

FIRST



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This is a simple math puzzle with the twist of using the airplanes' designation as a hex input to the next set of calculations. The puzzle works because conveniently all of the planes' designations can be represented as hexadecimal numbers.

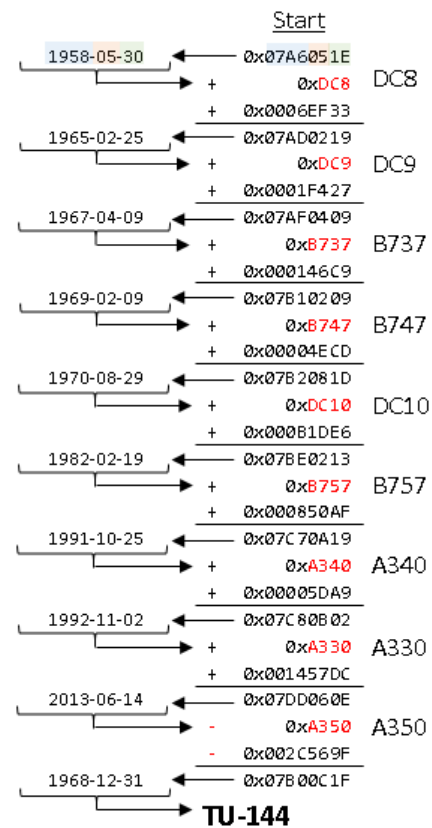
Step one is to convert the date's human readable YYYY-MM-DD format to hex 0xYYYYMMDD format. This is given by example of the first date:

1958-05-30 -> 0x07A6051E
 (1958 is 07A6 in hex, 05 is 05 in hex, 30 is 1E in hex)

Next, you'll need to find which plane was flown first on that date. This is hinted by the flavor text and an example is given in the first calculation.

Using the designation in hex as an input to the next set of equations, the process repeats until the last calculation. Up to this point, all of the dates are in ascending date order. The last one, however, is a subtraction operation which means there will be a bit of time travel.

Designation	Date	Plane
DC8	30-May-1958	Douglas DC-8
DC9	25-Feb-1965	Douglas DC-9
B737	9-Apr-1967	Boeing 737
B747	9-Feb-1969	Boeing 747
DC10	29-Aug-1970	Douglas DC-10
B757	19-Feb-1982	Boeing 757
A340	25-Oct-1991	Airbus A340
A330	2-Nov-1992	Airbus A330
A350	14-Jun-2013	Airbus A350



The last date, December 31, 1968, was the first flight of the **TUPOLEV TU-144** (or **TU144** or its NATO name **Charger**), which is the answer as it was the first commercial *supersonic* jet (ahead of the much more famous Concorde!), and similar to the advent of the DH106 the speed increase of supersonic jets over their subsonic predecessors represented a huge leap forward.