

ARRAY : Video -

58



Medium

Leetcode
- 287

...E.A.S.Y...



Find The Duplicate Number

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Company :- 

287. Find the Duplicate Number

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Given an array of integers `nums` containing $n + 1$ integers where each integer is in the range $[1, n]$ inclusive.

There is only **one repeated number** in `nums`, return *this repeated number*.

You must solve the problem **without** modifying the array `nums` and uses only constant extra space.

$O(1)$

Example 1:

Input: `nums = [1,3,4,2,2]`

Output: 2

0	1	2	3	4
1	3	4	2	2

Approach without modifying array :- (Linear Runtime)

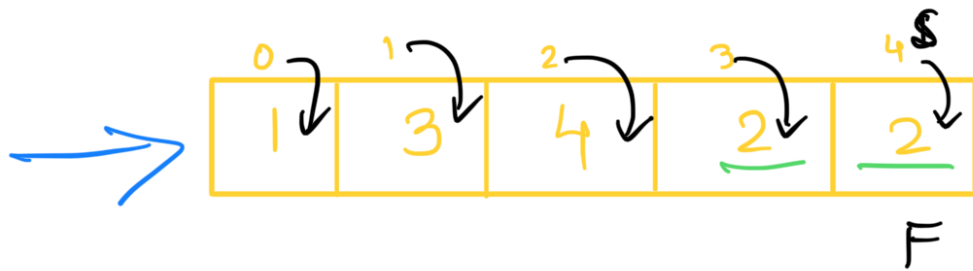
How I identify Hare & Tortoise Algorithm ???

→ (.) Duplicacy . X

→ (.) Traverse through indices . ($1 \leq \text{nums}[i] \leq n$)

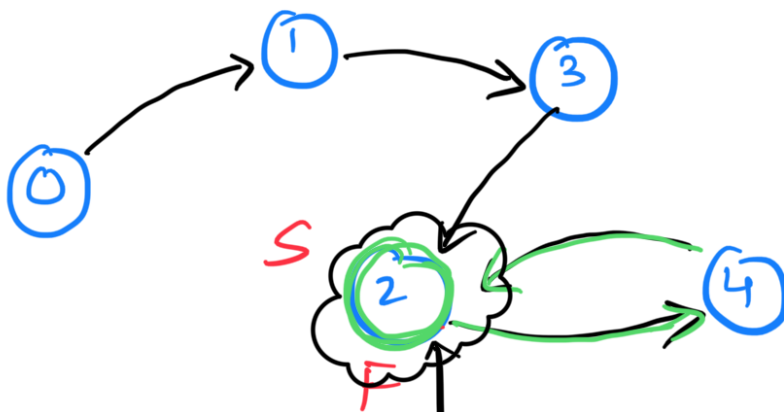


Hare & Tortoise (Slow-Fast Pointer)



(S == F)

Detect Cycle → "There is a Cycle"

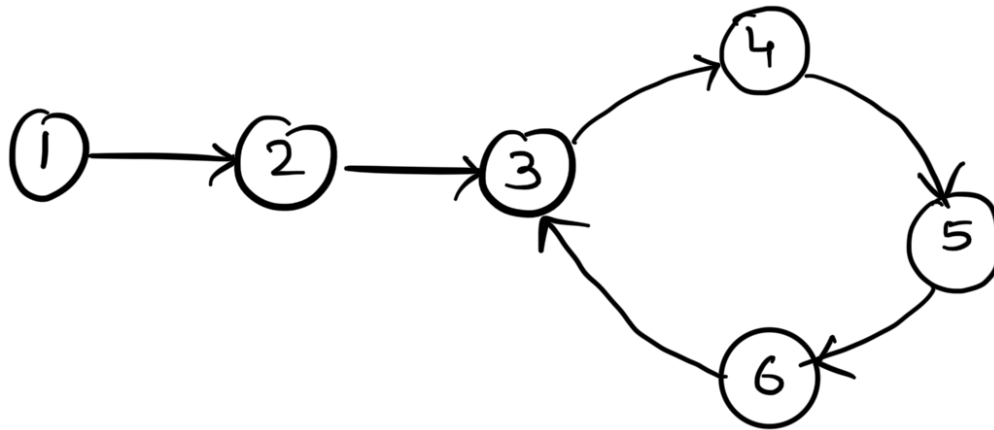


(S == F)

Detect cycle. ←

cycle starting point
(duplicate no.).

Intuition:-



the 1990s, the number of people in the world who are under 15 years of age is expected to increase by 1.5 billion (United Nations 1999).

There is a growing awareness of the need to address the needs of children in the 21st century. The United Nations Convention on the Rights of the Child (1989) has been signed by 112 countries, and the United Nations Millennium Declaration (2000) has set out a commitment to 'ensure that all children, everywhere, have access to primary education by the year 2015'. The United Nations Secretary-General Kofi Annan (1999) has called for 'a new global compact for children' to ensure that all children have the opportunity to reach their full potential.

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the 1990s, the number of people in the UK who are employed in the public sector has increased by 1.5 million (1990–1999) and the number of people in the private sector has increased by 1.7 million (1990–1999).

There is a growing emphasis on the need to improve the quality of care and services provided by the public sector. This has led to a number of initiatives, including the introduction of the Health Care Act 1999, the introduction of the NHS Constitution, and the introduction of the NHS Performance Framework.

The Health Care Act 1999 introduced a number of changes to the way in which the NHS is run. These changes include the introduction of the NHS Constitution, the introduction of the NHS Performance Framework, and the introduction of the NHS Complaints Procedure.

The NHS Constitution is a document that sets out the values and principles that underpin the NHS. It also sets out the rights and responsibilities of NHS staff and patients.

The NHS Performance Framework is a system of measures that are used to assess the performance of NHS organisations. These measures include measures of patient safety, patient experience, and financial performance.

The NHS Complaints Procedure is a system of procedures that is used to deal with complaints from patients and the public. It is designed to ensure that complaints are dealt with in a fair and timely manner.

The introduction of these initiatives has led to a number of improvements in the way in which the NHS is run. These improvements include improvements in patient safety, patient experience, and financial performance.

However, there are still a number of challenges that the NHS faces. These challenges include the need to improve the quality of care and services provided by the public sector, the need to improve the efficiency of the NHS, and the need to improve the financial performance of the NHS.

In order to address these challenges, the NHS is implementing a number of initiatives. These initiatives include the introduction of the NHS Long Term Plan, the introduction of the NHS Digital, and the introduction of the NHS Research and Innovation Strategy.

The NHS Long Term Plan is a document that sets out the NHS's vision for the future. It also sets out the NHS's priorities for the next 10 years.

NHS Digital is a system of digital services that is used to improve the way in which the NHS is run. These services include services for patient safety, patient experience, and financial performance.

The NHS Research and Innovation Strategy is a document that sets out the NHS's vision for the future of research and innovation. It also sets out the NHS's priorities for the next 10 years.

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