# System Overview

The customer wants a system to calculate how many stops each star ship of Star Wars need to cover a given distance in MGLT\*

From documentation - https://swapi.co/documentation

* MGLT string -- The Maximum number of Megalights this starship can travel in a standard hour. A "Megalight" is a standard unit of distance and has never been defined before within the Star Wars universe. This figure is only really useful for measuring the difference in speed of starships. We can assume it is similar to AU, the distance between our Sun (Sol) and Earth.

MGLT from web - http://starwars.wikia.com/wiki/Megalight\_per\_hour

The megalight per hour (abbreviated MGLT) was a unit used to measure the relative sublight speed of [starships](http://starwars.wikia.com/wiki/Starship)in [realspace](http://starwars.wikia.com/wiki/Realspace). For example, the [RZ-1 A-wing interceptor](http://starwars.wikia.com/wiki/RZ-1_A-wing_interceptor) was markedly faster (120 MGLT) than the [BTL-A4 Y-wing assault starfighter/bomber](http://starwars.wikia.com/wiki/BTL-A4_Y-wing_assault_starfighter/bomber) (70 MGLT).[[1]](http://starwars.wikia.com/wiki/Megalight_per_hour#cite_note-Graphics-0)

From documentation - https://swapi.co/documentation

* consumables \*string  
  The maximum length of time that this starship can provide consumables for its entire crew without having to resupply.

Your source of information was given by your customer Kneat Software is this API, which have information about SW starships.

To generate the desired output we need to use only one endpoint

<https://swapi.co/api/starships/>

this end point dont give all ships at once, we need to call page a page until we receive a result like that:

{  
 "detail": "Not found"  
}

Knowing about MGLT/hour we can do the math, using examples given and the data returned by the API we can predict that:

Distance desired: 1.000.000 MGLT

**Y-Wing**

MGLT/h=80

Consumables= 1 week (7 days)

To do 1000000 MGLT =

The formula will be:

Desired\_Distance / MGLT\_Per\_Hour = Total hours needed

1000000/80= 12500

Knowing the total hours needed, now we need to convert the consumables in hours to easily do the math.

7 days \* 24 hours = 168.

12500/168 = 74,40 stops, but we need only the integer part so will be 74 stops.

**Millenium Falcon**

1000000/75/(60\*24)= 9,25 (9)

**Rebel Transport**

1000000/20(180\*24)= 11,57 (11)

**Data collected from https://swapi.co/api/starships**

//Some data has been omitted for reading reasons.

{

"name": "Y-wing",

"model": "BTL Y-wing",

"manufacturer": "Koensayr Manufacturing",

...

"consumables": "1 week",

"hyperdrive\_rating": "1.0",

"MGLT": "80",

...

},

{

"name": "Millennium Falcon",

"model": "YT-1300 light freighter",

"manufacturer": "Corellian Engineering Corporation",

...

"consumables": "2 months",

"hyperdrive\_rating": "0.5",

"MGLT": "75",

...

},

{

"name": "Rebel transport",

"model": "GR-75 medium transport",

"manufacturer": "Gallofree Yards, Inc.",

..

"consumables": "6 months",

"hyperdrive\_rating": "4.0",

"MGLT": "20",

...

},