Data Understanding

# EU Flights Data

Source: EUROCONTROL Flights/\*/\*.csv  
Columns: 13  
Rows: 2 525 859

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Attribute Name | Data Type | Range | Null | Unique | Diff | Use | Example |
| ECTRL ID | int64 | [197151726;208555384] | 0 | 2525859 | 0 | Unique ID of flight | 197151726 |
| ADEP | string | char (4-4) | 0 | 1751 | 2524108 |  | EDDP |
| ADES | string | char (4-4) | 0 | 1739 | 2524120 |  | LIME |
| FILED OFF BLOCK TIME | datetime | [2016-01-06 00:00:00;  2017-12-06 23:59:00] | 0 | 107999 | 2417860 |  | 01-06-2016 00:00:00 |
| FILED ARRIVAL TIME | datetime | [2016-01-06 00:50:07;  2017-12-06 23:59:48] | 0 | 2089353 | 436506 |  | 01-06-2016 01:17:17 |
| ACTUAL OFF BLOCK TIME | datetime | [2016-01-06 00:00:00;  2017-12-06 23:59:00] | 0 | 361470 | 2164389 |  | 01-06-2016 00:03:00 |
| ACTUAL ARRIVAL TIME | datetime | [2016-01-06 00:54:23;  2017-12-06 23:59:54] | 0 | 2012049 | 513810 |  | 01-06-2016 01:19:15 |
| AC Type | string | char (2-4) | 0 | 265 | 2525594 |  | A306 |
| AC Operator | string | char (3-3) | 0 | 783 | 2525076 |  | BCS |
| AC Registration | string | char (2.0-9.0) | 20025 | 14210 | 2491624 |  | EIOZL |
| ICA0 Flight Type | string | char (1-1) | 0 | 2 | 2525857 |  | S |
| STATFOR Market Segment | string | char (7-21) | 0 | 5 | 2525854 |  | All-Cargo |
| Requested FL | float64 | [0.0;570.0] | 582 | 105 | 2525172 |  | 330.0 |

# NA Flights Data

Source: US\_Domestic\_Flichts/\*/\*.csv  
Columns: 29  
Rows: 11 292 279

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Attribute Name | Data Type | Range | Null | Unique | Diff | Use | Example |
| FL\_DATE | string | char (10-10) | 0 | 731 | 11291548 |  | 2016-01-01 |
| OP\_UNIQUE\_CARRIER | string | char (2-2) | 0 | 12 | 11292267 |  | WN |
| TAIL\_NUM | string | char (5.0-6.0) | 25403 | 5345 | 11261531 |  | N7728D |
| OP\_CARRIER\_FL\_NUM | int64 | [1;8402] | 0 | 7078 | 11285201 |  | 1596 |
| ORIGIN | string | char (3-3) | 0 | 325 | 11291954 |  | ABQ |
| DEST | string | char (3-3) | 0 | 322 | 11291957 |  | BWI |
| CRS\_DEP\_TIME | int64 | [1;2359] | 0 | 1378 | 11290901 |  | 1440 |
| DEP\_TIME | float64 | [1.0;2400.0] | 143764 | 1441 | 11147074 |  | 1505.0 |
| DEP\_DELAY | float64 | [-234.0;2755.0] | 143799 | 1556 | 11146924 |  | 25.0 |
| TAXI\_OUT | float64 | [0.0;186.0] | 147563 | 184 | 11144532 |  | 7.0 |
| WHEELS\_OFF | float64 | [1.0;2400.0] | 147559 | 1441 | 11143279 |  | 1512.0 |
| WHEELS\_ON | float64 | [1.0;2400.0] | 152518 | 1441 | 11138320 |  | 2014.0 |
| TAXI\_IN | float64 | [0.0;414.0] | 152518 | 270 | 11139491 |  | 4.0 |
| CRS\_ARR\_TIME | int64 | [1;2400] | 0 | 1440 | 11290839 |  | 2015 |
| ARR\_TIME | float64 | [1.0;2400.0] | 152518 | 1441 | 11138320 |  | 2018.0 |
| ARR\_DELAY | float64 | [-238.0;2189.0] | 174724 | 1579 | 11115976 |  | 3.0 |
| CANCELLED | float64 | [0.0;1.0] | 0 | 2 | 11292277 | 0 or 1 based on cancellation status | 0.0 |
| CANCELLATION\_CODE | string | char (1.0-1.0) | 11143725 | 5 | 148549 | Reason for cancellation |  |
| DIVERTED | float64 | [0.0;1.0] | 0 | 2 | 11292277 | 0 or 1 based on divertion status | 0.0 |
| CRS\_ELAPSED\_TIME | float64 | [1.0;718.0] | 13 | 618 | 11291648 |  | 215.0 |
| ACTUAL\_ELAPSED\_TIME | float64 | [14.0;784.0] | 174724 | 729 | 11116826 |  | 193.0 |
| AIR\_TIME | float64 | [4.0;723.0] | 174724 | 704 | 11116851 |  | 182.0 |
| DISTANCE | float64 | [25.0;4983.0] | 0 | 1464 | 11290815 |  | 1670.0 |
| CARRIER\_DELAY | float64 | [0.0;2142.0] | 9298567 | 1401 | 1992311 |  |  |
| WEATHER\_DELAY | float64 | [0.0;1934.0] | 9298567 | 929 | 1992783 |  |  |
| NAS\_DELAY | float64 | [0.0;1605.0] | 9298567 | 889 | 1992823 |  |  |
| SECURITY\_DELAY | float64 | [0.0;827.0] | 9298567 | 229 | 1993483 |  |  |
| LATE\_AIRCRAFT\_DELAY | float64 | [0.0;1756.0] | 9298567 | 965 | 1992747 |  |  |

# Airports Data

Source: airports.csv  
Columns: 18  
Rows: 55485

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Attribute Name | Data Type | Range | Null | Unique | Diff | Use | Example |
| id | int64 | [2;332461] | 0 | 55485 | 0 | No Use | 4307 |
| ident | string | char (2-7) | 0 | 55485 | 0 | Airport ID | LIAP |
| type | string | char (6-14) | 0 | 7 | 55478 | Size class | small\_airport |
| name | string | char (3-80) | 0 | 52541 | 2944 | Name of port | L'Aquila–Preturo Airport |
| latitude\_deg | float64 | [-90.0; 82.75] | 0 | 53410 | 2075 | Latitude of port | 42.379902 |
| longitude\_deg | float64 | [-179.876998901;179.9757] | 0 | 53829 | 1656 | Longitude of port | 13.309200 |
| elevation\_ft | float64 | [-1266.0;22000.0] | 7027 | 5483 | 42975 | Sealevel in feet | 2211.0 |
| continent | string | char (2.0-2.0) | 27879 | 7 | 27599 | continent of airport | EU |
| iso\_country | string | char (2.0-2.0) | 247 | 243 | 54995 | country in iso code | IT |
| iso\_region | string | char (4-7) | 0 | 2803 | 52682 | region in iso code | IT-65 |
| municipality | string | char (2.0-60.0) | 5730 | 27258 | 22497 | Statutarstadt Name | L'Aquila |
| scheduled\_service | string | char (2-3) | 0 | 2 | 55483 | Zeitplandienst ja oder nein | no |
| gps\_code | string | char (3.0-4.0) | 14367 | 40833 | 285 | Navigation code | LIAP |
| iata\_code | string | char (1.0-3.0) | 46291 | 9074 | 120 | International Air Transport Association Code | QAQ |
| local\_code | string | char (1.0-7.0) | 26509 | 27699 | 1277 | - | AQ03 |
| home\_link | string | char (13.0-128.0) | 52473 | 2998 | 14 | Airport website | http://www.aeroportodeiparchi.it/ |
| wikipedia\_link | string | char (33.0-128.0) | 45576 | 9827 | 82 | encyclopedia link | http://en.wikipedia.org/wiki/L%27Aquila%E2%80%... |
| keywords | string | char (2.0-256.0) | 45940 | 9295 | 250 | - | Parchi Airport, Preturo Airport, Aeroporto dei... |