Creating Shape files for Varanasi

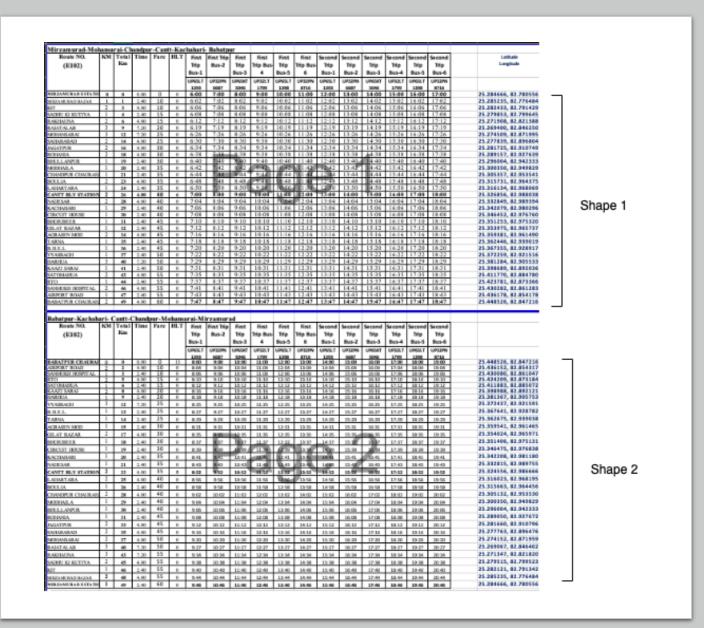
Ammar Bin Zulqarnain

Example Route Sheet

| Month March Marc | A | В | С | D | Е | F | G | н | - 1 | J | K | L | М | N | 0 | Р | Q | R | S | Т |
|--|---------------------|--------|--------|--------|------|--------|--------|--------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|---|----------------------|
| Rotation Californ | | anca | rai_Ch | _ | | t_Kac | | | nr. | | | | | | | | | | | |
| Characteristics | | | | | | | | | | First | First | First | Second | Second | Second | Second | Second | Second | | Latitude |
| No. | | | | | | | | | | | | | | | | | | | | |
| March Part | ` ' / | | | | | | Bus-1 | | Bus-3 | 4 | Bus-5 | 6 | Bus-1 | Bus-2 | Bus-3 | Bus-4 | Bus-5 | Bus-6 | | |
| SIMALAMENDALING 0 | | | | | | | | | | | | | | | | | | | | |
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| MARIANNA 2 4 480 35 0 612 7112 7112 7112 7112 7112 7112 7112 | KIT | _ | _ | | | _ | | | | | | | | | | | | | | 25.282433, 82.791429 |
| SAMPLIANDER 1 1 1 7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | | • | _ | | | _ | | | | | | | | | | | | | | |
| SMIANAMAM 3 II 730 75 0 622 7726 732 926 926 926 126 126 126 1276 126 1276 1276 1276 1 | | _ | | | | | | | | | 10112 | | | | | | | | | |
| MANTENER 2 16 480 30 0 634 734 834 934 094 1034 1340 1234 1234 13 | | 3 | 12 | | 25 | | 6:26 | 7:26 | 8:26 | 9:26 | 10:26 | 11:26 | 12:26 | 13:26 | 14:26 | 15:26 | 16:26 | 17:26 | | |
| MINISTRA 2 18 | | | | | | | | | | | | | | | | | | | | |
| SINCLALARY N. 1 12 2.40 30 C 6.40 870 880 9-40 10-40 11-40 12-40 13-30 840 1-40 12-40 13-40 12-40 13-4 | | | | | | | | | | | | | | | | | | | | |
| GIANAPER CICIALIAN 1 2 2-0 35 0 6-44 7-48 7-44 7-44 1.744 | | | | | | | | | | | | | | | | | | | | |
| SCHILA 2 22 4 40 35 | | • | | | | | | | | | | | | | | | | | | |
| MAINTAINA 1 24 24 26 35 0 0.50 150 150 1500 1500 1750 1750 25.316134, 82.966666 1750 1750 25.316134, 82.966666 1750 1750 1750 25.316134, 82.966666 1750 1750 1750 25.316134, 82.966666 1750 175 | | · | | | | | | | | | | | | | | | | | | |
| CANTELLY STATION 2 2 22 449 40 6 7890 890 900 900 1004 1004 1004 1004 1004 1004 | | | | | | | | | | | | | | | | | | | | |
| KACHIMARI I 29 240 40 0 700 800 906 1006 1105 1206 1306 1406 1506 1606 1706 18:06 23.342079, 82.990296 1005 1105 1105 1206 1406 1506 1508 1608 1706 18:06 23.342079, 82.990296 1005 1105 1105 1206 1406 1508 1408 1508 1408 1508 23.342079, 82.990296 1005 1105 1105 1105 1105 1105 1105 110 | | 2 | | | 40 | _ | 7:00 | 8:00 | | 10:00 | | 12:00 | 13:00 | 14:00 | T5:00 | 16:00 | 17:00 | | | |
| SINCHELLY DIAGNS 1 30 240 45 0 7.08 8.08 9.08 1.08 12.08 13.08 14.08 15.08 16.08 17.08 18.08 23,346452, 82.978760 | | | | | | | | | | | | | | | | | | | | |
| MINISTREER 1 31 240 45 0 7.10 8.10 9.10 10.10 11.10 12.10 13.10 14.10 15.10 16.10 17.10 18.10 23.33123, 82.975327 | | • | | | | | | | | | | | | | | | | | | |
| MARAMIN MOD 3 | | · | | | | | | | | | | | | | | | | | | |
| TARINA | | · | | | | _ | | | ,,,,, | | | | | | | | | | | |
| BILLEL. 1 96 4.09 45 0 720 820 920 10.20 11.20 12.20 13.20 14.20 15.20 10.20 17.20 18.20 25.76735, 87.928917 WYSMAGM 1 37 240 50 0 722 822 922 10.22 11.22 12.22 12.20 12.20 12.20 10.22 10.22 17.20 18.20 WARRIAM 3 40 7.20 50 0 729 829 929 10.29 11.29 11.22 12.20 12.20 12.20 17.20 18.20 WARRIAM 3 40 7.20 50 0 729 829 929 10.29 11.29 11.20 12.20 13.20 14.20 15.20 10.20 17.20 18.20 WARRIAM 3 40 7.20 50 0 729 829 929 10.29 11.29 11.20 12.20 13.20 14.20 15.20 10.20 17.20 18.20 WARRIAM 3 40 7.20 50 0 7.21 8.20 9.20 10.29 11.20 11.20 13.20 14.20 15.20 10.20 17.20 18.20 WARRIAM 3 40 7.20 50 0 7.21 8.20 9.20 10.20 11.20 11.20 13.20 14.20 15.20 16.20 17.20 18.20 WARRIAM 3 40 7.20 50 0 7.21 8.20 9.20 10.20 11.20 11.20 11.20 13.20 14.20 15.20 16.20 17.20 18.20 WARRIAM 4 40 7.20 55 0 7.21 8.20 9.20 10.20 11 | | | | | | | | | | | | | | | | | | | | |
| VANSMACH 1 37 2-40 50 0 7-22 8:22 9:22 10:22 11:29 12:22 13:22 14:22 15:22 16:22 17:22 18:22 25:372259, 82:991516 MARRIER 14 7-20 15:00 0 7-20 8:20 0 7-20 8:20 0 11:29 12:29 | | _ | | | | _ | | | | | | | | | | | | | | |
| RAMINGAMIN 1 4 2.40 55 0 0 7.31 8.31 9.31 10.31 11.31 12.31 13.31 14.31 15.31 16.31 17.31 18.31 25.398689 82.892036 RTO MININGAMIN 2 2 44 4.00 55 0 7.34 8.37 9.37 10.37 11.37 12.37 13.37 14.37 15.37 16.37 17.37 18.37 12.34 25.398689 82.892036 RTO MININGAMIN 1 2 44 4.00 55 0 7.34 8.37 9.37 10.37 11.37 12.37 13.37 14.37 15.37 16.37 17.37 18.37 12.34 25.40828, 22.861238 25.40828 22.861238 22.86 | | 1 | | | | | | | | | | 12:22 | 13:22 | 14:22 | 15:22 | | 17:22 | | | |
| SATOMARIAN 2 44 4.80 55 0 7.375 8.35 9.35 10.35 11.35 12.35 13.35 14.35 15.35 16.35 17.35 18.35 25.411770, 92.884780 RYO 1 44 2.40 55 0 7.371 8.41 9.31 11.35 12.37 13.37 1 | | | | | | | | | | | | | | | | | | | | |
| ROWNER HINSTRAL 2 44 2.40 55 0 7.77 8.77 8.77 8.77 9.77 10.37 11.37 12.37 13.37 14.37 15.37 16.37 17.37 18.37 25.423781, 82.87386 8.8MINGHI HINSTRAL 2 49 480 60 7.47 8.41 9.41 10.43 11.44 12.44 13.44 15.44 16.44 17.44 18.44 25.436178, 82.854178 8.8MINGHI ROWNER HINSTRAL 2 49 480 60 7.47 8.47 9.47 18.47 11.47 11.43 12.44 13.43 15.43 15.43 16.43 17.44 18.43 25.436178, 82.854178 8.8MINGHI ROWNER HINSTRAL 2 49 480 60 7.47 8.47 9.47 18.47 11.47 11.43 12.44 13.44 15.45 16.47 17.47 18.47 12.47 13.47 13.47 13.47 13.47 14.47 12.47 13.47 14.47 13.47 14.47 | | • | | | | | | | | | | | | | | | | | | |
| SAMMARI HOSPITIAL 2 46 480 55 0 7.41 8.41 9.41 10.41 11.41 12.41 13.41 14.41 15.43 16.41 17.41 18.41 25.43 12.42 25.43 18.42 25.43 25. | | _ | | | | _ | | | | | | | | | | | | | | |
| BABATPUR CIAILAN Z | | _ | | | | | | | | 10111 | | | | | | | | | | 25.430282, 82.861283 |
| Bahatpur-Kachahari | | | | | | | | | | | | | | | | | | | | |
| ROBIN COL Col First Fi | BABATPUR CHAURAH | 2 | 49 | 4.80 | 60 | 0 | /:4/ | 0:4/ | 9:47 | 10:47 | 11:4/ | 12:4/ | 13:47 | 14:4/ | 15:47 | 10:47 | 1/:4/ | 10:4/ | | 25.448526, 82.847216 |
| ROBIN COL Col First Fi | Rahatnur_Kachaha | ari_ (| antt_(| ^handr | ur-M | ahanes | roi_Mi | rzamur | ad | | | | | | | | | | | |
| Trip | | | | | | | | | | First | First | First | Second | Second | Second | Second | Second | Second | | |
| BABATPUR CHAIRAN 0 0 0,00 0 13 8.00 9.00 10.00 11.00 12.00 13.00 14.00 15.00 15.00 17.00 18.00 19.00 25.448526, 82.847216 AIRPORT ROAD 2 2 4.80 10 0 8.06 9.06 10.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 25.448526, 82.847216 AIRPORT ROAD 2 2 4.80 10 0 8.06 9.06 10.06 11.06 12.06 13.06 14.00 15.00 16.00 17.00 18.00 19.00 25.436152, 82.854317 3.854814 | (E102) | | Km | | | | | | | | | | | | Trip | | | Trip | | |
| BABATFUR CHAURAI () 0 0,000 | ` ′ | | | | | | Bus-1 | | Bus-3 | 4 | Bus-5 | 6 | Bus-1 | Bus-2 | Bus-3 | Bus-4 | Bus-5 | Bus-6 | | |
| BABATPUR CHAITARI 0 0 0 0.00 0 13 8.00 9.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 25.448526, 82.847216 AIRPORT ROAD 2 2 4.80 10 0 8.04 9.04 10.04 11.04 12.04 13.04 16.04 15.04 16.04 17.04 18.04 19.04 19.04 25.436515, 82.854317 ANNURAH HOSPITAL 1 3 2.40 10 0 8.06 9.06 10.06 11.06 11.06 11.06 12.06 13.06 17.06 18.06 17.06 18.06 19.06 25.43080, 82.861047 ANNURAH HOSPITAL 1 9 2.40 10 0 8.16 91.0 10.10 11.10 12.10 13.10 14.10 15.10 16.10 17.10 18.10 19.10 25.444249, 82.873184 ANTOMARILA 1 1 9 2.40 10 0 8.16 91.2 10.12 11.11 16.12 13.12 14.12 15.12 16.12 17.12 18.12 19.12 18.12 19.12 18.12 19.12 | | | | | | | UP65LT | | | | | | | | | | | | | |
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| RTO ALTHOUGH 1 6 2.48 15 0 8:10 9:10 10:10 11:10 12:10 13:10 14:10 15:10 16:10 17:10 18:10 19:10 25.442409, 82.873184 SATOMAHUA 1 6 6 2.40 15 0 8:12 9:12 10:12 10:12 10:12 10:12 15 | AIRPORT ROAD | 2 | 2 | 4.80 | | 0 | 8:04 | 9:04 | 10:04 | 11:04 | 12:04 | 13:04 | 14:04 | 15:04 | 16:04 | 17:04 | 18:04 | 19:04 | | 25.436152, 82.854317 |
| SATOMAHUA 1 6 2.40 15 0 8:12 9:12 10:12 11:12 12:12 13:12 14:12 15:12 16:12 17:12 13:12 19:12 25.541883, 82.885072 KAAZI SARAI 2 8 4.80 20 0 8:16 9:16 10:16 11:16 12:16 13:16 14:16 15:16 15:16 16:16 17:16 18:16 19:16 15:18 19:18 25.539888, 82.89272 KAAZI SARAI 2 8 4.80 20 0 8:16 9:16 10:18 11:18 12:18 13:18 14:18 15:18 16:18 17:18 18:18 19:18 25.539888, 82.89272 KAAZI SARAI 2 1 9 2.40 20 0 8:25 9:25 10:25 11:25 12:25 13:25 14:25 15:25 18:2 | | 1 | | | | | | | | | | | | | | | | | | 25.430080, 82.861047 |
| HARHIA 1 9 2.40 20 0 8:18 9:18 10:18 11:18 12:18 13:18 14:18 15:18 15:18 17:18 18:18 19:18 25.381367, 82.905753 B.H.E.L. 1 13 2.40 25 0 8:25 9:25 10:25 11:25 12:27 13:27 14:27 15:27 16:27 17:27 18:27 19:27 25.367641, 82.928782 TARNA 1 14 2.40 25 0 8:29 9:29 10:29 11:29 12:29 13:29 14:29 15:29 16:29 17:29 18:29 19:29 25.367641, 82.928782 TARNA 1 14 2.40 25 0 8:29 9:29 10:29 11:29 12:29 13:29 16:29 15:29 16:29 17:29 18:29 19:29 25.366675, 82.999038 AGRASEN MOD 1 15 2.40 30 0 8:31 9:31 10:31 11:31 12:31 13:31 14:31 15:31 16:31 17:31 18:31 19:31 25.359541, 82.965971 BIDULUBEER 1 18 2.40 30 0 8:37 9:37 10:37 11:37 12:37 13:37 14:37 15:37 16:37 17:37 18:37 19:37 25.354024, 82.965971 BIDULUBER 1 19 2.40 30 0 8:39 9:39 10:39 11:39 31 13:31 14:31 15:41 20 2.40 35 0 8:41 9:41 10:41 10:41 11:41 12:41 13:41 15:41 20 2.40 35 0 8:41 9:41 10:41 10:41 11:41 12:41 13:41 15:41 20 2.40 35 0 8:41 9:41 10:41 10:41 11:41 12:41 13:41 15:41 15:41 15:41 18:41 19:41 20 2.40 35 0 8:43 39:43 10:43 11:43 12:41 13:41 15:41 | SATOMAHUA | ĩ | 6 | 2.40 | 15 | 0 | 8:12 | 9:12 | 10:12 | 11:12 | 12:12 | 13:12 | 14:12 | 15:12 | 16:12 | 17:12 | 18:12 | 19:12 | | 25.411883, 82.885072 |
| VYASBACH 3 12 7.20 25 0 8:25 9:25 10:25 11:25 12:25 13:25 14:25 15:25 16:25 17:25 18:25 19:25 25:372437, 82.921591 B.H.E. | | - 4 | | | | | | | | | | | | | | | | | | |
| B.H.E.L. 1 13 2.40 25 0 8:27 9:27 10:27 11:27 12:27 13:27 14:27 15:27 16:27 17:27 18:27 19:27 25.367641, 82.928782 17.00 1 14 2.40 25 0 8:29 9:29 10:29 10:29 11:29 12:29 13:29 14:29 15:29 16:29 17:29 18:29 19:29 25.362675, 82.939038 AGRASEN MOD 1 15 2.40 30 0 8:31 9:31 10:31 11:31 11:31 13:31 13:31 17:31 18:31 19:31 25.359541, 82.961465 GILAT BAZAR 2 17 4.80 30 0 8:35 9:35 10:35 10:35 11:35 12:35 13:35 14:35 15:35 16:35 17:35 18:35 19:35 25.3594024, 82.961465 GILAT BAZAR 2 17 4.80 30 0 8:37 9:37 10:37 10:37 11:37 12:37 13:37 14:37 15:37 16:37 17:37 18:37 19:37 25.351406, 82.975131 CIRCUIT HOUSE 1 19 2.40 30 0 8:39 9:39 10:39 11:39 12:39 13:36 14:35 15:39 15:39 15:39 19:39 12:34 18:34 19:41 10:41 12:41 13:41 13:41 15:41 16:41 19 | | | _ | | | _ | | | | | | | | | | | | | | |
| AGRASEN MOD 1 1 15 2.40 30 0 8:31 9:31 10:31 11:31 12:31 13:31 14:31 15:31 16:31 17:31 18:31 19:31 25:359541, 82.961465 GILAT BAZAR 2 17 4.80 30 0 8:35 9:35 40:35 11:35 11:35 12:35 13:35 14:35 15:35 16:35 17:35 18:35 19:35 25:354024, 82.965671 18:6100000000000000000000000000000000000 | | 1 | | | 25 | _ | | | | | | | | | | | | | | |
| GILAT BAZAR 2 17 4.80 30 0 8.35 9.35 10.35 11.35 12.35 13.35 14.35 15.35 16.35 17.35 18.35 19.35 25.354024, 82.965971 18HOULBEER 1 18 2.40 30 0 8.39 9.39 10.39 11.39 12 | TARNA | • | 14 | 2.40 | | 0 | 8:29 | 9:29 | 10:29 | 11:29 | 12:29 | 13:29 | 14:29 | 15:29 | 16:29 | 17:29 | 18:29 | 19:29 | | |
| BHOUBER 1 1 18 2.40 30 0 8:37 5:37 10:37 11:37 12:37 13:37 14:37 15:37 16:37 17:37 18:37 19:37 25:351406, 82.975131 21:37 17:37 18:37 19:37 25:351406, 82.975131 21:37 17:37 18:37 19:37 25:351406, 82.975131 21:37 17:37 18:37 19:37 25:351406, 82.975131 21:37 19:37 19:37 25:351406, 82.975131 21:37 19:37 19:37 25:351406, 82.975131 21:37 19:37 19:37 25:351406, 82.975131 21:37 19:37 19:37 25:351406, 82.975131 21:37 19:37 19:37 25:351406, 82.975131 21:37 19:37 19:37 25:351406, 82.975131 21:37 19:37 19:37 25:346475, 82.97638 | AGRASEN MOD | | | | | _ | 8:31 | 9:31 | | | | | | | | | | | | |
| CIRCUIT HOUSE | | | | | | | | | | | | | | ۱ | | | | | | |
| KACHAHARI 1 20 2.40 35 0 8.41 9.41 10.41 11.41 12.41 13.41 15.41 16.41 17.41 18.41 19.41 25.342208, 82.981180 NADESAR 1 21 2.40 35 0 8.43 9.43 10.43 11.43 12.43 13.42 16.43 15.44 16.43 17.43 18.43 19.43 25.332815, 82.98755 CANTT RLY STATION 2 2 33 4.80 35 5 8.52 9.52 10.52 11.52 11.52 12.52 12.52 13.52 14.52 15.52 17.52 18.52 19.52 19.52 25.342556, 82.986765 LAHARTARA 2 2 25 4.80 40 0 8.56 9.56 10.56 11.56 12.56 13.56 14.56 15.56 16.56 17.56 18.56 19.56 25.316023, 82.986195 BOULLA 1 26 2.40 40 0 8.58 9.58 10.58 11.58 12.58 13.58 14.58 14.58 15.58 16.58 17.58 18.58 19.58 25.31563, 82.986456 CHANDPUR CHAURAH 2 28 4.80 40 0 9.02 10.02 11.02 12.02 13.02 14.02 15.02 16.02 17.02 18.02 19.02 20.02 DHULLANPUR 1 30 2.40 40 0 9.04 10.04 11.04 12.04 13.04 14.04 15.04 16.04 17.04 18.04 19.04 20.04 25.300350, 82.949829 BHULLANPUR 1 30 2.40 40 0 9.06 10.06 11.06 12.06 13.06 14.06 15.06 16.06 17.06 18.06 19.06 20.06 25.296004, 82.942333 ROHANIA 1 31 2.40 45 0 9.08 10.08 11.08 11.08 12.08 13.08 14.08 15.08 16.08 17.08 18.08 19.08 20.08 25.289050, 82.927672 BAHABABAD 2 35 4.80 45 0 9.12 10.12 10.12 11.12 12.12 13.12 14.12 15.12 16.12 17.12 18.12 19.12 20.12 25.281600, 82.927672 BAHABABAD 2 37 4.80 50 9.12 10.12 10.12 11.12 12.12 13.12 14.12 15.12 16.12 17.12 18.12 19.12 20.12 25.281600, 82.927672 BAHABABAD 3 43 7.20 55 0 9.20 10.20 11.20 12.20 13.20 14.20 15.20 16.20 17.20 18.20 19.20 20.00 25.277163, 82.896476 MOHANNARAH 2 37 4.80 55 0 9.44 10.44 11.34 12.34 13.34 14.34 15.34 16.34 17.34 18.34 19.34 20.34 25.271347, 82.821820 BAJATALAB 3 40 7.20 55 0 9.44 10.34 11.34 12.34 13.34 14.34 15.34 16.34 17.34 18.34 19.34 20.34 25.271347, 82.821820 BAJAHALAB 3 4.80 55 0 9.40 10.40 11.40 12.40 13.40 13.40 14.40 15.40 16.40 17.40 18.40 19.40 20.40 25.282153, 82.779582 BALLLABRURA 2 2 48 4.80 55 0 9.44 10.44 11.44 12.34 13.44 15.34 15.34 16.34 17.34 18.34 19.34 20.34 25.271347, 82.821820 | | | | | | - | | | | | | | | | | | | | | |
| NADESAR 1 21 2.40 35 0 8.43 9.43 10.43 11.43 12.43 13.43 14.48 15.45 16.43 17.43 18.43 19.43 25.332815, 82.989755 CANTT RLY STATION 2 23 4.80 35 5 8.52 9.52 10.52 11.52 11.52 13.52 14.52 15.52 16.52 17.52 18.52 19.52 25.324556, 82.986495 BOULIA 1 26 2.40 40 0 8.56 9.56 10.56 11.56 11.56 12.56 14.56 15.56 16.56 17.56 18.56 19.56 19.56 CALABRARA 2 2 28 4.80 40 0 9.02 10.02 11.02 12.02 13.02 14.02 15.02 16.02 17.02 18.02 19.02 20.02 25.315638, 82.968495 BOULIA 1 2 2 2.40 40 0 9.04 10.04 11.04 12.04 13.04 14.04 15.06 17.06 18.06 19.06 20.06 25.305132, 82.953530 MODHAILA 1 2 9 2.40 40 0 9.06 10.06 11.06 12.06 13.06 14.06 15.06 15.06 16.08 17.06 18.06 19.06 20.06 25.300350, 82.94829 BHULLANPUR 1 30 2.40 40 0 9.06 10.06 11.06 12.06 13.06 14.06 15.06 15.06 16.08 17.08 18.08 19.08 20.08 25.296004, 82.942333 ROHANIA 1 31 2.40 45 0 9.08 10.08 11.08 12.08 13.08 14.08 15.08 15.08 16.08 17.08 18.08 19.08 20.08 25.289050, 82.927672 34.80 45 0 9.16 10.16 11.16 12.16 13.16 12.16 13.16 14.12 15.12 16.12 17.12 18.12 19.12 20.12 25.281600, 82.9107672 SAHABABAD 2 35 4.80 45 0 9.16 10.16 11.16 12.16 13.16 14.16 15.16 16.16 17.16 18.16 19.16 20.16 25.277763, 82.896476 MOHANARAI 2 37 4.80 50 0 9.20 10.20 11.20 12.20 13.20 14.20 15.20 15.20 15.20 16.20 17.20 18.20 19.20 20.02 25.271478, 82.896476 MOHANARAI 2 37 4.80 50 0 9.20 10.20 11.20 12.20 13.20 14.20 15.20 15.20 16.20 17.20 18.20 19.20 20.20 25.271452, 82.8718592 RAJATALAB 3 40 7.20 50 0 9.27 10.27 10.27 11.27 12.27 13.27 14.27 15.27 16.27 17.27 18.27 19.27 12.27 12.52.69607, 82.896476 MOHANARAI 2 45 48 48.0 55 0 9.34 10.34 11.34 12.34 13.34 13.34 15.34 15.34 19.34 19.34 20.34 25.271347, 82.821820 MARAMURAD BAZAR 2 48 48.0 55 0 9.44 10.44 11.44 12.44 13.44 15.44 | | _ | | | | _ | | | | | | | | | | | | | | |
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| BOULIA 1 26 2.40 40 0 8:58 9:58 10:58 12:58 13:58 14:58 15:58 16:58 17:58 18:58 19:58 25.315663, 82.964456 CHANDPUR CHAURAH 2 28 4.80 40 0 9:02 10:02 11:02 12:02 13:02 14:02 15:02 16:02 17:02 18:02 19:02 20:02 25.305132, 82.958350 MODHAILA 1 29 2.40 40 0 9:04 10:04 11:04 12:04 13:04 14:04 15:04 16:04 17:04 18:04 19:04 20:04 25.300350, 82.94829 BHULLANPUR 1 30 2.40 40 0 9:06 10:06 11:06 12:06 13:06 14:06 15:06 16:06 17:06 18:06 19:06 20:06 25.296004, 82.942333 ROHANIA 1 31 2.40 45 0 9:08 10:08 11:08 12:08 13:08 14:08 15:08 16:08 17:08 18:08 19:08 20:08 25.289050, 82.927672 AGAINABABAD 2 33 4.80 45 0 9:16 10:16 11:16 12:16 13:16 14:16 15:16 16:16 17:16 18:16 19:12 20:12 25.281660, 82.910796 AGAINABABAD 2 35 4.80 45 0 9:16 10:16 11:16 12:16 13:16 14:16 15:16 16:16 17:16 18:16 19:16 20:16 25.277763, 82.896476 MOHANSARAI 2 37 4.80 50 0 9:20 10:20 11:20 12:20 13:20 14:20 15:20 16:20 17:20 18:20 19:20 20:02 25.274152, 82.871959 AGAINABABAD 3 43 7.20 55 0 9:34 10:34 11:34 12:34 13:34 14:34 15:34 16:34 17:34 18:34 19:34 20:34 25.271347, 82.821820 AGAINABABAD 3 43 7.20 55 0 9:34 10:34 11:34 12:34 13:34 14:34 15:34 16:38 17:38 18:38 19:38 20:38 25.275515, 82.799523 AGAINGADHURI 1 1 46 2.40 55 0 9:44 10:44 11:44 12:44 15:44 15:44 15:44 15:44 18:44 19:44 20:44 20:44 25.28215, 82.776484 AMEZAMURAD BAZAR 2 48 8.80 55 0 9:44 10:44 11:44 11:44 13:44 15:44 15:44 16:44 17:44 18:44 19:44 20:44 20:44 25.28215, 82.776484 | CANTT RLY STATION | 2 | | | 35 | | 8:52 | | | | | | | | | | | | | 25.324556, 82.986666 |
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Creating a DataFrame with Shapes

- Each table for each route sheet has its own shape from starting stop to last stop.
- The shape is not complete because we don't have linestring of geographical coordinates between two consecutive stops for each table
- Hence, I used MapBox Direction API to generate these coordinates



Shapes.txt features

- Features:
 - shape_id: shape of the route
 - shape_pt_lat: Latitude of a point visited in the trip
 - shape_pt_lon: longitude of a point visited in the trip
 - shape_pt_sequence: Sequence number of the point in the shape

shapes=pd.DataFrame(columns=['shape_id','shape_pt_lat','shape_pt_lon','shape_pt_sequence'])

Overall Code

- Iterates over all route sheets and then creates temporary shape data frames for each subtables
- Each temporary shape data frames is appended into main shapes data frame

```
shapes=pd.DataFrame(columns=['shape_id','shape_pt_lat','shape_pt_lon','shape_pt_sequence'])
v for route in dfSuperSet.keys():
         c=pd.DataFrame(dfSuperSet[route]).iloc[:-1].dropna(axis=1,how='all')
         c=c.rename(columns={c.columns[0]:'stop_name'})
         index_list=c[c.isnull().all(axis=1)].index
         if route=='Mirzamurad-Chubpur-MARKAND 106':
         for i in range(len(index_list)):
                 temp['next_stop_coord']=temp[latlon].shift(-1)
                 temp=temp['next_stop_coord'].notnull()]
                 shape_point_sequence=0
                 temp_shapes=pd.DataFrame(columns=['shape_id','shape_pt_lat','shape_pt_lon','shape_pt_sequence'])
                 for k,v in temp.iterrows():
                        stop_coord = [float(n) for n in v[latlon].split(",")]
                         next stop coord=[float(n) for n in v['next stop coord'].split(",")]
                         shape_list_of_geometry = shape(stop_coord, next_stop_coord)
                         temp_shapes=temp_shapes.append({'shape_pt_lat':shape_list_of_geometry}, ignore_index=True)
                 temp shapes[['shape pt lon', 'shape pt lat']]=pd.DataFrame(temp shapes['shape pt lat'].tolist(), index= temp shapes.index)
                 temp_shapes['shape_id']=shape_id
                 shapes=shapes.append(temp_shapes).reset_index(drop=True)
             elif c.iloc[index list[i-1]+1:index list[i]].empty:
                 temp=c.iloc[index_list[i-1]+4:index_list[i]].reset_index(drop=True)
                 temp['next_stop_coord']=temp[latlon].shift(-1)
                 temp['next_stop']=temp['stop_name'].shift(-1)
                 temp=temp[temp['next_stop_coord'].notnull()]
                  temp_shapes=pd.DataFrame(columns=['shape_id','shape_pt_lat','shape_pt_lon','shape_pt_sequence'])
                        stop_coord = [float(n) for n in v[latlon].split(",")]
                         next stop_coord=[float(n) for n in v['next stop_coord'].split(",")]
                         shape_list_of_geometry = shape(stop_coord, next_stop_coord)
                         temp_shapes=temp_shapes.append({'shape_pt_lat':shape_list_of_geometry}, ignore_index=True)
                 temp shapes=temp shapes.explode('shape pt lat').reset index(drop=True)
                 temp_shapes[['shape_pt_lon','shape_pt_lat']]=pd.DataFrame(temp_shapes['shape_pt_lat'].tolist(), index= temp_shapes.index)
                  temp_shapes['shape_pt_sequence']=temp_shapes.index
                 shapes=shapes.append(temp_shapes).reset_index(drop=True)
```

Code Snippets for creating a Data Frame with Shapes

- This code snippet converts an excel sheet containing information of one route into a pandas data frame. index_list stores indices where the rows are null (separating two subtables)
- DfSuperSet stores all excel sheets of all routes

```
c=pd.DataFrame(dfSuperSet[route]).iloc[:-1].dropna(axis=1,how='all')
c=c.rename(columns={c.columns[0]:'stop name'})
#gets the column name for coordinates
latlon=[col for col in c.columns if 'Latitude' in col][0]
#Keeps track of null rows between subtables
index_list=c[c.isnull().all(axis=1)].index
if route=='Mirzamurad-Chubpur-MARKAND 106':
    index list=index list[:3]
```

Code Snippets for creating a Data Frame with Shapes

• This function takes the coordinates of two consecutive stops of a shape and generates a list of geographical coordinates it will visit in between the two stops

Code Snippets for creating a Data Frame with Shapes

 This code snippet iterates through each table and call shape function for each consecutive stops. It then stores all the geographical coordinates between stops as rows and append it to main shapes data frame

```
#creates a temporary table for one shape
temp_shapes=pd.DataFrame(columns=['shape_id','shape_pt_lat','shape_pt_lon','shape_pt_sequence'])
#iterates through all stops visited in one shape and provides list of points between them
for k,v in temp.iterrows():
    #Get coordinates for the origin and destination stops
       stop coord = [float(n) for n in v[latlon].split(",")]
       next_stop_coord=[float(n) for n in v['next_stop_coord'].split(",")]
       shape_list_of_geometry = shape(stop_coord, next_stop_coord)
       temp_shapes=temp_shapes.append({'shape_pt_lat':shape_list_of_geometry}, ignore_index=True)
#create rows for each geographical coordinate visited between stops
temp_shapes=temp_shapes.explode('shape_pt_lat').reset_index(drop=True)
temp_shapes[['shape_pt_lon','shape_pt_lat']]=pd.DataFrame(temp_shapes['shape_pt_lat'].tolist(), index= temp_shapes.index)
temp_shapes['shape_id']=shape_id
temp_shapes['shape_pt_sequence']=temp_shapes.index
#appends this table into main shape table
shapes=shapes.append(temp_shapes).reset_index(drop=True)
shape_id+=1
```

Shapes Data Frame

| | shape_id | shape_pt_lat | shape_pt_lon | shape_pt_sequence |
|---------|--------------|--------------|--------------|-------------------|
| 0 | 0 | 25.284410 | 82.780492 | 0 |
| 1 | 0 | 25.282874 | 82.788947 | 1 |
| 2 | 0 | 25.281990 | 82.792961 | 2 |
| 3 | 0 | 25.283655 | 82.793669 | 3 |
| 4 | 0 | 25.283546 | 82.794604 | 4 |
| | | | | |
| 8272 | 32 | 25.285850 | 82.776031 | 529 |
| 8273 | 32 | 25.285274 | 82.775819 | 530 |
| 8274 | 32 | 25.285149 | 82.776464 | 531 |
| 8275 | 32 | 25.285149 | 82.776464 | 532 |
| 8276 | 32 | 25.284410 | 82.780492 | 533 |
| 3277 ro | ws × 4 colum | nns | | |