GTFS Examples

Version 1.41 (last updated 7-July-2016)

**About**

This document shows examples of [General Transit Feed Specification (GTFS)](https://developers.google.com/transit/gtfs/reference) data to illustrate how the Specification can be used to describe various configurations of transit service. Various schedule and fare configurations are presented. In many cases, there can be multiple ways of presenting the same transit service, and these examples aim to illustrate some of those approach options. Feel free to add comments to this document with questions or suggestions. Request edit permissions if you would like to add examples or make enhancements to the document.

A Chinese-translated version of version 1.2 of this document is available from the World Bank’s [link repository for international GTFS training materials](https://github.com/WorldBank-Transport/GTFS-Training-Materials/wiki/Link-repository-for-international-GTFS-training-materials).

**Document versions**

* **1.41** (7-July-2016) Add World Bank’s link repository for international GTFS training materials
* **1.4** (10-January-2016) Change background link from Appropedia to TransitWiki; added example 11 with linked dataset
* **1.3** (30-October-2014): Add “Background / Overview of the Specification” section to the document
* **1.2** (1-Dec-2013): Add example 4, which shows multiple records in frequencies.txt associated with one trip\_id.

**Table of contents**

[Background / Overview of the Specification](#_fcepo011fk2v)

[Example 1: relationships between files to define schedules.](#_85yoic1zsmkh)

[Example 2: using calendar.txt to define seasonal schedules.](#_ygumy8u3p779)

[Example 3: using frequencies.txt with stop\_times.txt](#_nu89scsx3d4n)

[Example 4: another look at frequencies.txt; headways intervals vary throughout the day.](#_ki0ya9l3mi9a)

[Example 5: another look at frequencies.txt; headways intervals and travel times vary throughout the day.](#_64viux11y0ev)

[Example 6: Trip variations: express and short trips](#_ijh32a66itij)

[Example 7: Different but similar travel patterns are defined as separate routes](#_8ymd4igmvm1y)

[Example 8: Fares, a combination of free and discounted transfers](#_8skuq2h1q55c)

[Example 9: Fares are defined by zones](#_nf6id6r5otro)

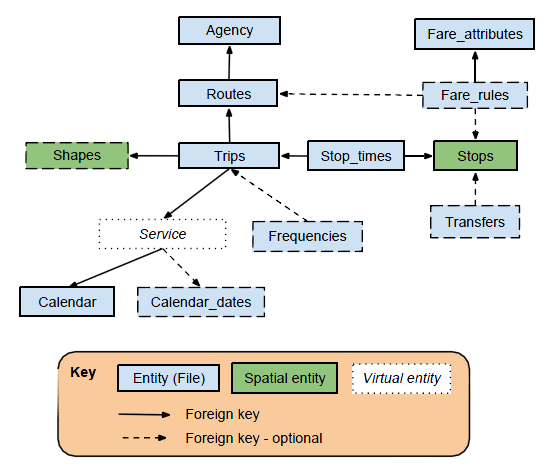
[Example 10: Fare structure includes free transfers, but only for specific routes](#_fjmgmniawhjs)

[Example 11: A full example, with trips, frequencies, and fares](#_kdmzft6s4oeg)

[Document contributors](#_6sbfuaaumux)

### Background / Overview of the Specification

* TransitWiki provides a approachable and complete [background on GTFS](http://www.transitwiki.org/TransitWiki/index.php?title=General_Transit_Feed_Specification).
* GTFS datasets consist of multiple spreadsheet-like files, in a comma-separated values (CSV) format. Understanding these examples, and GTFS, requires understanding the basic definition of a CSV file (see Wikipedia, [“Comma-separated values”](http://en.wikipedia.org/wiki/Comma-separated_values" \l "Example))
* The CSV files in a GTFS dataset are “relational”. This means that multiple files contain related information, stored as tables of rows (records) and columns (fields), and allowing a link to be established between separate files that have a matching field ([relational database definition](http://dictionary.reference.com/browse/relational+database)).
* While not required to understand these examples, we recommend at least skimming the [“General Transit Feed Specification” definition document](https://developers.google.com/transit/gtfs/reference).



(Data model of the GTFS file format, created by Martin Davis, as per blog post <http://lin-ear-th-inking.blogspot.com.au/2011/09/data-model-diagrams-for-gtfs.html>.)

### 

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### Example 1: relationships between files to define schedules.

Schedules defined using stop\_times.txt without frequencies.txt. Only winter weekday service is defined.

Two round-trips occur between downtown and the airport every weekday, also stopping at the railway station.

*Required file not shown: agency.txt*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **calendar.txt** |  |  |  |  |  |  |  |  |  |
| **service\_id** | **start\_date** | **end\_date** | **monday** | **tuesday** | **wednesday** | **thursday** | **friday** | **saturday** | **sunday** |
| winter\_weekday | 20130921 | 20140619 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |

|  |  |  |  |
| --- | --- | --- | --- |
| **routes.txt** |  |  |  |
| **route\_id** | **route\_short\_name** | **route\_long\_name** | **route\_type** |
| route\_1 | 1 | Downtown/Airport | 3 |

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| **trips.txt** |  |  |  |  |
| **trip\_id** | **route\_id** | **service\_id** | **direction\_id** | **trip\_headsign** |
| trip\_1 | route\_1 | winter\_weekday | 0 | Airport |
| trip\_2 | route\_1 | winter\_weekday | 1 | Downtown |
| trip\_3 | route\_1 | winter\_weekday | 0 | Airport |
| trip\_4 | route\_1 | winter\_weekday | 1 | Downtown |

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| --- | --- | --- | --- |
| **stops.txt** |  |  |  |
| **stop\_id** | **stop\_name** | **stop\_lat** | **stop\_lon** |
| stop\_1 | Main and 1st St. | 28.8 | 115.9 |
| stop\_2 | Railway Station | 28.9 | 116 |
| stop\_3 | Airport | 29 | 116.1 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **stop\_times.txt** |  |  |  |  |
| **trip\_id** | **stop\_sequence** | **stop\_id** | **arrival\_time** | **departure\_time** |
| trip\_1 | 1 | stop\_1 | 9:00:00 | 9:00:00 |
| trip\_1 | 2 | stop\_2 | 9:10:00 | 9:10:00 |
| trip\_1 | 3 | stop\_3 | 9:30:00 | 9:30:00 |
| trip\_2 | 1 | stop\_3 | 9:30:00 | 9:30:00 |
| trip\_2 | 2 | stop\_2 | 9:50:00 | 9:50:00 |
| trip\_2 | 3 | stop\_1 | 10:00:00 | 10:00:00 |
| trip\_3 | 1 | stop\_1 | 10:00:00 | 10:00:00 |
| trip\_3 | 2 | stop\_2 | 10:10:00 | 10:10:00 |
| trip\_3 | 3 | stop\_3 | 10:30:00 | 10:30:00 |
| trip\_4 | 1 | stop\_3 | 10:30:00 | 10:30:00 |
| trip\_4 | 2 | stop\_2 | 10:50:00 | 10:50:00 |
| trip\_4 | 3 | stop\_1 | 11:00:00 | 11:00:00 |

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### Example 2: using calendar.txt to define seasonal schedules.

Schedules defined using stop\_times.txt only (no frequencies.txt). Only winter weekday, and summer service (Tuesdays and Thursdays only) is defined. Two-round trips per day occur in the winter. There is one round-trip in the summer, with shorter travel time. Data is color-coded according to seasonal schedules (service\_id).

*Required file not shown: agency.txt*

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **calendar.txt** |  |  |  |  |  |  |  |  |  |
| **service\_id** | **start\_date** | **end\_date** | **monday** | **tuesday** | **wednesday** | **thursday** | **friday** | **saturday** | **sunday** |
| winter\_weekday | 20160921 | 20170619 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |
| summer\_tuesdays\_thursdays | 20170620 | 20170920 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |

|  |  |  |  |
| --- | --- | --- | --- |
| **routes.txt** |  |  |  |
| **route\_id** | **route\_short\_name** | **route\_long\_name** | **route\_type** |
| route\_1 | 1 | Downtown/Airport | 3 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **trips.txt** |  |  |  |  |
| **trip\_id** | **route\_id** | **service\_id** | **direction\_id** | **trip\_headsign** |
| trip\_1 | route\_1 | winter\_weekday | 0 | Airport |
| trip\_2 | route\_1 | winter\_weekday | 1 | Downtown |
| trip\_3 | route\_1 | winter\_weekday | 0 | Airport |
| trip\_4 | route\_1 | winter\_weekday | 1 | Downtown |
| trip\_5 | route\_1 | summer\_tuesdays\_thursdays | 0 | Airport |
| trip\_6 | route\_1 | summer\_tuesdays\_thursdays | 1 | Downtown |

|  |  |  |  |
| --- | --- | --- | --- |
| **stops.txt** |  |  |  |
| **stop\_id** | **stop\_name** | **stop\_lat** | **stop\_lon** |
| stop\_1 | Main and 1st St. | 28.8 | 115.9 |
| stop\_2 | Railway Station | 28.9 | 116 |
| stop\_3 | Airport | 29 | 116.1 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **stop\_times.txt** |  |  |  |  |
| **trip\_id** | **stop\_sequence** | **stop\_id** | **arrival\_time** | **departure\_time** |
| trip\_1 | 1 | stop\_1 | 9:00:00 | 9:00:00 |
| trip\_1 | 2 | stop\_2 | 9:10:00 | 9:10:00 |
| trip\_1 | 3 | stop\_3 | 9:30:00 | 9:30:00 |
| trip\_2 | 1 | stop\_3 | 9:30:00 | 9:30:00 |
| trip\_2 | 2 | stop\_2 | 9:50:00 | 9:50:00 |
| trip\_2 | 3 | stop\_1 | 10:00:00 | 10:00:00 |
| trip\_3 | 1 | stop\_1 | 10:00:00 | 10:00:00 |
| trip\_3 | 2 | stop\_2 | 10:10:00 | 10:10:00 |
| trip\_3 | 3 | stop\_3 | 10:30:00 | 10:30:00 |
| trip\_4 | 1 | stop\_3 | 10:30:00 | 10:30:00 |
| trip\_4 | 2 | stop\_2 | 10:50:00 | 10:50:00 |
| trip\_4 | 3 | stop\_1 | 11:00:00 | 11:00:00 |
| trip\_5 | 1 | stop\_1 | 9:00:00 | 9:00:00 |
| trip\_5 | 2 | stop\_2 | 9:08:00 | 9:08:00 |
| trip\_5 | 3 | stop\_3 | 9:20:00 | 9:20:00 |
| trip\_6 | 1 | stop\_3 | 9:20:00 | 9:20:00 |
| trip\_6 | 2 | stop\_2 | 9:32:00 | 9:32:00 |
| trip\_6 | 3 | stop\_1 | 9:40:00 | 9:40:00 |

### Example 3: using frequencies.txt with stop\_times.txt

Route 1 runs every 1 hour from 9:00 to 11:00 on winter weekdays. With frequencies.txt, service periods defined in frequencies.txt override specific departure\_time and arrival\_time values. Travel intervals are provided by stop\_times.txt. The service defined here is the same as what is defined in Example 2. Both options are correct GTFS and will be readable by GTFS applications.

*Required file not shown: agency.txt*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **calendar.txt** |  |  |  |  |  |  |  |  |  |
| **service\_id** | **start\_date** | **end\_date** | **monday** | **tuesday** | **wednesday** | **thursday** | **friday** | **saturday** | **sunday** |
| winter\_weekday | 20130921 | 20140619 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |
| summer\_tuesdays\_thursdays | 20130620 | 20130920 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |

|  |  |  |  |
| --- | --- | --- | --- |
| **routes.txt** |  |  |  |
| **route\_id** | **route\_short\_name** | **route\_long\_name** | **route\_type** |
| route\_1 | 1 | Downtown/Airport | 3 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **trips.txt** |  |  |  |  |
| **trip\_id** | **route\_id** | **service\_id** | **direction\_id** | **trip\_headsign** |
| trip\_1 | route\_1 | winter\_weekday | 0 | Airport |
| trip\_2 | route\_1 | winter\_weekday | 1 | Downtown |
| trip\_3 | route\_1 | summer\_tuesdays\_thursdays | 0 | Airport |
| trip\_4 | route\_1 | summer\_tuesdays\_thursdays | 1 | Downtown |

|  |  |  |  |
| --- | --- | --- | --- |
| **stops.txt** |  |  |  |
| **stop\_id** | **stop\_name** | **stop\_lat** | **stop\_lon** |
| stop\_1 | Main and 1st St. | 28.8 | 115.9 |
| stop\_2 | Railway Station | 28.9 | 116 |
| stop\_3 | Airport | 29 | 116.1 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **stop\_times.txt** |  |  |  |  |
| **trip\_id** | **stop\_sequence** | **stop\_id** | **arrival\_time** | **departure\_time** |
| trip\_1 | 1 | stop\_1 | 0:00:00 | 0:00:00 |
| trip\_1 | 2 | stop\_2 | 0:10:00 | 0:10:00 |
| trip\_1 | 3 | stop\_3 | 0:30:00 | 0:30:00 |
| trip\_2 | 1 | stop\_3 | 0:00:00 | 0:00:00 |
| trip\_2 | 2 | stop\_2 | 0:20:00 | 0:20:00 |
| trip\_2 | 3 | stop\_1 | 0:30:00 | 0:30:00 |
| trip\_3 | 1 | stop\_1 | 9:00:00 | 9:00:00 |
| trip\_3 | 2 | stop\_2 | 9:08:00 | 9:08:00 |
| trip\_3 | 3 | stop\_3 | 9:20:00 | 9:20:00 |
| trip\_4 | 1 | stop\_3 | 9:20:00 | 9:20:00 |
| trip\_4 | 2 | stop\_2 | 9:32:00 | 9:32:00 |
| trip\_4 | 3 | stop\_1 | 9:40:00 | 9:40:00 |

|  |  |  |  |
| --- | --- | --- | --- |
| **frequencies.txt** |  |  |  |
| **trip\_id** | **headway\_secs** | **start\_time** | **end\_time** |
| trip\_1 | 3600 | 9:00:00 | 10:00:00 |
| trip\_2 | 3600 | 9:30:00 | 10:30:00 |

### Example 4: another look at frequencies.txt; headways intervals vary throughout the day.

Route 1 operates service in both directions with 5 minute average headways from 7:00 to 12:00. From 12:00 to 22:00, Route 1 operates with 10 minute average headways.

Colors match trips\_ids.

*Required file not shown: agency.txt*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **calendar.txt** |  |  |  |  |  |  |  |  |  |
| **service\_id** | **start\_date** | **end\_date** | **monday** | **tuesday** | **wednesday** | **thursday** | **friday** | **saturday** | **sunday** |
| winter\_weekday | 20130921 | 20140619 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |

|  |  |  |  |
| --- | --- | --- | --- |
| **routes.txt** |  |  |  |
| **route\_id** | **route\_short\_name** | **route\_long\_name** | **route\_type** |
| route\_1 | 1 | Downtown/Airport | 3 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **trips.txt** |  |  |  |  |
| **trip\_id** | **route\_id** | **service\_id** | **direction\_id** | **trip\_headsign** |
| trip\_1 | route\_1 | winter\_weekday | 0 | Airport |
| trip\_2 | route\_1 | winter\_weekday | 1 | Downtown |

|  |  |  |  |
| --- | --- | --- | --- |
| **stops.txt** |  |  |  |
| **stop\_id** | **stop\_name** | **stop\_lat** | **stop\_lon** |
| stop\_1 | Main and 1st St. | 28.8 | 115.9 |
| stop\_2 | Railway Station | 28.9 | 116 |
| stop\_3 | Airport | 29 | 116.1 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **stop\_times.txt** |  |  |  |  |
| **trip\_id** | **stop\_sequence** | **stop\_id** | **arrival\_time** | **departure\_time** |
| trip\_1 | 1 | stop\_1 | 0:00:00 | 0:00:00 |
| trip\_1 | 2 | stop\_2 | 0:10:00 | 0:10:00 |
| trip\_1 | 3 | stop\_3 | 0:30:00 | 0:30:00 |
| trip\_2 | 1 | stop\_3 | 0:00:00 | 0:00:00 |
| trip\_2 | 2 | stop\_2 | 0:10:00 | 0:10:00 |
| trip\_2 | 3 | stop\_1 | 0:30:00 | 0:30:00 |

|  |  |  |  |
| --- | --- | --- | --- |
| **frequencies.txt** |  |  |  |
| **trip\_id** | **headway\_secs** | **start\_time** | **end\_time** |
| trip\_1 | 300 | 7:00:00 | 12:00:00 |
| trip\_1 | 600 | 12:00:00 | 22:00:00 |
| trip\_2 | 300 | 7:00:00 | 12:00:00 |
| trip\_2 | 600 | 12:00:00 | 22:00:00 |

### 

### Example 5: another look at frequencies.txt; headways intervals and travel times vary throughout the day.

Route 1 operates service in both directions with 5 minute average headways from 7:00 to 12:00. From 12:00 to 22:00, Route 1 operates with 10 minute average headways, but service is faster (less travel time).

Colors match trips\_ids.

*Required file not shown: agency.txt*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **calendar.txt** |  |  |  |  |  |  |  |  |  |
| **service\_id** | **start\_date** | **end\_date** | **monday** | **tuesday** | **wednesday** | **thursday** | **friday** | **saturday** | **sunday** |
| winter\_weekday | 20130921 | 20140619 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |

|  |  |  |  |
| --- | --- | --- | --- |
| **routes.txt** |  |  |  |
| **route\_id** | **route\_short\_name** | **route\_long\_name** | **route\_type** |
| route\_1 | 1 | Downtown/Airport | 3 |

**trips.txt**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **trip\_id** | **route\_id** | **service\_id** | **direction\_id** | **trip\_headsign** |
| trip\_1 | route\_1 | winter\_weekday | 0 | Airport |
| trip\_2 | route\_1 | winter\_weekday | 1 | Downtown |
| trip\_3 | route\_1 | winter\_weekday | 0 | Airport |
| trip\_4 | route\_1 | winter\_weekday | 1 | Downtown |

|  |  |  |  |
| --- | --- | --- | --- |
| **stops.txt** |  |  |  |
| **stop\_id** | **stop\_name** | **stop\_lat** | **stop\_lon** |
| stop\_1 | Main and 1st St. | 28.8 | 115.9 |
| stop\_2 | Railway Station | 28.9 | 116 |
| stop\_3 | Airport | 29 | 116.1 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **stop\_times.txt** |  |  |  |  |
| **trip\_id** | **stop\_sequence** | **stop\_id** | **arrival\_time** | **departure\_time** |
| trip\_1 | 1 | stop\_1 | 0:00:00 | 0:00:00 |
| trip\_1 | 2 | stop\_2 | 0:10:00 | 0:10:00 |
| trip\_1 | 3 | stop\_3 | 0:30:00 | 0:30:00 |
| trip\_2 | 1 | stop\_3 | 0:00:00 | 0:00:00 |
| trip\_2 | 2 | stop\_2 | 0:10:00 | 0:10:00 |
| trip\_2 | 3 | stop\_1 | 0:30:00 | 0:30:00 |
| trip\_3 | 1 | stop\_1 | 0:00:00 | 0:00:00 |
| trip\_3 | 2 | stop\_2 | 0:08:00 | 0:08:00 |
| trip\_3 | 3 | stop\_3 | 0:20:00 | 0:20:00 |
| trip\_4 | 1 | stop\_3 | 0:00:00 | 0:00:00 |
| trip\_4 | 2 | stop\_2 | 0:12:00 | 0:12:00 |
| trip\_4 | 3 | stop\_1 | 0:20:00 | 0:20:00 |

|  |  |  |  |
| --- | --- | --- | --- |
| **frequencies.txt** |  |  |  |
| **trip\_id** | **headway\_secs** | **start\_time** | **end\_time** |
| trip\_1 | 300 | 7:00:00 | 12:00:00 |
| trip\_2 | 300 | 7:00:00 | 12:00:00 |
| trip\_3 | 600 | 12:00:00 | 22:00:00 |
| trip\_4 | 600 | 12:00:00 | 22:00:00 |

### Example 6: Trip variations: express and short trips

In addition to trips that serve the full route, Route 1 service includes express trips to the airport that skip the railway station, and shortened trips that end at the railway station. A different trip\_headsign value indicates the difference in trip patterns.

*Required file not shown: agency.txt*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **calendar.txt** |  |  |  |  |  |  |  |  |  |
| **service\_id** | **start\_date** | **end\_date** | **monday** | **tuesday** | **wednesday** | **thursday** | **friday** | **saturday** | **sunday** |
| winter\_weekday | 20130921 | 20140619 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |

|  |  |  |  |
| --- | --- | --- | --- |
| **routes.txt** |  |  |  |
| **route\_id** | **route\_short\_name** | **route\_long\_name** | **route\_type** |
| route\_1 | 1 | Downtown/Airport | 3 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **trips.txt** |  |  |  |  |
| **trip\_id** | **route\_id** | **service\_id** | **direction\_id** | **trip\_headsign** |
| trip\_1 | route\_1 | winter\_weekday | 0 | Airport |
| trip\_2 | route\_1 | winter\_weekday | 1 | Downtown |
| trip\_3 | route\_1 | winter\_weekday | 0 | Airport (Express) |
| trip\_4 | route\_1 | winter\_weekday | 1 | Downtown (Express) |
| trip\_5 | route\_1 | winter\_weekday | 0 | Railway Station |
| trip\_6 | route\_1 | winter\_weekday | 1 | Downtown |

|  |  |  |  |
| --- | --- | --- | --- |
| **stops.txt** |  |  |  |
| **stop\_id** | **stop\_name** | **stop\_lat** | **stop\_lon** |
| stop\_1 | Main and 1st St. | 28.8 | 115.9 |
| stop\_2 | Railway Station | 28.9 | 116 |
| stop\_3 | Airport | 29 | 116.1 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **stop\_times.txt** |  |  |  |  |
| **trip\_id** | **stop\_sequence** | **stop\_id** | **arrival\_time** | **departure\_time** |
| trip\_1 | 1 | stop\_1 | 0:00:00 | 0:00:00 |
| trip\_1 | 2 | stop\_2 | 0:10:00 | 0:10:00 |
| trip\_1 | 3 | stop\_3 | 0:30:00 | 0:30:00 |
| trip\_2 | 1 | stop\_3 | 0:00:00 | 0:00:00 |
| trip\_2 | 2 | stop\_2 | 0:10:00 | 0:10:00 |
| trip\_2 | 3 | stop\_1 | 0:30:00 | 0:30:00 |
| trip\_3 | 1 | stop\_1 | 9:00:00 | 9:00:00 |
| trip\_3 | 2 | stop\_3 | 9:22:00 | 9:22:00 |
| trip\_4 | 1 | stop\_3 | 9:22:00 | 9:22:00 |
| trip\_4 | 2 | stop\_1 | 9:42:00 | 9:42:00 |
| trip\_5 | 1 | stop\_1 | 10:00:00 | 10:00:00 |
| trip\_5 | 2 | stop\_2 | 10:10:00 | 10:10:00 |
| trip\_6 | 1 | stop\_2 | 10:10:00 | 10:10:00 |
| trip\_6 | 2 | stop\_1 | 10:20:00 | 10:20:00 |

|  |  |  |  |
| --- | --- | --- | --- |
| **frequencies.txt** |  |  |  |
| **trip\_id** | **headway\_secs** | **start\_time** | **end\_time** |
| trip\_1 | 3600 | 9:00:00 | 10:30:00 |
| trip\_2 | 3600 | 9:30:00 | 11:00:00 |

### Example 7: Different but similar travel patterns are defined as separate routes

The schedule defined here is the same as is defined in example 5. However, in this case, variations are presented to customers as different routes (1, 1A, and 1B). Colors match to route\_id.

*Required file not shown: agency.txt*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **calendar.txt** |  |  |  |  |  |  |  |  |  |
| **service\_id** | **start\_date** | **end\_date** | **monday** | **tuesday** | **wednesday** | **thursday** | **friday** | **saturday** | **sunday** |
| winter\_weekday | 20130921 | 20140619 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |

|  |  |  |  |
| --- | --- | --- | --- |
| **routes.txt** |  |  |  |
| **route\_id** | **route\_short\_name** | **route\_long\_name** | **route\_type** |
| route\_1 | 1 | Downtown/Airport | 3 |
| route\_1a | 1A | Airport Express | 3 |
| route\_1b | 1B | Downtown/Railway Station | 3 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **trips.txt** |  |  |  |  |
| **trip\_id** | **route\_id** | **service\_id** | **direction\_id** | **trip\_headsign** |
| trip\_1 | route\_1 | winter\_weekday | 0 | Airport |
| trip\_2 | route\_1 | winter\_weekday | 1 | Downtown |
| trip\_3 | route\_1a | winter\_weekday | 0 | Airport |
| trip\_4 | route\_1a | winter\_weekday | 1 | Downtown |
| trip\_5 | route\_1b | winter\_weekday | 0 | Railway Station |
| trip\_6 | route\_1b | winter\_weekday | 1 | Downtown |

|  |  |  |  |
| --- | --- | --- | --- |
| **stops.txt** |  |  |  |
| **stop\_id** | **stop\_name** | **stop\_lat** | **stop\_lon** |
| stop\_1 | Main and 1st St. | 28.8 | 115.9 |
| stop\_2 | Railway Station | 28.9 | 116 |
| stop\_3 | Airport | 29 | 116.1 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **stop\_times.txt** |  |  |  |  |
| **trip\_id** | **stop\_sequence** | **stop\_id** | **arrival\_time** | **departure\_time** |
| trip\_1 | 1 | stop\_1 | 0:00:00 | 0:00:00 |
| trip\_1 | 2 | stop\_2 | 0:10:00 | 0:10:00 |
| trip\_1 | 3 | stop\_3 | 0:30:00 | 0:30:00 |
| trip\_2 | 1 | stop\_3 | 0:00:00 | 0:00:00 |
| trip\_2 | 2 | stop\_2 | 0:10:00 | 0:10:00 |
| trip\_2 | 3 | stop\_1 | 0:30:00 | 0:30:00 |
| trip\_3 | 1 | stop\_1 | 9:00:00 | 9:00:00 |
| trip\_3 | 2 | stop\_3 | 9:22:00 | 9:22:00 |
| trip\_4 | 1 | stop\_3 | 9:22:00 | 9:22:00 |
| trip\_4 | 2 | stop\_1 | 9:42:00 | 9:42:00 |
| trip\_5 | 1 | stop\_1 | 10:00:00 | 10:00:00 |
| trip\_5 | 2 | stop\_2 | 10:10:00 | 10:10:00 |
| trip\_6 | 1 | stop\_2 | 10:10:00 | 10:10:00 |
| trip\_6 | 2 | stop\_1 | 10:20:00 | 10:20:00 |

|  |  |  |  |
| --- | --- | --- | --- |
| **frequencies.txt** |  |  |  |
| **trip\_id** | **headway\_secs** | **start\_time** | **end\_time** |
| trip\_1 | 3600 | 9:00:00 | 10:30:00 |
| trip\_2 | 3600 | 9:30:00 | 11:00:00 |
|  |  |  |  |

### Example 8: Fares, a combination of free and discounted transfers

One ride is 2 RMB, but customers may purchase a transfer for an additional 1 RMB. This fare structure is applied across the system.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **fare\_attributes.txt** |  |  |  |  |  |
| **fare\_id** | **price** | **currency\_type** | **payment\_method** | **transfers** | **transfer\_duration** |
| one\_ride | 2 | CNY | 1 | 0 |  |
| transfer\_fare | 3 | CNY | 1 | 1 |  |

### Example 9: Fares are defined by zones

Travel within the central district (zone\_a) is less expensive than travel between zones.

Coloring according to fare\_id.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **stops.txt** |  |  |  |  |
| **stop\_id** | **stop\_name** | **stop\_lat** | **stop\_lon** | **zone\_id** |
| stop\_1 | Main and 1st St. | 28.8 | 115.9 | zone\_a |
| stop\_2 | Railway Station | 28.9 | 116 | zone\_a |
| stop\_3 | Airport | 29 | 116.1 | zone\_b |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **fare\_attributes.txt** |  |  |  |  |  |
| **fare\_id** | **price** | **currency\_type** | **payment\_method** | **transfers** | **transfer\_duration** |
| one\_zone | 2 | CNY | 1 |  |  |
| two\_zones | 3 | CNY | 1 |  |  |

|  |  |  |
| --- | --- | --- |
| **fare\_rules.txt** |  |  |
| **fare\_id** | **origin\_id** | **destination\_id** |
| one\_zone | zone\_a | zone\_a |
| two\_zones | zone\_a | zone\_b |
| two\_zones | zone\_b | zone\_a |

### 

### 

### Example 10: Fare structure includes free transfers, but only for specific routes

Routes 1 and 2 cost 1 RMB to ride. Transfers are available between those routes for 0.5 RMB of extra cost (transfers are valid for 1 hour).Routes 3 and 4 cost 5 RMB to ride. Discounted transfers are not available between those routes. However, free transfers are available to Routes 1 and 2. Notice that route\_3\_fare and route\_4\_fare are applied for route\_1 and route\_2 in fare\_rules.txt. Still, when the rider only uses Route 1 or 2, the less expensive fare will be returned: when software reads the GTFS and determines the fare, it will always select the least expensive fare if multiple rules match.

*Coloring according to fare\_id.*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **fare\_attributes.txt** |  |  |  |  |  |
| **fare\_id** | **price** | **currency\_type** | **payment\_method** | **transfers** | **transfer\_duration** |
| cheap\_fare | 1 | CNY | 1 |  |  |
| cheap\_fare\_transfer | 1.5 | CNY | 1 |  | 3600 |
| route\_3\_fare | 5 | CNY | 1 |  | 3600 |
| route\_4\_fare | 5 | CNY | 1 |  | 3600 |

|  |  |
| --- | --- |
| **fare\_rules.txt** |  |
| **fare\_id** | **route\_id** |
| cheap\_fare | route\_1 |
| cheap\_fare | route\_2 |
| cheap\_fare\_transfer | route\_1 |
| cheap\_fare\_transfer | route\_2 |
| route\_3\_fare | route\_3 |
| route\_3\_fare | route\_1 |
| route\_3\_fare | route\_2 |
| route\_4\_fare | route\_4 |
| route\_4\_fare | route\_1 |
| route\_4\_fare | route\_2 |

### Example 11: A full example, with trips, frequencies, and fares

* Mon-Fri service in winter, 2 trips in each direction per day
* Mon-Sun service in the summer
  + 10 min headway before noon
  + 15 min headway in afternoon
* Zone-based fares
  + $3 fare to/from Stagecoach Hotel & Casino
  + $2 fare for other trips

This dataset can be downloaded from <http://data.trilliumtransit.com/gtfs/deathvalley-demo-ca-us/>

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **agency.txt** | |  |  |  |  |  |
| **agency\_id** | **agency\_name** | **agency\_url** | **agency\_timezone** | **agency\_phone** | **agency\_fare\_url** | **agency\_lang** |
| 249 | Demo Transit Authority | http://gtfsdemo-transit.org | America/Los\_Angeles | 503-567-8422 | http://gtfsdemo-transit.org/fares-and-tickets | en |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **stops.txt** | |  |  |  |
| **stop\_id** | **stop\_name** | **stop\_lat** | **stop\_lon** | **zone\_id** |
| stop\_1 | E Main St and S Irving St | 36.905697 | -116.76218 | zone\_a |
| stop\_2 | North Ave at D Ave N | 36.914893 | -116.76821 | zone\_a |
| stop\_3 | Stagecoach Hotel & Casino | 36.915682 | -116.751677 | zone\_b |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **calendar.txt** |  |  |  |  |  |  |  |  |  |
| **service\_id** | **monday** | **tuesday** | **wednesday** | **thursday** | **friday** | **saturday** | **sunday** | **start\_date** | **end\_date** |
| winter\_weekday | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 20151101 | 20160430 |
| summer\_daily | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 20160501 | 20161031 |

|  |  |  |  |
| --- | --- | --- | --- |
| **routes.txt** |  |  |  |
| **route\_id** | **route\_short\_name** | **route\_long\_name** | **route\_type** |
| route\_1 | 1 | Beatty Local | 3 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **trips.txt** |  |  |  |  |
| **trip\_id** | **route\_id** | **service\_id** | **direction\_id** | **trip\_headsign** |
| trip\_1 | route\_1 | winter\_weekday | 0 | Stagecoach Hotel & Casino |
| trip\_2 | route\_1 | winter\_weekday | 1 | E Main St and S Irving St (Express) |
| trip\_3 | route\_1 | winter\_weekday | 0 | Stagecoach Hotel & Casino (Express) |
| trip\_4 | route\_1 | winter\_weekday | 1 | E Main St and S Irving St |
| trip\_5 | route\_1 | summer\_daily | 0 | Stagecoach Hotel & Casino |
| trip\_6 | route\_1 | summer\_daily | 1 | E Main St and S Irving St |
| trip\_7 | route\_1 | summer\_daily | 0 | Stagecoach Hotel & Casino |
| trip\_8 | route\_1 | summer\_daily | 1 | E Main St and S Irving St |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **stop\_times.txt** | | |  | |  | |  |
| **trip\_id** | **stop\_sequence** | **stop\_id** | | **arrival\_time** | | **departure\_time** | |
| trip\_1 | 1 | stop\_1 | | 10:00:00 | | 10:00:00 | |
| trip\_1 | 2 | stop\_2 | | 10:10:00 | | 10:10:00 | |
| trip\_1 | 3 | stop\_3 | | 10:30:00 | | 10:30:00 | |
| trip\_2 | 1 | stop\_3 | | 10:30:00 | | 10:30:00 | |
| trip\_2 | 3 | stop\_1 | | 11:00:00 | | 11:00:00 | |
| trip\_3 | 1 | stop\_1 | | 15:00:00 | | 15:00:00 | |
| trip\_3 | 3 | stop\_3 | | 15:30:00 | | 15:30:00 | |
| trip\_4 | 1 | stop\_3 | | 15:30:00 | | 15:30:00 | |
| trip\_4 | 2 | stop\_2 | | 15:50:00 | | 15:50:00 | |
| trip\_4 | 3 | stop\_1 | | 16:00:00 | | 16:00:00 | |
| trip\_5 | 1 | stop\_1 | | 7:00:00 | | 7:00:00 | |
| trip\_5 | 2 | stop\_2 | | 7:10:00 | | 7:10:00 | |
| trip\_5 | 3 | stop\_3 | | 7:30:00 | | 7:30:00 | |
| trip\_6 | 1 | stop\_3 | | 7:30:00 | | 7:30:00 | |
| trip\_6 | 2 | stop\_2 | | 7:50:00 | | 7:50:00 | |
| trip\_6 |  | stop\_3 | | 8:00:00 | | 8:00:00 | |
| trip\_7 | 1 | stop\_1 | | 12:00:00 | | 12:00:00 | |
| trip\_7 | 2 | stop\_2 | | 12:08:00 | | 12:08:00 | |
| trip\_7 | 3 | stop\_3 | | 12:25:00 | | 12:25:00 | |
| trip\_8 | 1 | stop\_3 | | 12:25:00 | | 12:25:00 | |
| trip\_8 | 2 | stop\_2 | | 12:37:00 | | 12:42:00 | |
| trip\_8 | 3 | stop\_1 | | 12:50:00 | | 12:50:00 | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **frequencies.txt** | | |  | |  |
| **trip\_id** | **headway\_secs** | **start\_time** | | **end\_time** | |
| trip\_5 | 600 | 7:00:00 | | 12:00:00 | |
| trip\_6 | 600 | 7:30:00 | | 12:30:00 | |
| trip\_7 | 900 | 12:00:00 | | 22:00:00 | |
| trip\_8 | 900 | 12:25:00 | | 22:25:00 | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **fare\_attributes.txt** | | | |  | |  | |  |
| **fare\_id** | **price** | **currency\_type** | **payment\_method** | | **transfers** | | **transfer\_duration** | |
| one\_zone | 2 | USD | 1 | |  | |  | |
| two\_zones | 3 | USD | 1 | |  | |  | |

|  |  |  |
| --- | --- | --- |
| **fare\_rules.txt** | |  |
| **fare\_id** | **origin\_id** | **destination\_id** |
| one\_zone | zone\_a | zone\_a |
| two\_zones | zone\_a | zone\_b |
| two\_zones | zone\_b | zone\_a |

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