In [1]:

```python
import pandas as pd
```

In [21]:

```python
df = pd.read_json("schedules.json")
```

In [22]:

```python
df
```

Out[22]:

	arrival	day	train_name	station_name	station_code	id	train_number	departure
0	None	1.0	Falaknuma Lingampalli MMTS	KACHEGUDA FALAKNUMA	FM	302214	47154	07:55:00
1	None	1.0	Thrissur Guruvayur Passenger	THRISUR	TCR	281458	56044	18:55:00
2	None	1.0	Porbandar Muzaffarpur Express	PORBANDAR	PBR	309335	19269	15:05:00
3	None	1.0	RAIPUR ITWARI PASS	RAIPUR JN	R	283774	58205	13:30:00
4	None	1.0	Gomoh-Asansol MEMU	GOMOH JN	GMO	319937	63542	07:20:00
...	...	...	...	...	...	...	...	...
417075	12:39:00	2.0	HOWRAH - JAYNAGAR Passenger	RAJANAGAR	RJA	424266	53041	12:39:00
417076	12:46:00	2.0	HOWRAH - JAYNAGAR Passenger	LALIT LAKSHMIPR	LLPR	424267	53041	12:47:00
417077	12:59:00	2.0	HOWRAH - JAYNAGAR Passenger	KHAJAULI	KJI	424268	53041	13:00:00
417078	13:09:00	2.0	HOWRAH - JAYNAGAR Passenger	KORAHIA	KRHA	424269	53041	13:10:00
417079	14:20:00	2.0	HOWRAH - JAYNAGAR Passenger	JAYNAGAR	JYG	424270	53041	None

417080 rows × 8 columns

In [23]:

```python
indices = df[(df.arrival == "None") & (df.departure == "None")].index
```

In [24]:

```python
df = df.drop(indices)
```

In [25]:

```
df
```

Out[25]:

	arrival	day	train_name	station_name	station_code	id	train_number	departure
0	None	1.0	Falaknuma Lingampalli MMTS	KACHEGUDA FALAKNUMA	FM	302214	47154	07:55:00
1	None	1.0	Thrissur Guruvayur Passenger	THRISUR	TCR	281458	56044	18:55:00
2	None	1.0	Porbandar Muzaffarpur Express	PORBANDAR	PBR	309335	19269	15:05:00
3	None	1.0	RAIPUR ITWARI PASS	RAIPUR JN	R	283774	58205	13:30:00
4	None	1.0	Gomoh-Asansol MEMU	GOMOH JN	GMO	319937	63542	07:20:00
...	...	...	...	...	...	...	...	...
417075	12:39:00	2.0	HOWRAH - JAYNAGAR Passenger	RAJANAGAR	RJA	424266	53041	12:39:00
417076	12:46:00	2.0	HOWRAH - JAYNAGAR Passenger	LALIT LAKSHMIPR	LLPR	424267	53041	12:47:00
417077	12:59:00	2.0	HOWRAH - JAYNAGAR Passenger	KHAJAULI	KJI	424268	53041	13:00:00
417078	13:09:00	2.0	HOWRAH - JAYNAGAR Passenger	KORAHIA	KRHA	424269	53041	13:10:00
417079	14:20:00	2.0	HOWRAH - JAYNAGAR Passenger	JAYNAGAR	JYG	424270	53041	None

394391 rows × 8 columns

In [26]:

```
df.arrival = df.arrival.replace("None", 0)
```

In [27]:

```
df.departure = df.departure.replace("None", "Ending")
```

In [28]:

```
df.head(55)
```

Out[28]:

	arrival	day	train_name	station_name	station_code	id	train_number	departure
0	0	1.0	Falaknuma Lingampalli MMTS	KACHEGUDA FALAKNUMA	FM	302214	47154	07:55:00
1	0	1.0	Thrissur Guruvayur Passenger	THRISUR	TCR	281458	56044	18:55:00
2	0	1.0	Porbandar Muzaffarpur Express	PORBANDAR	PBR	309335	19269	15:05:00
3	0	1.0	RAIPUR ITWARI PASS	RAIPUR JN	R	283774	58205	13:30:00
4	0	1.0	Gomoh-Asansol MEMU	GOMOH JN	GMO	319937	63542	07:20:00
5	0	1.0	Rai Bareli-Mumbai LTT Saket Express	RAE BARELI JN	RBL	520605	21068	16:15:00
6	0	1.0	Subramanya Road Mangalore Passenger	Subrahmanya Road	SBHR	335930	56646	13:25:00
7	0	1.0	Ernakulam Alappuzha Passenger	ERNAKULAM JN	ERS	282535	56379	07:30:00
8	0	1.0	Salempur Barhaj Passenger	SALEMPUR JN	SRU	336174	55145	18:40:00
9	0	1.0	Bir Khandwa Shuttle	Bir	BIR	17022	51688	15:15:00
10	0	1.0	Asansol-Bokaro Steel City MEMU	ASANSOL JN	ASN	336193	63596	17:50:00
11	0	1.0	Tanakpur Aishbagh Express	Tanakpur	TPU	282465	52228	18:40:00
12	0	1.0	Botad Bhavnagar Passenger	BOTAD JN	BTD	336178	59227	21:10:00
13	0	1.0	Harihar Express	MUZAFFARPUR JN	MFP	168737	14523	07:25:00
14	0	1.0	Birmitrapur Barsuan Passenger	Biramitrapur	BRMP	336277	58151	07:10:00
15	0	1.0	Patan Mehsana Passenger	PATAN	PTN	299325	59478	17:05:00
16	0	1.0	Sealdah-Gede Local	KOLKATA SEALDAH	SDAH	336057	31929	20:32:00
17	06:49:00	1.0	Pipar Road -Jodhpur Passenger Special	PIPAR ROAD JN	PPR	11813	04857	06:50:00
18	0	1.0	Buxar Mughal Sarai Passenger	BUXAR	BXR	318164	53215	09:15:00
19	0	1.0	Howrah Panskura EMU	HOWRAH JN	HWH	299882	38453	17:50:00
20	0	1.0	Barddhaman Rampurhat Passenger	BARDDHAMAN JN	BWN	335911	53067	17:35:00

	arrival	day	train_name	station_name	station_code	id	train_number	departure
21	0	1.0	New Delhi-Sealdah AC Duronto Express	NEW DELHI	NDLS	41765	12260	20:05:00
22	0	1.0	Lingampalli Hyderabad MMTS	LINGAMPALLI	LPI	378369	47128	07:00:00
23	0	1.0	HYDERABAD DECCAN - AJMER SF Exp	HYDERABAD DECCAN	HYB	440052	12720	20:30:00
24	0	1.0	Kannur Passenger	MANGALORE CNTL	MAQ	335377	56656	16:35:00
25	0	1.0	Kandari Express	Digha Flag Station	DGHA	46378	18002	18:20:00
26	0	1.0	Doon Express	HOWRAH JN	HWH	320734	13009	20:35:00
27	18:10:00	1.0	Bxt Alipur Duar Passenger	NEW COOCH BEHAR	NCB	299907	55792	18:15:00
28	0	1.0	Poorvanchal Express	KOLKATA CHITPUR	KOAA	334956	15051	14:30:00
29	0	1.0	GAYA - CHENNAI EGMORE SF Exp	GAYA JN	GAYA	522700	12389	05:45:00
30	0	1.0	Chirmiri Katni Passenger	Chirmiri	CHRM	16433	51606	03:00:00
31	0	1.0	Ranchi - Lohardaga - Barkichampi Passenger	RANCHI	RNC	299912	58653	09:30:00
32	0	1.0	Belgaum Miraj Passenger	BELGAUM	BGM	16272	51462	06:00:00
33	0	1.0	Bir Khandwa Shuttle	Bir	BIR	17032	51690	19:15:00
34	0	1.0	Barauni-Hajipur Passenger	BARAUNI JN	BJU	332324	55549	22:40:00
35	0	1.0	Surat Virar Passenger	SURAT	ST	299922	59038	04:20:00
36	0	1.0	Sakri Nirmali Passenger	SAKRI JN	SKI	333312	52523	02:00:00
37	0	1.0	Ahmedabad Mumbai Central Superfast Special	AHMEDABAD JN	ADI	366170	09002	21:40:00
38	0	1.0	Bina Guna Passenger	BINA JN	BINA	16502	51609	15:10:00
39	0	1.0	Wardha Bhusaval Passenger	WARDHA JN	WR	14705	51198	23:00:00
40	0	1.0	Hyderabad Lingampalli MMTS	HYDERABAD DECCAN	HYB	334266	47124	21:20:00
41	0	1.0	VASCO DA GAMA - KULEM Passenger	VASCO DA GAMA	VSG	521211	56966	17:30:00
42	0	1.0	Ranchi-New Delhi Rajdhani Express	RANCHI	RNC	377475	12453	17:10:00
43	0	1.0	Palasa Visakhapatnam Passenger	PALASA	PSA	284291	58525	09:00:00
44	0	1.0	Krishak Express	LUCKNOW JN	LJN	334188	15008	23:05:00

	arrival	day	train_name	station_name	station_code	id	train_number	departure
45	0	1.0	KULEM - VASCO DA GAMA Passenger	KULEM	QLM	521223	56965	17:15:00
46	0	1.0	Guna Bina Passenger	GUNA	GUNA	16488	51608	10:45:00
47	0	1.0	Delhi-Jaisalmer Express	OLD DELHI	DLI	293725	14659	17:30:00
48	0	1.0	Nagbhir Nagpur Passenger	Nagbhir Junction	NAB	333836	58844	06:15:00
49	0	1.0	Ajmer Jaipur SF Special	AJMER JN	AII	6163	09621	11:45:00
50	0	1.0	Rajahmundry Vijayawada Passenger	RAJAMUNDRY	RJY	332018	57200	17:15:00
51	0	1.0	AJMER - HYDERABAD DECCAN SF Exp	AJMER JN	AII	439804	12719	17:40:00
52	0	1.0	Akola Purna Passenger	AKOLA JN	AK	331840	57581	06:00:00
53	0	1.0	Coimbatore Mumbai LTT Express	COIMBATORE JN	CBE	127842	11014	08:00:00
54	0	1.0	Lingampalli Falaknuma MMTS	LINGAMPALLI	LPI	329380	47173	06:20:00

In [29]:

```python
df = df.sort_values(["train_number", "day", "arrival"])
```

In [30]:

```
df.head(55)
```

Out[30]:

	arrival	day	train_name	station_name	station_code	id	train_number	departure
2188	0	1.0	Mumbai LTT - Gwalior (Weekly) Special	LOKMANYA TILAK TERM	LTT	373816	01101	15:50:00
6021	15:51:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	VIDYAVIHAR	VVH	373817	01101	15:51:00
9324	15:53:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	GHATKOPAR	GC	373818	01101	15:53:00
10926	15:57:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	VIKHROLI	VK	373819	01101	15:57:00
11990	15:59:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	KANJUR MARG	KJMG	373820	01101	15:59:00
12846	16:01:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	BHANDUP	BND	373821	01101	16:01:00
13799	16:02:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	NAHUR	NHU	373822	01101	16:02:00
15104	16:05:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	MULUND	MLND	373823	01101	16:05:00
15988	16:08:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	THANE	TNA	373824	01101	16:08:00
17216	16:10:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	KALVA	KLVA	373825	01101	16:10:00
17930	16:15:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	MUMBRA	MBQ	373826	01101	16:15:00
18464	16:18:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	DIVA	DIVA	373827	01101	16:18:00
19110	16:22:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	KOPAR ROAD	KOPR	373828	01101	16:22:00

	arrival	day	train_name	station_name	station_code	id	train_number	departure
19572	16:24:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	DOMBIVILI	DI	373829	01101	16:24:00
19895	16:25:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	THAKRULI	THK	373830	01101	16:25:00
35773	16:30:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	KALYAN JN	KYN	373831	01101	16:35:00
37300	16:39:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	SHAHAD	SHAD	373832	01101	16:39:00
39474	16:43:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	AMBIVLI	ABY	373833	01101	16:43:00
41349	16:49:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	TITVALA	TLA	373834	01101	16:49:00
42694	16:59:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	KHADAVLI	KDV	373835	01101	16:59:00
44728	17:09:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	VASIND	VSD	373836	01101	17:09:00
45054	17:16:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	ASANGAON	ASO	373837	01101	17:16:00
46513	17:21:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	ATGAON	ATG	373838	01101	17:21:00
46891	17:44:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	KHARDI	KE	373839	01101	17:44:00
47771	18:01:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	KASARA	KSRA	373840	01101	18:01:00
54558	18:20:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	IGATPURI	IGP	373841	01101	18:40:00
59857	18:57:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	GHOTI	GO	373842	01101	18:57:00

	arrival	day	train_name	station_name	station_code	id	train_number	departure
61769	19:33:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	ASVALI	AV	373843	01101	19:33:00
63622	20:00:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	LAHAVIT	LT	373844	01101	20:00:00
65574	20:16:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	DEVLALI	DVL	373845	01101	20:16:00
75688	20:28:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	NASIK ROAD	NK	373846	01101	20:30:00
81016	20:47:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	ODHA	ODHA	373847	01101	20:47:00
83459	20:57:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	KHERVADI	KW	373848	01101	20:57:00
84514	21:07:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	KASBE-SUKENE	KBSN	373849	01101	21:07:00
86209	21:16:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	NIPHAD	NR	373850	01101	21:16:00
87378	21:26:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	UGAON	UGN	373851	01101	21:26:00
88767	21:40:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	LASALGAON	LS	373852	01101	21:40:00
89507	21:58:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	SUMMIT	SUM	373853	01101	21:58:00
97814	22:15:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	MANMAD JN	MMR	373854	01101	22:30:00
102030	22:34:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	PANEVADI	PNV	373855	01101	22:34:00
104552	22:40:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	HISVAHAL	HSL	373856	01101	22:40:00

	arrival	day	train_name	station_name	station_code	id	train_number	departure
105301	22:43:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	PANJHAN	PJN	373857	01101	22:43:00
106511	22:49:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	NANDGAON	NGN	373858	01101	22:49:00
107683	22:58:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	PIMPAR KHED	PKE	373859	01101	22:58:00
108856	23:05:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	NAYDONGRI	NI	373860	01101	23:05:00
109897	23:13:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	ROHINI	RHNE	373861	01101	23:13:00
110417	23:16:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	HIRAPUR	HPR	373862	01101	23:16:00
110865	23:22:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	CHALISGAON JN	CSN	373863	01101	23:22:00
111671	23:29:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	VAGHLI	VGL	373864	01101	23:29:00
112156	23:37:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	KAJGAON	KJ	373865	01101	23:37:00
112274	23:40:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	NAGARDEVLA	NGD	373866	01101	23:40:00
112761	23:48:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	GALAN	GAA	373867	01101	23:48:00
113076	23:56:00	1.0	Mumbai LTT - Gwalior (Weekly) Special	PACHORA JN	PC	373868	01101	23:56:00
113260	00:06:00	2.0	Mumbai LTT - Gwalior (Weekly) Special	PARDHANDE	PHQ	373869	01101	00:06:00
113577	00:09:00	2.0	Mumbai LTT - Gwalior (Weekly) Special	MAHEJI	MYJ	373870	01101	00:09:00

In [ ]:

In [ ]: