

Guardians of the Galaxy - Space Adventure

— BACKGROUND STORY (Okay to skip) —

In 1988, following his mother's death, a young Peter Quill is abducted from Earth by the Ravagers, a group of space pirates led by Yondu Udonta. Twenty-six years later on the planet Morag, Quill steals an orb, after which he is intercepted by Korath, a subordinate to the fanatical Kree, Ronan. Although Quill escapes with the orb, Yondu discovers his theft and issues a bounty for his capture, while Ronan sends the assassin Gamora after the orb.

When Quill attempts to sell the orb on the Nova Empire capital world, Xandar, Gamora ambushes him and steals it. A fight ensues, drawing in a pair of bounty hunters: the genetically engineered raccoon Rocket, and the tree-like humanoid Groot. The Nova Corps arrives and arrests all four, imprisoning them in the Klyn.

While there, a powerful inmate, Drax, attempts to kill Gamora due to her association with Ronan, who killed his family. Quill dissuades him by saying that Gamora can bring Ronan to him, at which point Gamora reveals that she has betrayed Ronan, unwilling to let him use the orb's power to destroy entire planets such as Xandar. Learning that Gamora has a buyer for the orb, she, Quill, Rocket, Groot, and Drax work together to escape from the Klyn.

Elsewhere, Ronan meets with Gamora's adoptive father, Thanos, to discuss her betrayal and the loss of the orb. Accompanied by Drax, Quill's group escapes the Klyn in his ship - the Milano - and flee to Knowhere, a remote criminal outpost in space built in the giant severed-head of a Celestial. A drunken Drax summons Ronan while the rest of the group meet Gamora's contact, the collector Taneleer Tivan. Tivan opens the orb, revealing an Infinity Stone, an item of immeasurable power that destroys all but the most powerful beings who wield it. Suddenly, Tivan's tormented assistant grabs the Stone, triggering an explosion that engulfs Tivan's archive.

Ronan arrives and easily defeats Drax, while the others flee by ship, pursued by Ronan's followers and Gamora's sister Nebula. Nebula destroys Gamora's ship, leaving her floating in space, and Ronan's forces leave with the sphere. Quill contacts Yondu before following Gamora into space, giving her his helmet to survive; Yondu arrives and retrieves the pair. Rocket, Drax, and Groot threaten to attack Yondu's ship to rescue them, but Quill negotiates a truce by convincing Yondu that they can recover the orb. The group agrees that facing Ronan means certain death, yet despite that they also understand they must stop him from using the Infinity Stone to destroy the galaxy. On Ronan's flagship, the Dark Aster, Ronan embeds the Stone in his warhammer, taking its power for himself. He contacts Thanos, threatening to kill him after the destruction of Xandar; hateful of her adopted father, Nebula allies with Ronan.

Near Xandar, the Dark Aster is confronted by the Ravagers, the Nova Corps, and Quill's group, with Quill's group breaching the Dark Aster. While Ronan uses his empowered warhammer to destroy the Nova Corps fleet, Drax kills Korath. On the Dark Aster, after Gamora defeats Nebula (who escapes), she unlocks Ronan's chambers, but the group finds themselves outmatched by his power until Rocket crashes the Milano through the Dark Aster and into Ronan. The damaged Dark Aster crashlands on Xandar, with Groot sacrificing himself to shield the group. Ronan emerges from the wreck and prepares to destroy Xandar, but Quill distracts him, allowing Drax and Rocket to destroy Ronan's warhammer. Quill grabs the freed Stone, and with Gamora, Drax, and Rocket sharing its burden, they use it to disintegrate Ronan.

In the aftermath, Quill tricks Yondu into taking a container supposedly containing the Stone, then gives the real Stone to the Nova Corps. As the Ravagers leave Xandar, Yondu remarks that it turned out well that they did not deliver Quill to his father per their contract. Quill's group, now known as the Guardians of the Galaxy, have their criminal records expunged, and Quill learns that he is only half-human, his father being part of an ancient, unknown species. Quill finally opens the last present he received from his mother: a cassette tape filled with her favorite songs. The Guardians leave in the rebuilt Milano along with a sapling cut from Groot.

In a post-credits scene, Tivan sits in his destroyed archive with two of his living exhibits: a canine cosmonaut and an anthropomorphic duck.

Guardians of the Galaxy 2014, source: Wikipedia

— START OF ACTUAL QUESTION —

In this question, you will be modelling the adventure of the guardians on spaceships around the planets. You are to implement the following two classes:

1. A Spaceship is instantiated with its `name` and its starting `location` (name of the current planet). A Spaceship has the following three methods:

(a) `get_location()` returns the current `location` (planet) of the spaceship.

(b) `go_to(planet)` transports the guardians to a new planet `planet`. The return value will be a `String` according to one of the following conditions:

- If there are no guardians on the spaceship, "`<Spaceship name> does not have any guardians on board`" is returned. The location of the spaceship remains unchanged.
- If one of the guardians on board the ship knows of the new planet `planet`, "`<Spaceship name> travels to <planet name>`" is returned. The location of the spaceship becomes the specified planet.
- Otherwise, "`<planet name> is not a known location`" is returned. The location of the spaceship remains unchanged.

(c) `contains()` returns a `list` of the names of the current passengers in the spaceship.

2. A Guardian, the hero in the story, is instantiated with his/her `name`, his/her current `planet`, and **optionally** an arbitrary number of `planets` that he/she knows of. While a Guardian always starts on a planet, the current location of the guardian can be either a planet or a spaceship (not both). A Guardian class has at least three methods:

(a) `known_planets()` returns the list of planets that the guardian knows about.

(b) `board(ship)` causes the guardian on board of the spaceship `ship`. You can assume that `ship` is a valid Spaceship. The return value will be a `String` according to one of the following conditions:

- If the guardian's current planet is not the same with the ship current planet, "`<Guardian name> cannot board the <Spaceship name>`" is returned.
- Otherwise, "`<Guardian name> boards the <Spaceship name>`" is returned. After going on board, the guardian shares his/her knowledge of the planets with all of the guardians that are currently on board, and vice versa.

(c) `get_location()` tells the current location of the guardian. The return value will be a `String` according to one of the following conditions:

- If the guardian is currently on board of a spaceship, "`<Guardian name> is on the ship <Spaceship name> at the planet <current location of the spaceship>`" is returned.
- Otherwise, "`<Guardian name> is on the planet <current planet of the guardian>`" is returned.

You are welcome to introduce new methods for the two classes, but you must minimally implement the methods specified above.

Sample execution (newlines are added for readability):

```
>>> milano = Spaceship("Milano", "Morag")
>>> milano.get_location()
'Morag'
>>> quill = Guardian("Quill", "Morag", "Earth")
>>> quill.known_planets()
['Morag', 'Earth']
>>> groot = Guardian("Groot", "Earth", "Xandar")
>>> drax = Guardian("Drax", "Earth", "Nowhere")
```

```

>>> gamora = Guardian("Gamora", "Xandar")
>>> rocket = Guardian("Rocket", "Nowhere")
>>> milano.contains()
[]
>>> milano.go_to("Earth")
'Milano does not have any guardians on board'
>>> rocket.board(milano)
'Rocket cannot board the Milano'
>>> quill.board(milano)
'Quill boards the Milano'
>>> milano.go_to("Earth")
'Milano travels to Earth'
>>> milano.go_to("Xandar")
'Xandar is not a known location'
>>> milano.get_location()
'Earth'
>>> milano.contains()
['Quill']
>>> quill.known_planets()
['Morag', 'Earth']
>>> groot.known_planets()
['Earth', 'Xandar']
>>> groot.board(milano)
'Groot boards the Milano'
>>> quill.known_planets()
['Morag', 'Earth', 'Xandar']
>>> groot.known_planets()
['Morag', 'Earth', 'Xandar']
>>> drax.board(milano)
'Drax boards the Milano'
>>> quill.known_planets()
['Morag', 'Earth', 'Xandar', 'Nowhere']
>>> groot.known_planets()
['Morag', 'Earth', 'Xandar', 'Nowhere']
>>> drax.known_planets()
['Morag', 'Earth', 'Xandar', 'Nowhere']
>>> milano.go_to("Xandar")
'Milano travels to Xandar'
>>> gamora.board(milano)
'Gamora boards the Milano'
>>> rocket.get_location()
'Rocket is on the planet Nowhere'
>>> milano.go_to("Nowhere")
'Milano travels to Nowhere'
>>> rocket.board(milano)
'Rocket boards the Milano'
>>> rocket.get_location()
'Rocket is on the ship Milano at the planet Nowhere'
>>> milano.contains()
['Quill', 'Groot', 'Drax', 'Gamora', 'Rocket']
>>> milano.go_to("Earth") # Let's go and save the Earth
'Milano travels to Earth'
>>> # End of sample execution.

```