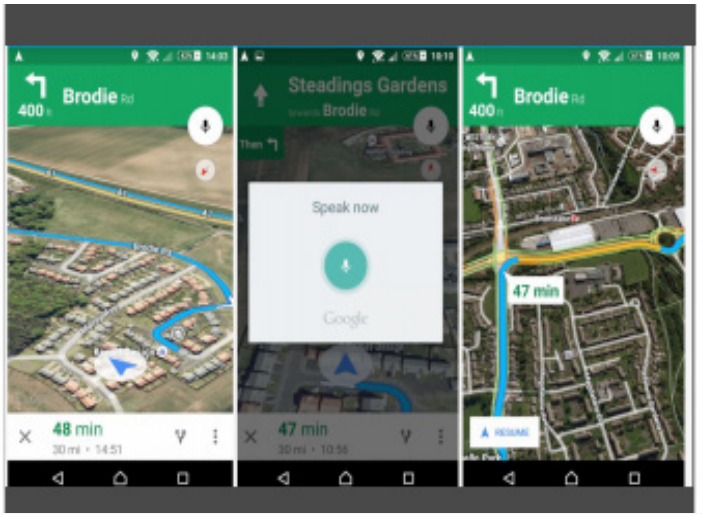


Navigating through content

Help the user to navigate through the data content and to explore the hidden elements.

In Google Maps, isometric view is obtained if the user tilts the map and swipes up with two fingers. Moving the fingers in a circular motion rotates the map. There are various voice commands that can be used in Navigation mode.

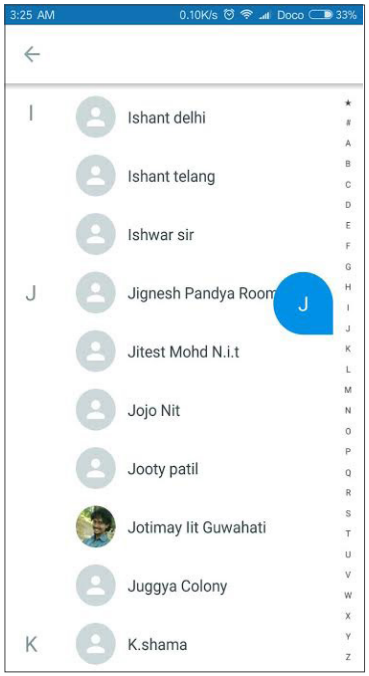
USE CASES

1. Prevent getting lost in the content.
2. Providing methods to unveil the hidden data elements.
3. Exploring vast amounts of data.

STRATEGIES

1. Multi touch gesture helps user to focus on details.
2. Interactive navigation icons and well defined colors prevent user from getting lost in the data.
3. Pop-ups of shortcuts/hints and indicators save user's time while exploring large amount of data.

4. Interacting with data elements



Navigating through content

Help the user to navigate through the data content and to explore the hidden elements.

The contact application in smartphones helps in identifying by filtering out in alphabetical order. When the user swipes along the right edge over alphabets the highlighted letter with zoomed balloon shows along with the list of contacts starting with the selected alphabet.

USE CASES

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4. Interacting with data elements

Navigating through content

Help the user to navigate through the data content and to explore the hidden elements.

The pinch and zoom is the common action in the smartphone which enables the user to observe intricate details. Normally this supports two finger gesture which is a direct interaction over the screen. This enables direct control of content by the user.

USE CASES

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STRATEGIES

1. Multi touch gesture helps user to focus on details.
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5. Writing, linking, sharing content

This topic deals with various microinteractions regarding writing, linking and sharing content through different on-line and offline platforms and finally suggests some strategies which can be applied according to the context.

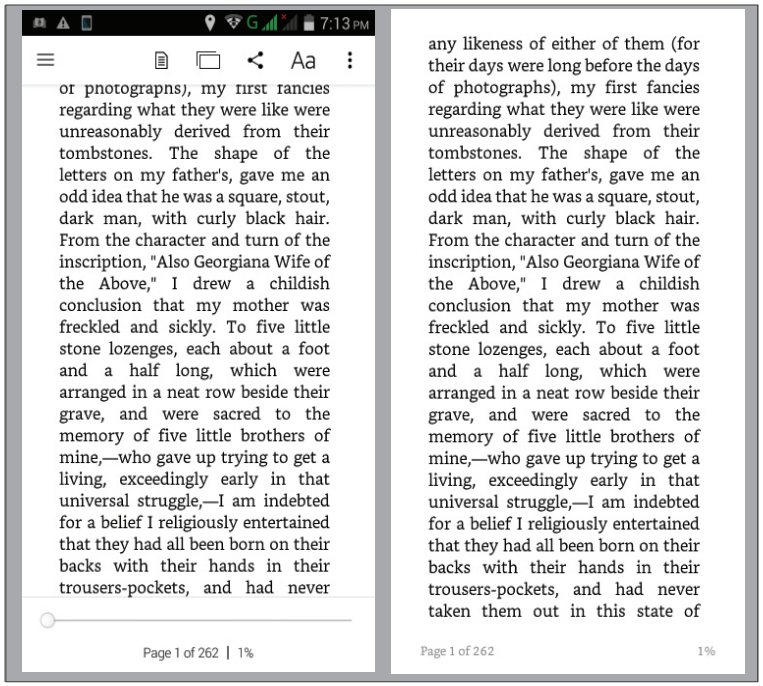
GENERAL PRINCIPLES

1. Highlight content that needs focus

2. Make links informative

3. Give realtime feedback of actions

5. Writing, linking, sharing content



Highlight content that needs focus

To engage the user more, the content should be distraction free. This ensures that the user stays focussed on a particular action and stays productive.

Reading apps such as kindle allows the users to hide other features while reading.This is done by tapping on the reading content once, thus enabling the reading mode.

USE CASES

1. Focus on content for precise content writing and easy content reading.

2. Identifying links easily on a webpage.

3. In reading mode, irrelevant content and features should not distract.

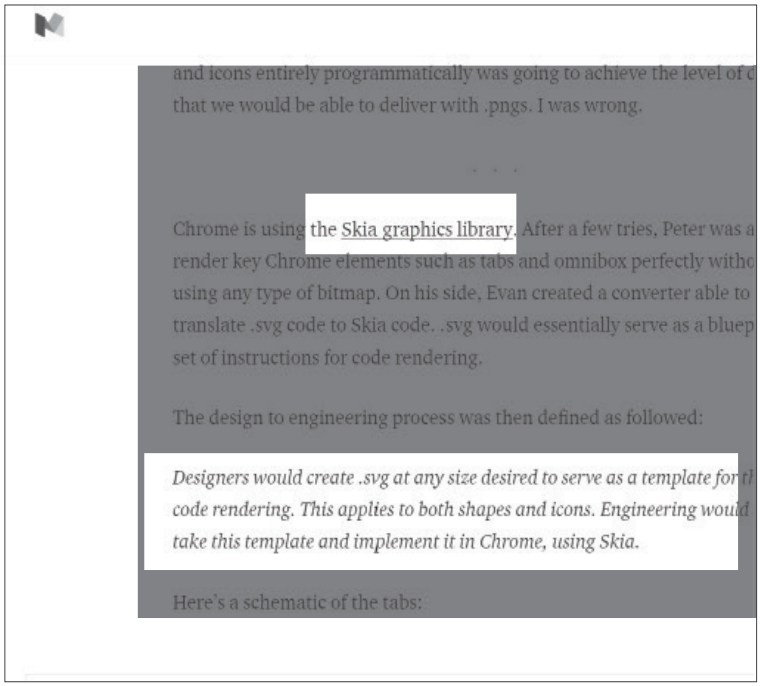
STRATEGIES

1. Enlarging the focus area.

2. Dim unnecessary features in the background.

3. Highlight content to be focussed on through underline, italics, bold, color coding etc.

5. Writing, linking, sharing content



Highlight content that needs focus

To engage the user more, the content should be distraction free. This ensures that the user stays focussed on a particular action and stays productive.

Medium allows its writers to bring in focus certain parts of content by underlining or making the content italics.

USE CASES

1. Focus on content for precise content writing and easy content reading.
2. Identifying links easily on a webpage.
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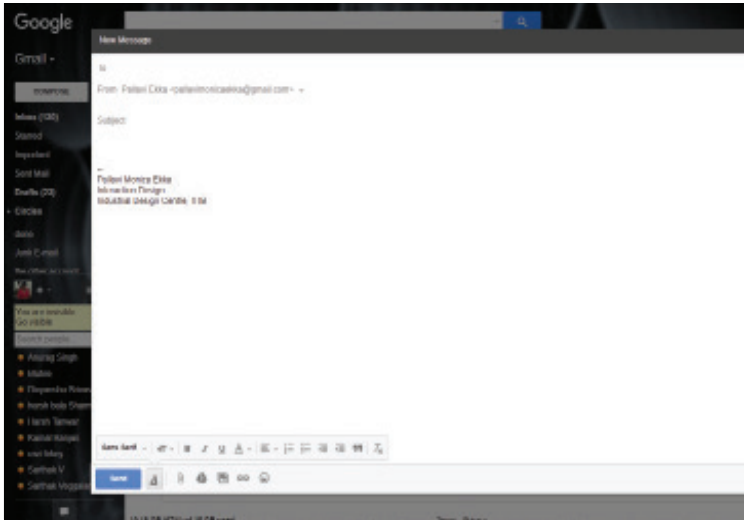
3. Highlight content to be focussed on thorugh underline, italics, bold, color coding etc.

5. Writing, linking, sharing content



Highlight content that needs focus

To engage the user more, the content should be distraction free. This ensures that the user stays focussed on a particular action and stays productive.

In this microinteraction from Gmail, clicking on the compose button opens a pop-up window and dims the background. The user cannot access any other part of the webpage and can perform only the action of composing a mail.

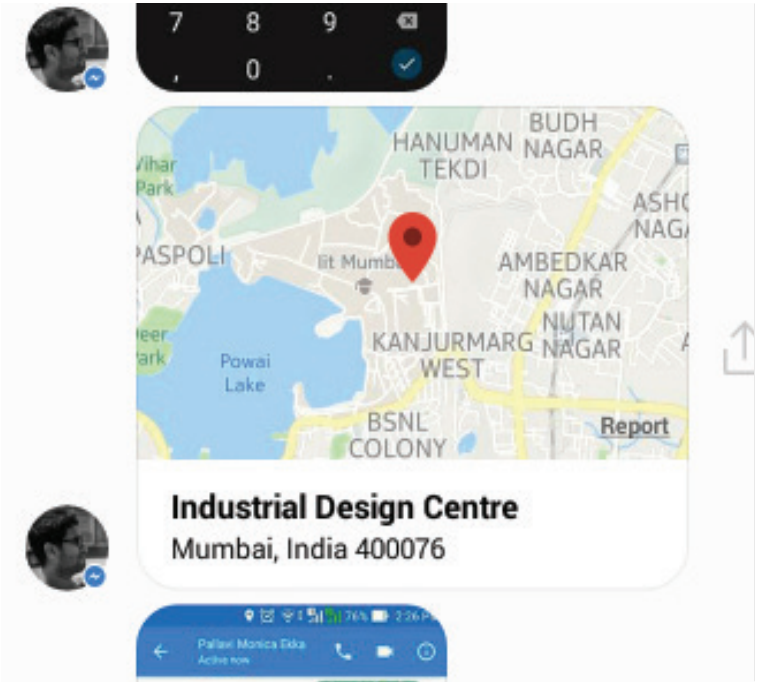
USE CASES

1. Focus on content for precise content writing and easy content reading.
2. Identifying links easily on a webpage.
3. In reading mode, irrelevant content and features should not distract.

STRATEGIES

1. Enlarging the focus area.
2. Dim unnecessary features in the background.
3. Highlight thorugh content to be focussed on underline, italics, bold, color coding etc.

5. Writing, linking, sharing content



Make links informative

Links should not be just plain, text URLs, rather they should contain information to facilitate understanding of the context.

In this microinteraction, the location on the maps can be sent to users along with an image of the overview of the map and the address of the image. This image and adress are clickable.

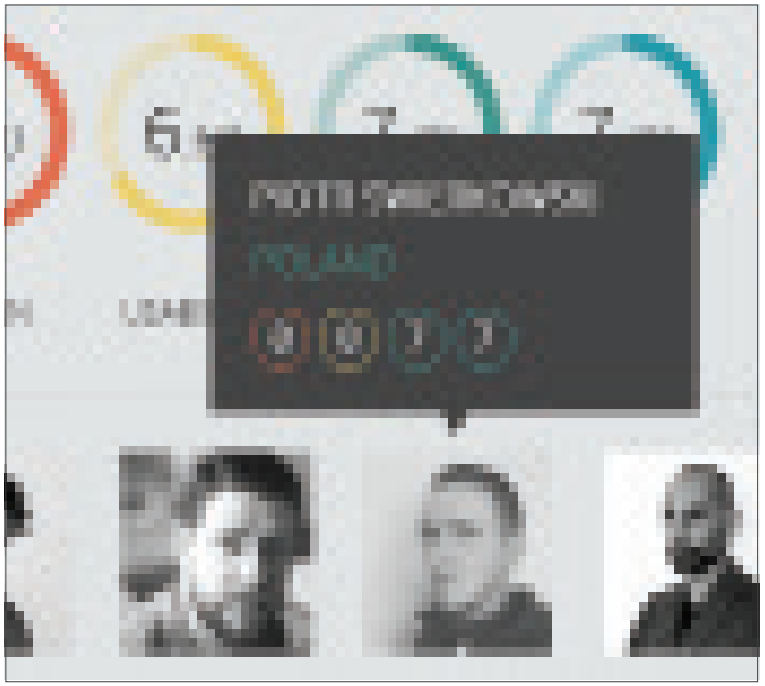
USE CASES

1. Sharing location with someone.
2. The user wants to get more information from the links on a webpage at a glance.
3. View gist of the content while sharing it on various platforms.
4. Share web pages on other platforms with brief.

STRATEGIES

1. Attach a pin drop image of the location while sharing location coordinates.
2. Put images as links.
3. Provide informative tags and display controlled content on mouse hover.

5. Writing, linking, sharing content



Make links informative

Links should not be just plain, text URLs, rather they should contain information to facilitate understanding of the context.

In the microinteraction from *www.awwwards.com*, images are used as links which provide information about the profile of the designer such as the name, location and scored marks. It helps the user get information on the same page by just hovering over the link.

USE CASES

1. Sharing location with someone.
2. The user wants to get more information from the links on a webpage at a glance.
3. View gist of the content while sharing it on various platforms.
4. Share web pages on other platforms with brief.

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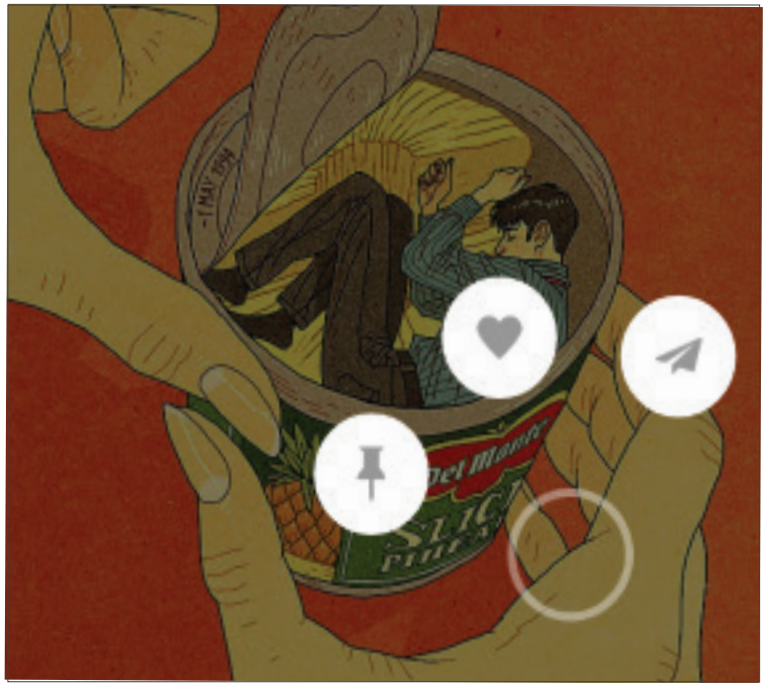

Make links informative

Links should not be just plain, text URLs, rather they should contain information to facilitate understanding of the context.

The pictures in pinterest act as links to activities. In this microinteraction, if a user long presses a particular image, actions such as pin, like and share pop up from the bottom-right of the image allowing user to perform actions with just one press and swipe which reduces the complexity of the action to be preformed.

USE CASES

1. Sharing location with someone.
2. The user wants to get more information from the links on a webpage at a glance.
3. View gist of the content while sharing it on various platforms.
4. Share web pages on other platforms with brief.

STRATEGIES

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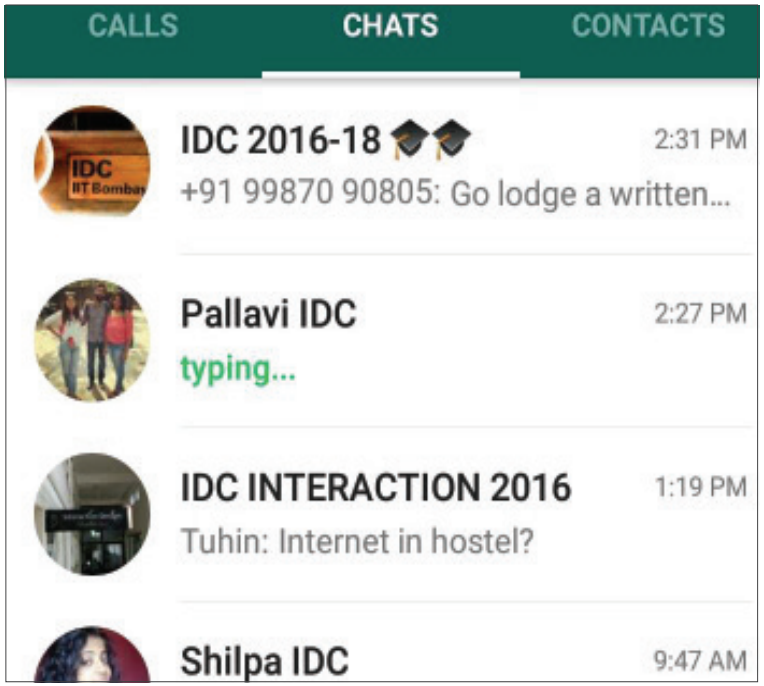


Give realtime feedback of actions

Actions should be supported by distinct feedback, as it not only displays that the system is running smoothly, but also engages the user more effectively. The feedback may also give valuable information regarding the context of the data.

The microinteraction in Whatsapp shows the status of the action of the user on the top bar of the chat and also in the chat list.

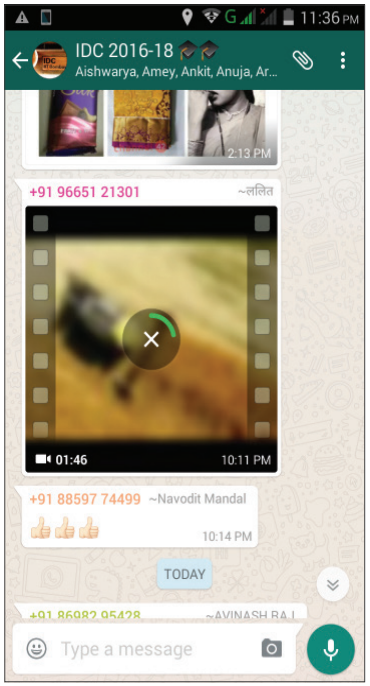
USE CASES

1. Knowing the real time status of text input in chat workspaces.
2. Enabling edit feedbacks in text editors.
3. Achieving tangible feedback during a progressive actions.

STRATEGIES

1. Display the real time status of the action performed by the user at the other end.
2. Features like spell check, grammer error check and word count can be used to enhance the quality of writing content.
3. Feedback such as progress bars and loading graphics can be used to show the progress of the action.

5. Writing, linking, sharing content



Give tangible feedback of actions

Actions should be supported by distinct feedback, as it not only displays that the system is running smoothly, but also engages the user more effectively. The feedback may also give valuable information regarding the context of the data.

Whatsapp, while sharing a document through its platform, shows the user a loading circle, which gives feedback of the process of sharing content. A green loading circle depicts downloading progresst of content.

USE CASES

1. Knowing the real time status of text input in chat workspaces.

2. Enabling edit feedbacks in text editors.

3. Achieving tangible feedback during a progressive actions.

STRATEGIES

1. Display the real time status of the action performed by the user at the other end.

2. Features like spell check, grammer error check and word count can be used to enhance the quality of writing content.

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5. Writing, linking, sharing content

Give tangible feedback of actions

Actions should be supported by distinct feedback, as it not only displays that the system is running smoothly, but also engages the user more effectively. The feedback may also give valuable information regarding the context of the data..

In this microinteraction, Medium displays the number of words of the selected text in the top-left corner along with the logo icon for the selected content.

USE CASES

1. Knowing the real time status of text input in chat workspaces.
2. Enabling edit feedbacks in text editors.
3. Achieving tangible feedback during a progressive actions.

STRATEGIES

1. Display the real time status of the action performed by the user at the other end.
2. Features like spell check, grammer error check and word count can be used to enhance the quality of writing content.
3. Feedback such as progress bars and loading graphics can be used to show the progress of the action.

6. Preventing human error

Microinteractions to prevent human error. Techniques spread across various approaches and instances.

GENERAL PRINCIPLES

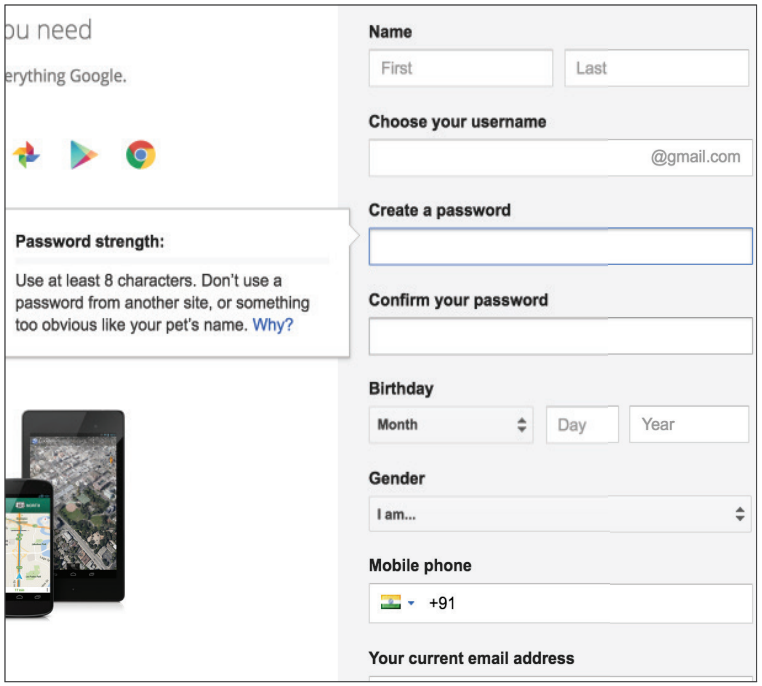
1. Provide assistive information adjacent to user inputs

2. Provide buffer step/time before critical outcomes

3. Reduce cognitive load

4. Create opportunities for error rectification

6. Preventing human error



Provide assistive information adjacent to user inputs

Give graphical or textual information to assist the user at necessary spots which may vanish once the input is entered according to the requirement.

This micro interaction involves a hint display of sample information of the said field. This display of hint vanishes upon fulfillment of requirements of the field. This helps in eliminating the error occurrence of the user input by hinting the appropriate input format.

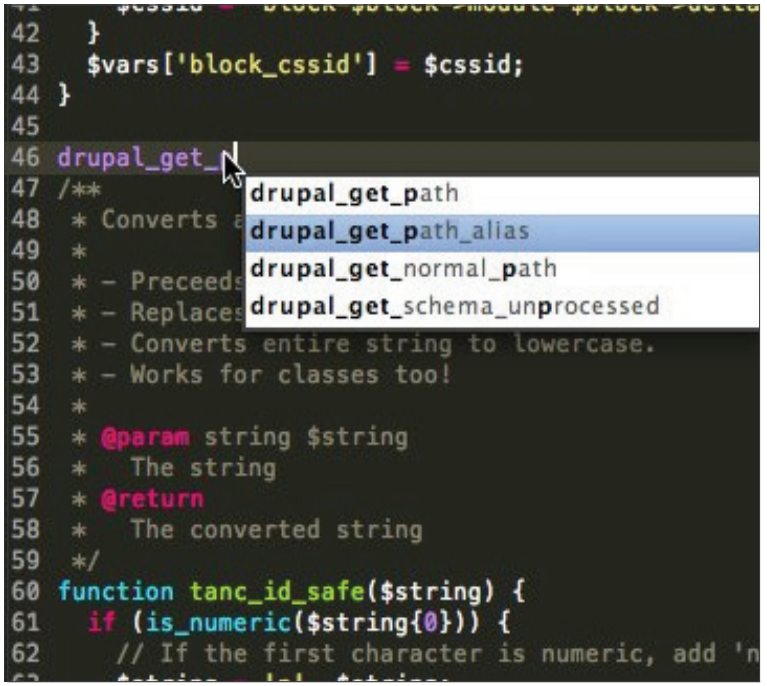
USE CASES

1. Inputting information in specific format as required.
2. Fast and Accurate data input.
3. Hinting about obscure inputs.

STRATEGIES

1. Provide hints before and during the time of input to ensure better prevention.
2. Maintain a hierarchal flow of information that serves as guide for input.
3. Position hints at relatable places to ensure appropriate visibility.
4. Use color codes to differentiate between the active part of the input and the suggestions.

6. Preventing human error



Provide assistive information adjacent to user inputs

Give graphical or textual information to assist the user at necessary spots which may vanish once the input is entered according to the requirement.

This micro-interaction deploys a suggestive model of inputs for writing codes of different syntaxes and offers them as a drop-down menu of probable intentions. This reduces error occurrences and hence error consequences.

USE CASES

1. Inputting information in specific format as required.
2. Fast and Accurate data input.
3. Hinting about obscure inputs.
4. Entering accurate data and also maintaining the hierarchy.

STRATEGIES

1. Provide hinting info before and during the time of input to ensure better prevention.
2. Maintain a hierarchal flow of information that serves as a guide for input.
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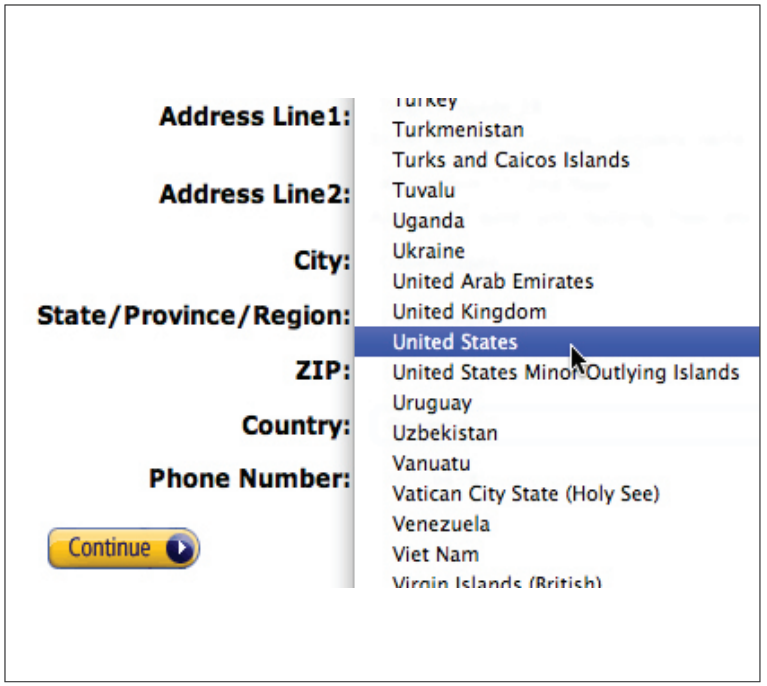
6. Preventing human error



Provide assistive information adjacent to user inputs

Give graphical or textual information to assist the user at necessary spots which may vanish once the input is entered according to the requirement.

Here, the micro interaction is at the Information Architecture layer of Garrett's model of User Experience. The hierarchy of information presented for the user input reduces the error occurrence significantly by decreasing the manual input of strings (which is prone to inaccuracy and hence generates error in the overall function of the field)

USE CASES

1. Inputting information in specific format as required.

2. Fast and Accurate data input.

3. Hinting about obscure inputs.

4. Entering accurate data and also maintaining the hierarchy.

STRATEGIES

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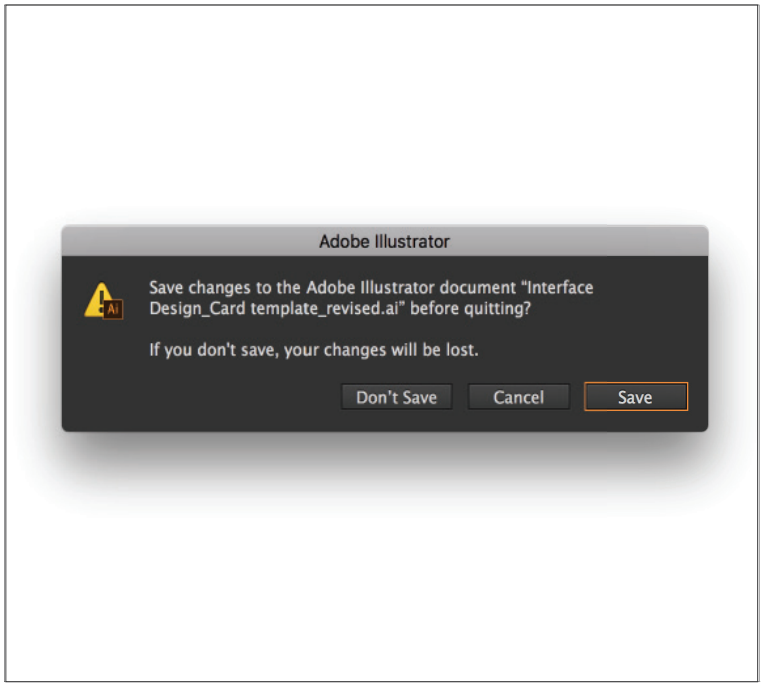


Provide buffer step/time before critical outcomes

Introduce additional time or step between (trigger and action) or (action and outcome) to avoid critical errors.

This micro interaction lets the user prevent loss of created content by adding an extra step between the trigger of the exit button and exiting the application. The default action trigger also keeps the created content safe unless user's consent is provided.

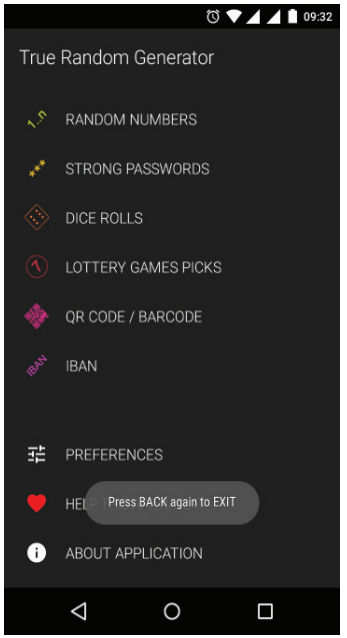
USE CASES

1. Actions having severe outcomes liked data loss.
2. Avoiding execution of unintended triggers.
3. Avoiding duplication of data which may cause information loss.
4. Being ambiguous at the time of decision making.

STRATEGIES

1. Keep a significant delay using a STEP between (depending upon the decision) between action and outcome.
2. Keep a significant delay using a TIME between (depending upon the decision) between action and outcome.
3. Change intereaction type at critical junctures/ desicion making points.
4. Use of audio and animated elements to generate conscious decision from user.

6. Preventing human error



Provide buffer step/time before critical outcomes

Introduce additional time or step between (trigger and action) or (action and outcome) to avoid critical errors.

Here, the micro interaction uses back .button more than once to exit. Else, the user stays in the app. This micro interaction helps marrying business models with design models. Hence, an element is used multiple times to generate a trigger of an action.

USE CASES

1. Actions having severe outcomes liked data loss.
2. Avoiding execution of unintended triggers.
3. Avoiding duplication of data which may cause information loss.
4. Being ambiguous at the time of decision making.

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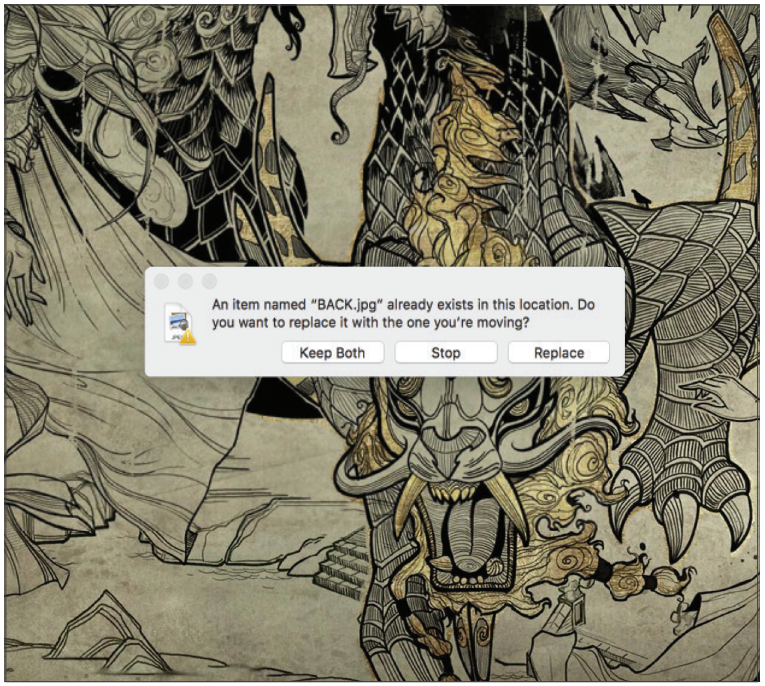

Provide buffer step/time before critical outcomes

Introduce additional time or step between (trigger and action) or (action and outcome) to avoid critical errors.

This micro interaction prevents the propagation of potential mistakes committed by the user and provides the user with an option of future recovery. The default action trigger also keeps the created content safe unless user's consent is provided.

USE CASES

1. Actions having severe outcomes liked data loss.
2. Avoiding execution of unintended triggers.
3. Avoiding duplication of data which may cause information loss.
4. Being ambiguous at the time of decision making.

STRATEGIES

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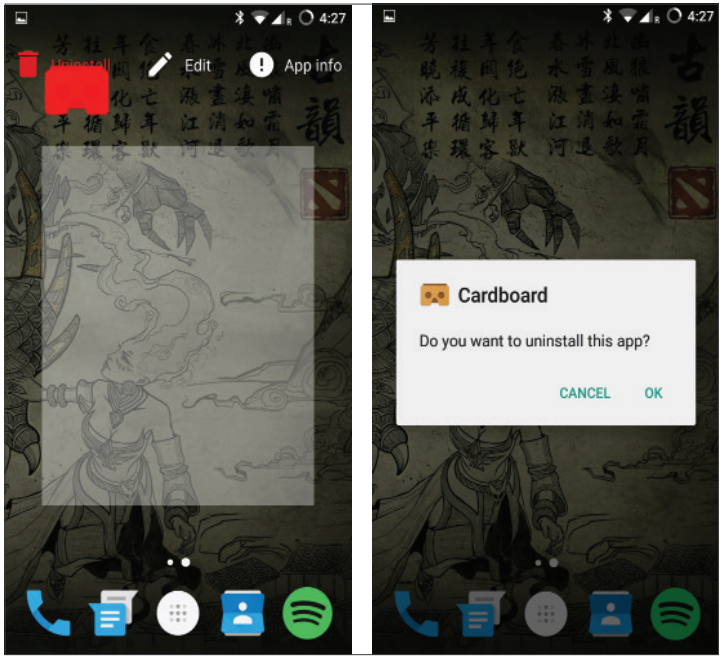

Provide buffer step/time before critical outcomes

Introduce additional time or step between (trigger and action) or (action and outcome) to avoid critical errors.

This micro interaction prevents the execution of a potentially unintended action. It puts a check on the user's intentions for an action by adding an extra step before the final execution. The default action trigger is NOT set to keep the content safe since the triggering action is narrowed down to a small touch area.

USE CASES

1. Actions having severe outcomes liked data loss.
2. Avoiding execution of unintended triggers.
3. Avoiding duplication of data which may cause information loss.
4. Being ambiguous at the time of decision making.

STRATEGIES

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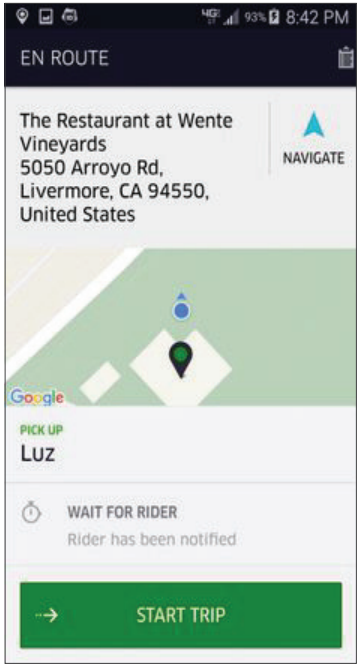
6. Preventing human error



Provide buffer step/time before critical outcomes

Introduce additional time or step between (trigger and action) or (action and outcome) to avoid critical errors.

This micro interaction ensures a conscious effort by user to confirm a transaction or confirmation of any sorts. It avoids the misinterpretations of a random touch user input for a trigger by using swipe as the input.

USE CASES

1. Actions having severe outcomes liked data loss.
2. Avoiding execution of unintended triggers.
3. Avoiding duplication of data which may cause information loss.
4. Being ambiguous at the time of decision making.

STRATEGIES

1. Keep a significant delay using a STEP between (depending upon the decision) between action and outcome.
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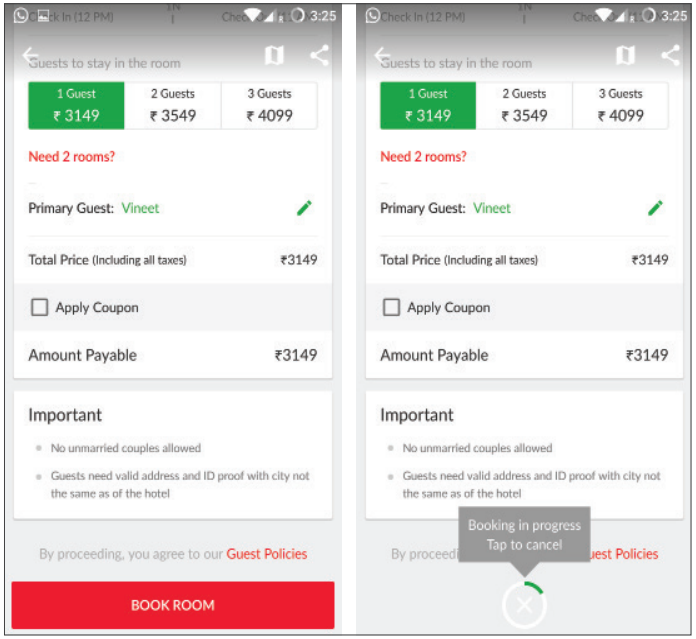

Provide buffer step/time before critical outcomes

Introduce additional time or step between (trigger and action) or (action and outcome) to avoid critical errors.

Here, when we tap on the book now button it changes to a delay clock of 5 seconds before sending the request of booking. This microinstruction lets user revert to his previous state of choice by canceling the clock tick if he/she is unsure about confirming the booking.

USE CASES

1. Actions having severe outcomes liked data loss.
2. Avoiding execution of unintended triggers.
3. Avoiding duplication of data which may cause information loss.
4. Being ambiguous at the time of decision making.

STRATEGIES

1. Keep a significant delay using a STEP between (depending upon the decision) between action and outcome.
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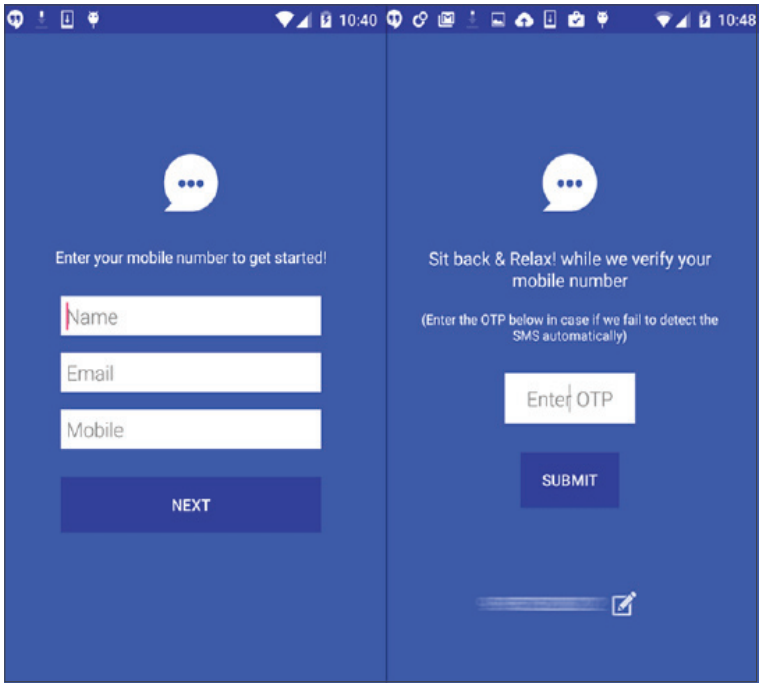


Reduce cognitive load

Memory is volatile. It degrades quickly and is subject to lots of errors. Avoid making the user remember things.

Remembering numbers while transitioning between the source and destination screens induces errors due to volatile information loss. This micro interaction automatically detects the OTP received by messaging app and verifies the device. This lets the user fulfill the functional requirement of device authentication without the fear of making errors.

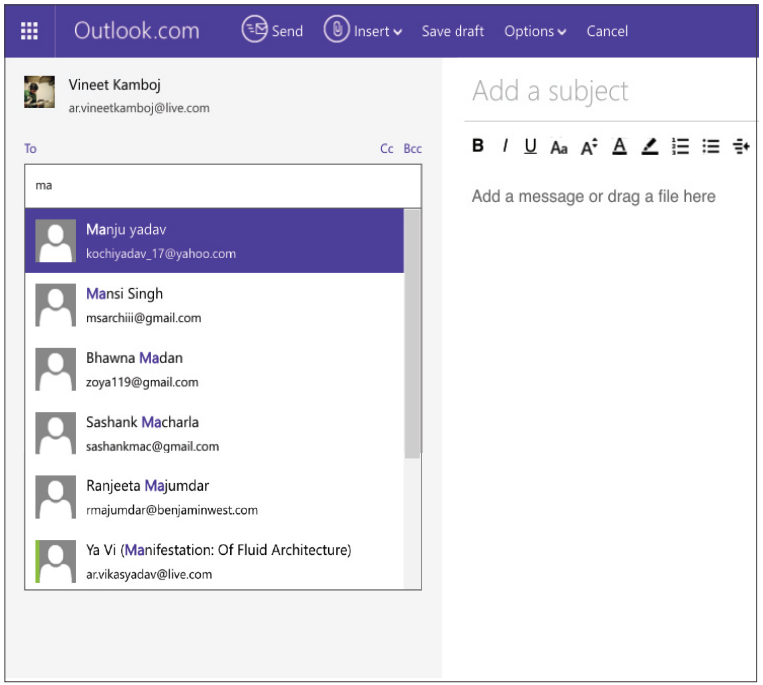
USE CASES

1. Duplicating information across two or more screens.
2. Suggestions from previously filled data in similar input fields.
3. Remembering critical information like passwords and login information.
4. Predicting text as the user starts the input.

STRATEGIES

1. Generate suggestions upon input and completion of trigger (space- in case of typing text).
2. Generate suggestions upon first entry of the field.
3. Generate supposedly correct input and replace incorrect form with the correct form of input.
4. Automate menial tasks like copy-paste (or equivalent tasks like remembering or writing down temporary strings).

6. Preventing human error



Reduce cognitive load

Memory is volatile. It degrades quickly and is subject to lots of errors. Avoid making the user remember things.

Suggesting email addresses in the recipient field of any Email client enables the user to write an email even if the entire address is not recalled. This reduces a part of cognitive load by suggesting a list of potential recipients upon input of a part of the total email address.

USE CASES

1. Duplicating information across two or more screens.
2. Suggestions from previously filled data in similar input fields.
3. Remembering critical information like passwords and login information.
4. Predicting text as the user starts the input.

STRATEGIES

1. Generate suggestions upon input and completion of trigger (space- in case of typing text).
2. Generation of suggestions upon first entry of the field.
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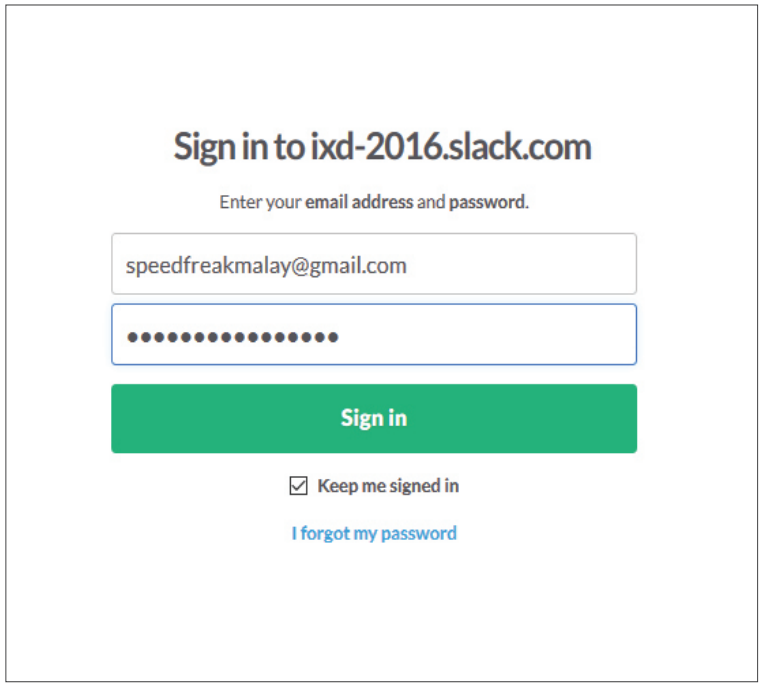
4. Automate menial tasks like copy-paste (or equivalent tasks like remembering or writing down temporary strings).

6. Preventing human error



Reduce cognitive load

Memory is volatile. It degrades quickly and is subject to lots of errors. Avoid making the user remember things.

Automatically adding the password to the password field upon user input of username or a part of username makes user care-free about remembering passwords and thereby entering them wrong or having multiple attempts for a single login; eventually being blocked out. This micro interaction makes user login experience smooth hassle free by reducing a part of cognitive load.

USE CASES

1. Duplicating information across two or more screens.
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3. Remembering critical information like passwords and login information.
4. Predicting text as the user starts the input.

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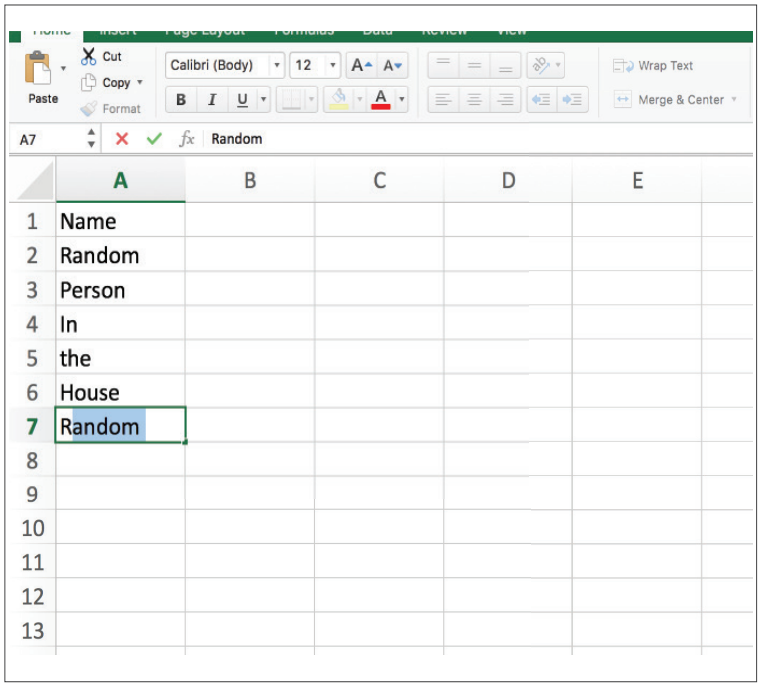


Reduce cognitive load

Memory is volatile. It degrades quickly and is subject to lots of errors. Avoid making the user remember things.

Cognition intensive work involving knowledge of a virtual environment as well as knowledge of the content induces error in both the tasks. This micro interaction semi-automates the task by suggesting probable choices the user might intend in the form of a drop down menu. This allows user to focus more on the content creation rather than the environment he/she is working in.

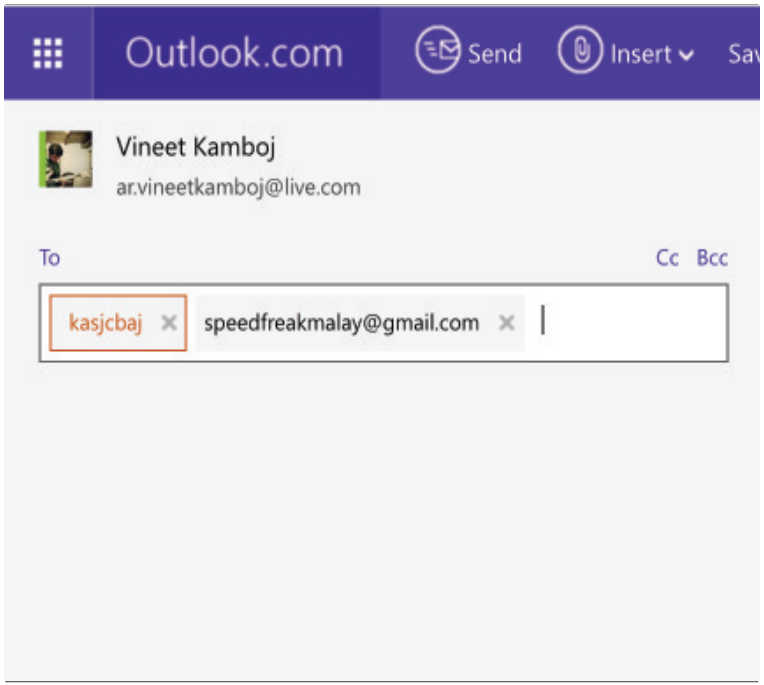
USE CASES

1. Duplicating information across two or more screens.
2. Suggestions from previously filled data in similar input fields.
3. Remembering critical information like passwords and login information.
4. Predicting text as the user starts the input.

STRATEGIES

1. Generate suggestions upon input and completion trigger (space- in case of typing text).
2. Generate suggestions upon first entry of the field.
3. Generate supposedly correct input and REPLACING incorrect form with the correct form of input.
4. Automate menial tasks like copy-paste (or equivalent tasks like remembering or writing down temporary strings).

6. Preventing human error



Create opportunities for error rectification

Non-trivial and non-propagating errors need users attention. However, they do not need a stringent correction mechanism.

This micro interaction prevents the execution of a potentially unintended action. It puts a check on the user's intentions for an action by highlighting the incorrectly entered email address.

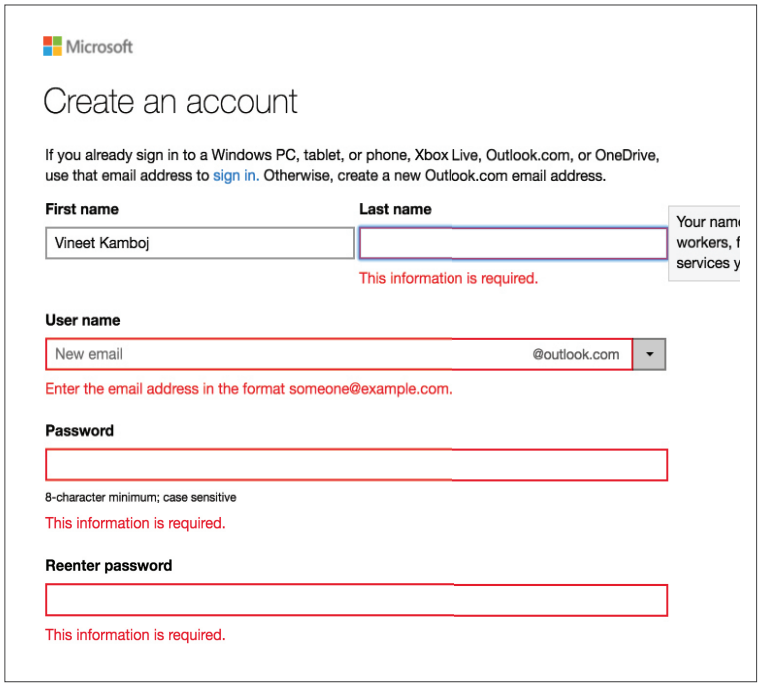
USE CASES

1. Indicating wrong user text input.
2. Forgetting or skipping to provide input.
3. Spelling mistakes made by the user in text input which he may or may not want to correct.
4. Over flow of information in various applications.

STRATEGIES

1. Use colors and shapes to highlight the error that would help in drawing the user's attention.
2. Defer resolving trivial imput errors to a later stage in order to preserve smooth user interaction.

6. Preventing human error



Create opportunities for error rectification

Non-trivial and non-propagating errors need users attention. However, they do not need a stringent correction mechanism.

This micro interaction prevents the execution of a potentially unintended action. It puts a check on the user's intentions for an action by adding an extra step before the final execution.

USE CASES

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2. Forgetting or skipping to provide input.
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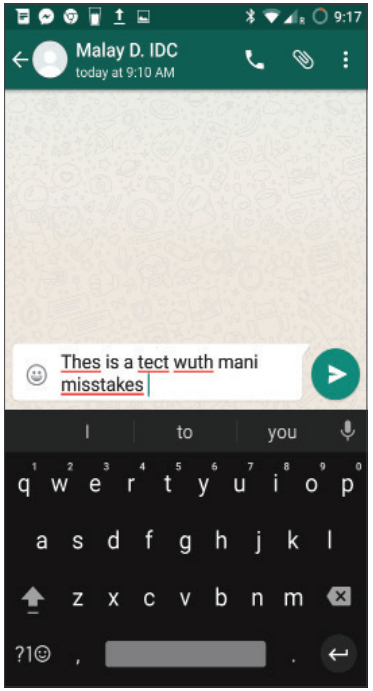


Create opportunities for error rectification

Non-trivial and non-propagating errors need users attention. However, they do not need a stringent correction mechanism.

This interaction indicates the error in typing text on smart phones. Since vernacular words are also typed for various communication approaches, these words are indicated and not corrected or suggested.

USE CASES

1. Indicating wrong user text input.

2. Forgetting or skipping to provide input.

3. Spelling mistakes made by the user in text input which he may or may not want to correct.

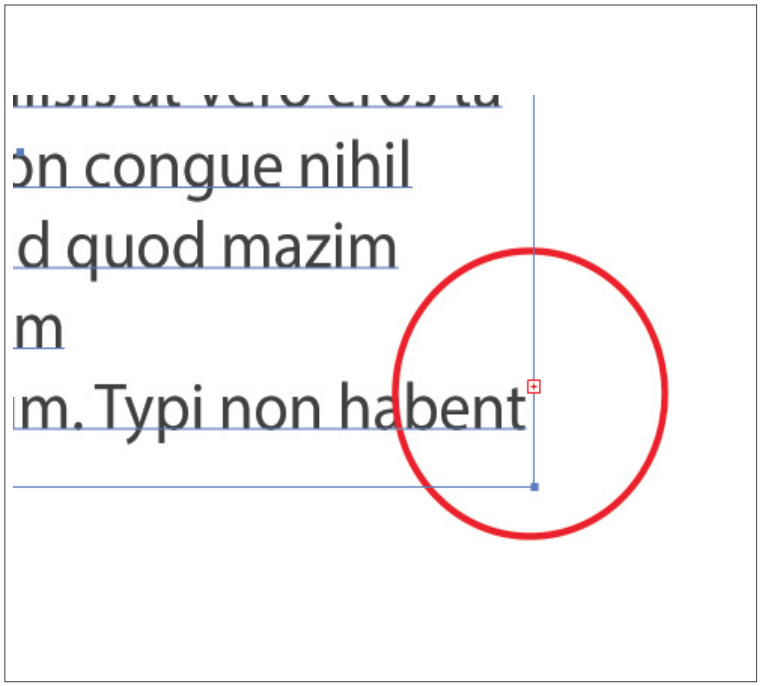
4. Over flow of information in various applications.

STRATEGIES

1. Use colors and shapes to highlight the error that would help in drawing the user's attention.

2. Defer resolving trivial imput errors to a later stage in order to preserve smooth user interaction.

6. Preventing human error



Create opportunities for error rectification

Non-trivial and non-propagating errors need users attention. However, they do not need a stringent correction mechanism.

This micro interaction indicates the incomplete content display in Indesign textboxes which needs more text area to fit the content. This indication does not expand or refuse to do further actions unless attended, but, it just indicates about the existence of this error.

USE CASES

1. Indicating wrong user text input.

2. Forgetting or skipping to provide input.

3. Spelling mistakes made by the user in text input which he may or may not want to correct.

4. Over flow of information in various applications.

STRATEGIES

1. Use colors and shapes to highlight the error that would help in drawing the user's attention.

2. Defer resolving trivial imput errors to a later stage in order to preserve smooth user interaction.