

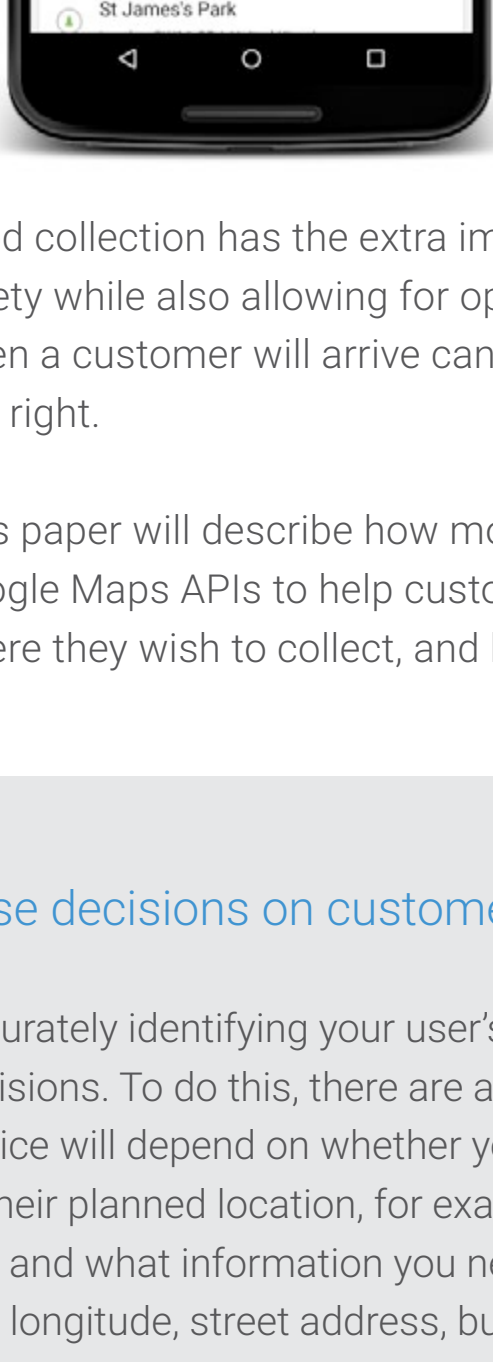
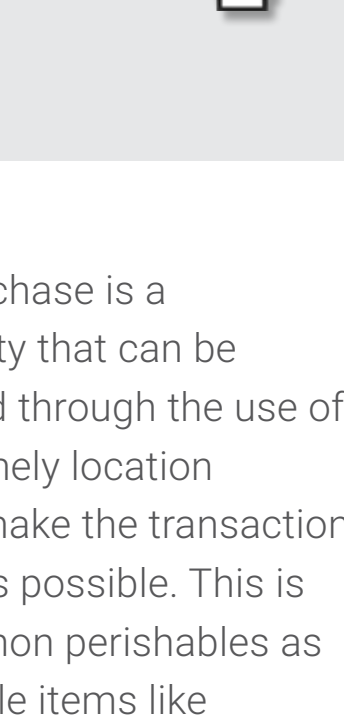


On-Time Order Pickup, powered by Google Maps APIs

Increase customer satisfaction and provide more precise delivery times using Google Maps APIs.

While many retailers rely on delivery for customer purchases, there are many new delivery options that are increasing in popularity:

- 🕒 Click and collect from store
- 🏠 Collect from depot or warehouse
- 📍 Collect from a collection point



Collecting a purchase is a consumer activity that can be greatly improved through the use of accurate and timely location information to make the transaction as convenient as possible. This is equally true for non perishables as well as perishable items like takeaway food or beverages that can be ordered ahead. Knowing where the is customer at a specific point of time and how long will it take them to arrive to collect an order can streamline their experience as well as help optimise order preparation times.

Food collection has the extra imperative of maintaining freshness and food safety while also allowing for optimal preparation time. Knowing exactly when a customer will arrive can offer important ways to get the experience just right.

This paper will describe how mobile and web applications can work with the Google Maps APIs to help customers quickly specify where they are, from where they wish to collect, and how soon they'll arrive at the select location.

Base decisions on customer location

Accurately identifying your user's location helps to make more impactful decisions. To do this, there are a number of strategies you can employ. Your choice will depend on whether you need the current location of the customer or their planned location, for example on their way home after work or a night out; and what information you need about their location, for example latitude and longitude, street address, business name, current traffic conditions, or live transit schedules.

Make your app or website location aware

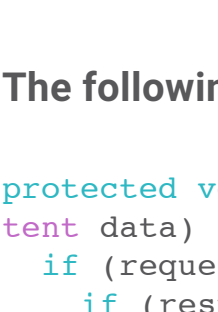
Most mobile devices and browsers have built-in capabilities to determine an accurate location and even reverse geocode it (convert the latitude, longitude position to a human-readable address).

On Android devices the [FusedLocationProvider](#) in the Google Play Services library provides this function using a number of observed signals as input. Many browsers implement the Geolocation API to perform the same operation. Remember that your users need to opt-in to share their location with you.

Use named places to prompt the user and reduce typing

You might need to let the user specify a location, in which case speed, usability and a rich dataset of real world places will give your app the advantage. Google's Places API can be accessed through native Android and iOS libraries, via the Places Library in the Javascript Maps API, or through direct calls to an HTTP endpoint, giving you the flexibility to implement the same fast, comprehensive search across a number of platforms—with a consistent experience for your customers. For example, use a Place Picker to suggest locations like pubs, restaurants and metro stations, or use Autocomplete to rapidly suggest places based on what the user types.

If your customers sign-in to Google Maps through the API then they can access their starred locations, such as "Home" or "Work" to help you provide them the most convenient collection locations.



Add a Place Picker to an Android app

Here is a summary of the steps required to launch the place picker:

1. Use the `PlacePicker.IntentBuilder()` to construct an `Intent`.
2. If you want to change the place picker's default behavior, you can use the builder to set the initial latitude and longitude bounds of the map displayed by the place picker. Call `setLatLngBounds()` on the builder, passing in a `LatLngBounds` to set the initial latitude and longitude bounds. These bounds define an area called the 'viewport'. By default, the viewport is centered on the device's location, with the zoom at city-block level.
3. Call `startActivityForResult()`, passing it the intent and a pre-defined request code, so that you can identify the request when the result is returned.

The following Android code snippet launches the place picker:

```
int PLACE_PICKER_REQUEST = 1;
PlacePicker.IntentBuilder builder = new PlacePicker.IntentBuilder();
startActivityForResult(builder.build(this),
PLACE_PICKER_REQUEST);
```

When the user selects a place, you can retrieve the place by calling `PlacePicker.getPlace()`. If the user has not selected a place, the method will return null.

You can also retrieve the most recent bounds of the map by calling `PlacePicker.getLatLngBounds()`.

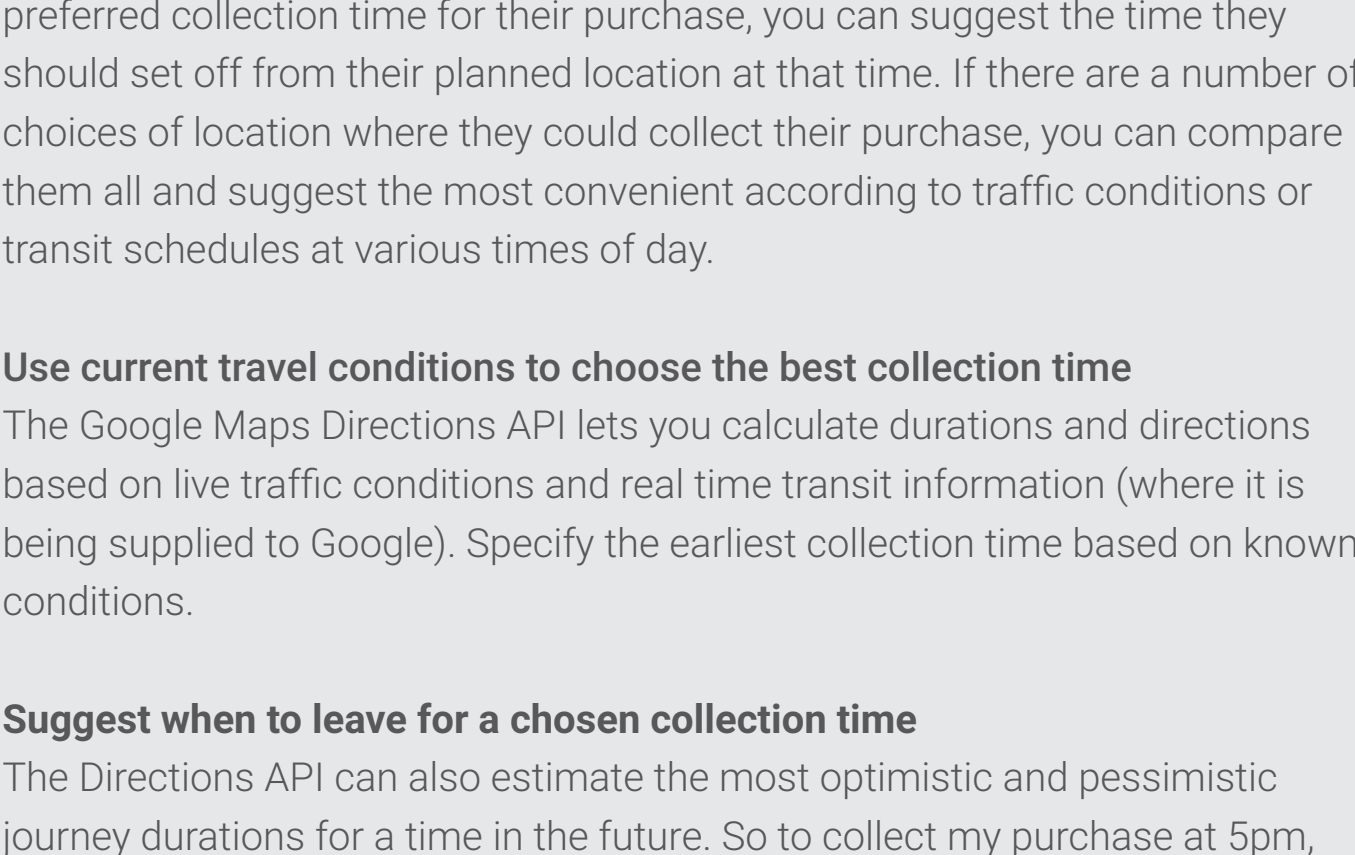
The following code snippet retrieves the place that the user has selected:

```
protected void onActivityResult(int requestCode, int resultCode, Intent data) {
    if (requestCode == PLACE_PICKER_REQUEST) {
        if (resultCode == RESULT_OK) {
            Place place = PlacePicker.getPlace(data, this);
            String toastMsg = String.format("Place: %s", place.getName());
            Toast.makeText(this, toastMsg, Toast.LENGTH_LONG).show();
        }
    }
}
```

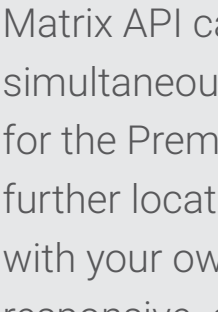
For more information, see our "Improve the Shopping Cart Checkout Experience with Autocomplete API" whitepaper: goo.gl/qmbxxk

Help customers find you

To guide your customers to an indoor collection point, Google Maps' indoor map data can provide extra context to help. If you manage your business presence on Google Maps using Google My Business then opening times can be combined with StreetView and photos to help guide them to the location.

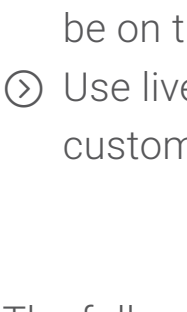


An indoor Google Map with floor level picker, created with the Android Maps API.



Let customers quickly specify a location

- 🕒 Make your app or mobile website location aware.
- 📍 Use POI locations to prompt the user - quicker than typing. Not everyone knows the postcode of their current location. Orient them using things they can see.
- 🔍 Use Autocomplete if they need to type - fewer keypresses required. If they are signed in, they can use saved locations or save your to Google Maps for use next time.
- 🗺️ Confirm using a map.
- 📍 Use StreetView to show them what the restaurant or collection point looks like.



Choose the most convenient collection point using live and predicted travel time

Google Maps API gives you access to live and predicted travel times by road and by transit, allowing you to prepare collections according to the most probable time a customer will arrive. For example, if a customer orders hot food or drinks, you can start making them just in time. If a customer has a preferred collection time for their purchase, you can suggest the time they should set off from their planned location at that time. If there are a number of choices of location where they could collect their purchase, you can compare them all and suggest the most convenient according to traffic conditions or transit schedules at various times of day.

Use current travel conditions to choose the best collection time

The Google Maps Directions API lets you calculate durations and directions based on live traffic conditions and real time transit information (where it is being supplied to Google). Specify the earliest collection time based on known conditions.

Suggest when to leave for a chosen collection time

The Directions API can also estimate the most optimistic and pessimistic journey durations for a time in the future. So to collect my purchase at 5pm, I might need to allow an extra 15 minutes to get there on time compared to collecting it at 2pm.

Choose the most convenient collection point for a given time

The same principle applies to deciding from where to collect. The Distance Matrix API can evaluate up to 625 journeys per request, and through multiple simultaneous requests, up to 1000 per second by default when if you sign up for the Premium Plan. So you can build a decision engine that can suggest a further location if it would actually be a faster travel time. By combining this with your own knowledge of the busiest store times you can provide the most responsive overall customer service for a given time of day and earn the loyalty of your customers by minimising the time they have to wait.



Predicting Journey Times with Directions API and Distance Matrix API

- 📍 Select the best location for a collection from a range of choices using traffic conditions and transit schedules.
- 🕒 Help your customers by letting them know when they need to set off to be on time.
- 🕒 Use live and predicted travel times to manage the preparation of customer orders for the best in-store experience.

The following code sample shows how to ask for the pessimistic prediction of driving time between Wimbledon, in South West London, and four local major shopping centres on a Monday afternoon in December 2016 .

The origin and destinations are specified as text - the Distance Matrix API will geocode them.

The destinations are listed separated by the pipe (|) character. For a secure deployment, send the following from a proxy server to keep the client secret:

```
https://maps.googleapis.com/maps/api/distancematrix/json?
origins=Wimbledon,UK&
destinations=Croydon,UK|Sutton,UK|Kingston,UK|Richmond,UK&
mode=driving&
departure_time=1482339600&
traffic_model=pessimistic&
key=YOUR_API_KEY
```

The response will include one element for each origin-destination journey that has been calculated. Each element contains the distance, duration and duration_in_traffic for that journey. In this example the quickest destination in the most likely worst case traffic conditions is Kingston, and it will usually be possible to drive there in 23 minutes or less - so we could inform a user to allow at least 20 minutes to arrive for a collection at 5:30pm.

```
{
  „destination_addresses“ : [
    „Croydon, Greater London, UK“,
    „Sutton, Greater London, UK“,
    „Kingston upon Thames, Greater London, UK“,
    „Richmond, Richmond, Greater London, UK“
  ],
  „origin_addresses“ : [ „Wimbledon, London, UK“ ],
  „rows“ : [
    {
      „elements“ : [
        {
          „distance“ : {
            „text“ : „13.4 km“,
            „value“ : 13394
          },
          „duration“ : {
            „text“ : „29 mins“,
            „value“ : 1769
          },
          „duration_in_traffic“ : {
            „text“ : „55 mins“,
            „value“ : 3273
          },
          „status“ : „OK“
        },
        {
          „distance“ : {
            „text“ : „9.0 km“,
            „value“ : 8964
          },
          „duration“ : {
            „text“ : „23 mins“,
            „value“ : 1363
          },
          „duration_in_traffic“ : {
            „text“ : „29 mins“,
            „value“ : 1765
          },
          „status“ : „OK“
        },
        {
          „distance“ : {
            „text“ : „7.0 km“,
            „value“ : 7017
          },
          „duration“ : {
            „text“ : „17 mins“,
            „value“ : 1004
          },
          „duration_in_traffic“ : {
            „text“ : „23 mins“,
            „value“ : 1407
          },
          „status“ : „OK“
        },
        {
          „distance“ : {
            „text“ : „12.8 km“,
            „value“ : 12757
          },
          „duration“ : {
            „text“ : „29 mins“,
            „value“ : 1757
          },
          „duration_in_traffic“ : {
            „text“ : „38 mins“,
            „value“ : 2295
          },
          „status“ : „OK“
        }
      ]
    }
  ],
  „status“ : „OK“
}
```

Put it all together

Now you can build an app that incorporates user location into your collection ordering process in a way that requires a minimum amount of interaction from your customers. Having obtained their accurate location, you can be sure that the orders you receive will be collected from the location that's most convenient for your users.

WANT TO FIND OUT MORE?

Our Customer Success team will work with you to determine how the solution will work best for your organization. For more information about this offering or to learn more about how customizing Google Maps can impact your business, please contact us at:

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