In [3]:
```python
import sys

home = '/home/araichev/make_gtfs/'

sys.path.append(home)
from make_gtfs.make_gtfs import *

%load_ext autoreload
%autoreload 2
```

The autoreload extension is already loaded. To reload it, use:
  %reload_ext autoreload

In [4]:
```python
path = home + 'data/auckland_snippet/'
feed = Feed(path)
```

In [5]:
```python
# Create agency
feed.create_agency()
feed.agency
```

Out[5]:

	agency_name	agency_timezone	agency_url
0	Auckland Transport	Pacific/Auckland	https://at.govt.nz/

In [6]:
```python
feed.create_calendar()
feed.calendar
```

Out[6]:

	end_date	friday	monday	saturday	service_id	start_date	sunday	thursday	tuesday
0	20150101	1	1	1	c0	20140101	1	1	1

In [7]:
```python
feed.create_routes()
feed.routes
```

Out[7]:

	route_short_name	route_desc	route_type	route_id
0	010	City Link, Wynyard Quarter to Karangahape Rd v...	3	r0
1	020	Inner Link. Britomart, Three Lamps, Ponsonby, ...	3	r1
2	030	Grey Lynn to Auckland University via Richmond ...	3	r2
3	031	St Lukes to Auckland University via Richmond R...	3	r3
4	032	Westmere to Auckland University via Williamson...	3	r4
5	033	Benson Rd to Karangahape Rd via Remuera, Hobso...	3	r5

In [8]:
```
feed.create_shapes()
feed.shapes
```

Out[8]:

	shape_id	shape_pt_sequence	shape_pt_lon	shape_pt_lat
0	s#r0	0	174.767029	-36.844440
1	s#r0	1	174.767401	-36.843364
2	s#r0	2	174.768695	-36.843668
3	s#r0	3	174.768113	-36.845003
4	s#r0	4	174.767631	-36.844886
5	s#r0	5	174.766853	-36.844619
6	s#r0	6	174.765414	-36.849031
7	s#r0	7	174.763086	-36.854224
8	s#r0	8	174.762292	-36.853955
9	s#r0	9	174.761962	-36.853794
10	s#r0	10	174.758882	-36.856034
11	s#r0	11	174.759072	-36.857619
12	s#r0	12	174.760359	-36.857912
13	s#r0	13	174.761580	-36.857914
14	s#r0	14	174.765362	-36.848887
15	s#r0	15	174.767029	-36.844440
16	s#r1	0	174.744138	-36.847422
17	s#r1	1	174.743802	-36.848536
18	s#r1	2	174.744437	-36.850401
19	s#r1	3	174.744949	-36.852240
20	s#r1	4	174.745351	-36.853356
21	s#r1	5	174.746586	-36.856383
22	s#r1	6	174.749513	-36.857891
23	s#r1	7	174.7751020	-36.858745
24	s#r1	8	174.7752800	-36.859625
25	s#r1	9	174.754449	-36.858743
26	s#r1	10	174.758345	-36.857714
27	s#r1	11	174.759975	-36.857934
28	s#r1	12	174.762143	-36.857998
29	s#r1	13	174.762377	-36.857951
...	...	...	...	...
188	s#r5	46	174.796266	-36.864332
189	s#r5	47	174.796057	-36.869880
190	s#r5	48	174.795016	-36.872022

```
In [9]:  feed.get_service_windows()
```

```
Out[9]:  {'saturday_eve': [['19:00:00', '24:00:00']],
          'sunday_eve': [['19:00:00', '24:00:00']],
          'weekday_offpeak': [['09:00:00', '16:00:00'], ['18:00:00', '19:00:00']
         ],
          'weekday_eve': [['06:00:00', '07:00:00'], ['19:00:00', '24:00:00']],
          'saturday_day': [['07:00:00', '19:00:00']],
          'sunday_day': [['07:00:00', '19:00:00']],
          'weekday_peak': [['07:00:00', '09:00:00'], ['16:00:00', '18:00:00']]}
```

```
In [10]:  feed.create_stops()
          feed.stops
```

Out[10]:

	stop_id	stop_name	stop_lon	stop_lat
0	st#r4#0	Route 032 stop 0	174.766889	-36.844595
1	st#r4#1	Route 032 stop 1	174.723916	-36.851549
2	st#r3#0	Route 031 stop 0	174.737212	-36.864404
3	st#r3#1	Route 031 stop 1	174.735337	-36.884476
4	st#r0#0	Route 010 stop 0	174.767029	-36.844440
5	st#r0#1	Route 010 stop 1	174.767029	-36.844440
6	st#r1#0	Route 020 stop 0	174.744138	-36.847422
7	st#r1#1	Route 020 stop 1	174.744298	-36.847422
8	st#r2#0	Route 030 stop 0	174.768581	-36.851434
9	st#r2#1	Route 030 stop 1	174.737459	-36.864505
10	st#r5#0	Route 033 stop 0	174.759375	-36.857818
11	st#r5#1	Route 033 stop 1	174.809914	-36.873762

In [11]:
```
feed.create_trips()
feed.trips
```

Out[11]:

	route_id	trip_id	direction_id	shape_id	service_id
0	r0	t#r0#saturday_eve#19:00:00#0#0	0	s#r0	c0
1	r0	t#r0#saturday_eve#19:00:00#0#1	0	s#r0	c0
2	r0	t#r0#saturday_eve#19:00:00#0#2	0	s#r0	c0
3	r0	t#r0#saturday_eve#19:00:00#0#3	0	s#r0	c0
4	r0	t#r0#saturday_eve#19:00:00#0#4	0	s#r0	c0
5	r0	t#r0#saturday_eve#19:00:00#0#5	0	s#r0	c0
6	r0	t#r0#saturday_eve#19:00:00#0#6	0	s#r0	c0
7	r0	t#r0#saturday_eve#19:00:00#0#7	0	s#r0	c0
8	r0	t#r0#saturday_eve#19:00:00#0#8	0	s#r0	c0
9	r0	t#r0#saturday_eve#19:00:00#0#9	0	s#r0	c0
10	r0	t#r0#saturday_eve#19:00:00#0#10	0	s#r0	c0
11	r0	t#r0#saturday_eve#19:00:00#0#11	0	s#r0	c0
12	r0	t#r0#saturday_eve#19:00:00#0#12	0	s#r0	c0
13	r0	t#r0#saturday_eve#19:00:00#0#13	0	s#r0	c0
14	r0	t#r0#saturday_eve#19:00:00#0#14	0	s#r0	c0
15	r0	t#r0#saturday_eve#19:00:00#0#15	0	s#r0	c0
16	r0	t#r0#saturday_eve#19:00:00#0#16	0	s#r0	c0
17	r0	t#r0#saturday_eve#19:00:00#0#17	0	s#r0	c0
18	r0	t#r0#saturday_eve#19:00:00#0#18	0	s#r0	c0
19	r0	t#r0#saturday_eve#19:00:00#0#19	0	s#r0	c0
20	r0	t#r0#saturday_eve#19:00:00#0#20	0	s#r0	c0
21	r0	t#r0#saturday_eve#19:00:00#0#21	0	s#r0	c0
22	r0	t#r0#saturday_eve#19:00:00#0#22	0	s#r0	c0
23	r0	t#r0#saturday_eve#19:00:00#0#23	0	s#r0	c0
24	r0	t#r0#saturday_eve#19:00:00#0#24	0	s#r0	c0
25	r0	t#r0#saturday_eve#19:00:00#0#25	0	s#r0	c0
26	r0	t#r0#saturday_eve#19:00:00#0#26	0	s#r0	c0
27	r0	t#r0#saturday_eve#19:00:00#0#27	0	s#r0	c0
28	r0	t#r0#saturday_eve#19:00:00#0#28	0	s#r0	c0
29	r0	t#r0#saturday_eve#19:00:00#0#29	0	s#r0	c0
...	...	...	...	...	...
2018	r5	t#r5#sunday_day#07:00:00#0#10	0	s#r5	c0
2019	r5	t#r5#sunday_day#07:00:00#0#11	0	s#r5	c0
2020	r5	t#r5#sunday_day#07:00:00#1#0	1	s#r5	c0

```
In [12]:  feed.create_stop_times()
          feed.stop_times
```

Out[12]:

	trip_id	stop_id	stop_sequence	arrival_time	departure_t
0	t#r0#saturday_eve#19:00:00#0#0	st#r0#0	0	19:00:00	19:00:00
1	t#r0#saturday_eve#19:00:00#0#0	st#r0#1	1	19:12:17	19:12:17
2	t#r0#saturday_eve#19:00:00#0#1	st#r0#0	0	19:10:00	19:10:00
3	t#r0#saturday_eve#19:00:00#0#1	st#r0#1	1	19:22:17	19:22:17
4	t#r0#saturday_eve#19:00:00#0#2	st#r0#0	0	19:20:00	19:20:00
5	t#r0#saturday_eve#19:00:00#0#2	st#r0#1	1	19:32:17	19:32:17
6	t#r0#saturday_eve#19:00:00#0#3	st#r0#0	0	19:30:00	19:30:00
7	t#r0#saturday_eve#19:00:00#0#3	st#r0#1	1	19:42:17	19:42:17
8	t#r0#saturday_eve#19:00:00#0#4	st#r0#0	0	19:40:00	19:40:00
9	t#r0#saturday_eve#19:00:00#0#4	st#r0#1	1	19:52:17	19:52:17
10	t#r0#saturday_eve#19:00:00#0#5	st#r0#0	0	19:50:00	19:50:00
11	t#r0#saturday_eve#19:00:00#0#5	st#r0#1	1	20:02:17	20:02:17
12	t#r0#saturday_eve#19:00:00#0#6	st#r0#0	0	20:00:00	20:00:00
13	t#r0#saturday_eve#19:00:00#0#6	st#r0#1	1	20:12:17	20:12:17
14	t#r0#saturday_eve#19:00:00#0#7	st#r0#0	0	20:10:00	20:10:00
15	t#r0#saturday_eve#19:00:00#0#7	st#r0#1	1	20:22:17	20:22:17
16	t#r0#saturday_eve#19:00:00#0#8	st#r0#0	0	20:20:00	20:20:00
17	t#r0#saturday_eve#19:00:00#0#8	st#r0#1	1	20:32:17	20:32:17
18	t#r0#saturday_eve#19:00:00#0#9	st#r0#0	0	20:30:00	20:30:00
19	t#r0#saturday_eve#19:00:00#0#9	st#r0#1	1	20:42:17	20:42:17
20	t#r0#saturday_eve#19:00:00#0#10	st#r0#0	0	20:40:00	20:40:00
21	t#r0#saturday_eve#19:00:00#0#10	st#r0#1	1	20:52:17	20:52:17
22	t#r0#saturday_eve#19:00:00#0#11	st#r0#0	0	20:50:00	20:50:00
23	t#r0#saturday_eve#19:00:00#0#11	st#r0#1	1	21:02:17	21:02:17
24	t#r0#saturday_eve#19:00:00#0#12	st#r0#0	0	21:00:00	21:00:00
25	t#r0#saturday_eve#19:00:00#0#12	st#r0#1	1	21:12:17	21:12:17
26	t#r0#saturday_eve#19:00:00#0#13	st#r0#0	0	21:10:00	21:10:00
27	t#r0#saturday_eve#19:00:00#0#13	st#r0#1	1	21:22:17	21:22:17
28	t#r0#saturday_eve#19:00:00#0#14	st#r0#0	0	21:20:00	21:20:00
29	t#r0#saturday_eve#19:00:00#0#14	st#r0#1	1	21:32:17	21:32:17
...	...	...	...	...	...
4066	t#r5#weekday_peak#07:00:00#0#1	st#r5#0	0	07:30:00	07:30:00
4067	t#r5#weekday_peak#07:00:00#0#1	st#r5#1	1	08:16:02	08:16:02
4068	t#r5#weekday_peak#07:00:00#0#2	st#r5#0	0	08:00:00	08:00:00

```
In [13]:  feed.create_all()
          feed.export(home + 'examples/gtfs.zip')
```

In [13]: