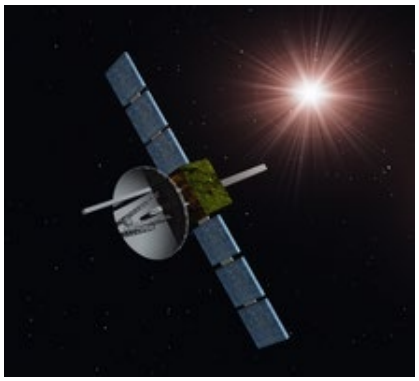
Exercise – JavaScript Objects and Functions

In this task, you must write code that is part of a web application for printing information about space probes.





With this program, you can list space probes by their destination, e.g., “Jupiter”.

A part of the program is already implemented, see *objects.js*. The program contains 3 objects with some information:

- pioneer10
- voyager1
- nozomi

a) Complete the missing properties in the 3 objects.

Add the properties `targets`, `success` and `nation` to each of the objects.

- `targets` is an array containing all destinations of the space probe.
- `success` is a Boolean indicating whether the mission was a success or not.
- `nation` is the nation that is responsible for the mission.

The values for these properties can be found in the following table:

	targets	**success**	**nation**
pioneer10	`"planet5"`	`true`	`"USA"`
voyager1	`"planet5", "planet6"`	`true`	`"USA"`
nozomi	`"planet4"`	`false`	`"Japan"`

Open *objects.js* in Visual Studio Code and add the missing properties to the objects.

b) Implement the function `showProbesByDestionation(…)`

The function `showProbesByDestination(destination)` lists information for all space probes that have `destination` as a target. The information about each probe should contain:

- **Name**: The name of the space probe.
- **Nation**: The nation of the space probe.
- **Duration**: The duration of the mission in years. If the mission is not yet finished (`missionDuration.to === null`), the output should be `"Still on its mission."`
- **Mission status:**
  - If `success` is `true`: `"This mission was a success!"`
  - If `success` is `false`: `"This mission was a failure."`

For example, the output of `showProbesByDestination("planet5")` is:

```
--------------------------------
- Destination: Jupiter
--------------------------------
Name    : Pioneer 10
Nation  : USA
Duration: 31 years
This mission was a success!

Name    : Voyager 1
Nation  : USA
Duration: Still on its mission.
This mission was a success!
```

The program already contains a helper function `isInArray(val, arr)`. This function searches for a value `val` in the array `arr` and returns `true` if it finds the value. Otherwise, it returns `false`. You may use this function in `showProbesByDestination(destination)` to search for the destination in the `targets` property of the space probes.

For example:

```
var myArray = ["planet6", "planet3"];
var found = isInArray("planet3", myArray);
console.log(found); // Expected output: true
```

Note that you need the object `planets` (already in *objects.js*) in order to retrieve the names of the planets. (In the example above, the function is called with `"planet5"` as parameter, but the output contains the name of the planet, `"Jupiter"`.)

Open *objects.js* in Visual Studio Code and implement `showProbesByDestionation(...)`.

(See next page for the complete expected output of this program.)

Test code:

```
showProbesByDestination("planet4");
showProbesByDestination("planet5");
showProbesByDestination("planet6");
```

Expected output:

```
---------------------------------
- Destination: Mars
---------------------------------
Name    : Nozomi
Nation  : Japan
Duration: 5 years
This mission was a failure.

---------------------------------
- Destination: Jupiter
---------------------------------
Name    : Pioneer 10
Nation  : USA
Duration: 31 years
This mission was a success!

Name    : Voyager 1
Nation  : USA
Duration: Still on its mission.
This mission was a success!

---------------------------------
- Destination: Saturn
---------------------------------
Name    : Voyager 1
Nation  : USA
Duration: Still on its mission.
This mission was a success!
```