Hackbenchers #4 LIVE

455 Registered ALLOWED TEAM SIZE: 1 - 3

REGISTER NOW

STARTS ON:
Jul 28, 2020 06:00 PM IST

HACKATHON
Online

ENDS ON:
Aug 30, 2020 11:50 PM IST

POWERED BY sprint

OVERVIEW

Hello to all curious minds!

We are happy to welcome you to the fourth season of HackBenchers. It is the time of the quarter to learn and build something exciting. HackBenchers #4 brings you another interesting topic to explore: The Golden Ratio.

If you wish to sponsor this Hackathon, please let us know Sponsor Now

What is the Golden Ratio?

The Golden ratio is a special irrational number like pi (π) represented as phi, Φ.

Its value is around 1.61803398874989484820...

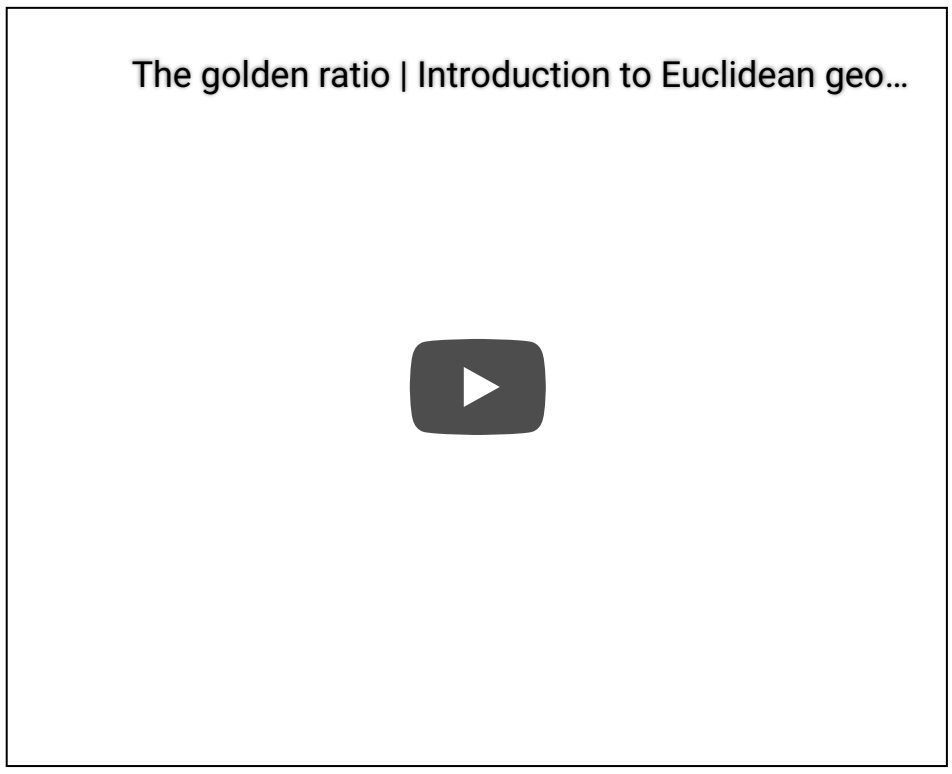
If the ratio of 2 numbers turns out to be tending to this 1.618 special value, the two numbers are said to be in Golden Ratio.

These 2 numbers can be anything, from sides of a rectangle to curvature of spirals.

Rule of thumb is, just remember that if the ratio of 2 things converges to 1.61803398874989484820 or anything even near that value, these things are said to be in Golden Ratio.

By definition, Two numbers are in the golden ratio if the ratio of the sum of the numbers (a+b) divided by the larger number (a) is equal to the ratio of the larger number divided by the smaller number (a/b).

Here is a video by Khan Academy on the Golden Ratio:



The golden ratio is best approximated by the famous "Fibonacci numbers." Fibonacci numbers are a never-ending sequence starting with 0 and 1 and continuing by adding the previous two numbers. The next numbers in the Fibonacci sequence, for instance, are 1,2,3, and 5.

0

1

1 (0 1)

2 (1 1)

3 (2 1)

5 (3 2)

The ratios of sequential Fibonacci numbers (2/1, 3/2, 5/3, etc.) approach the golden ratio. In fact, the higher the Fibonacci numbers, the closer their relationship is to 1.618.

2/1 = 2

3/2 = 1.5

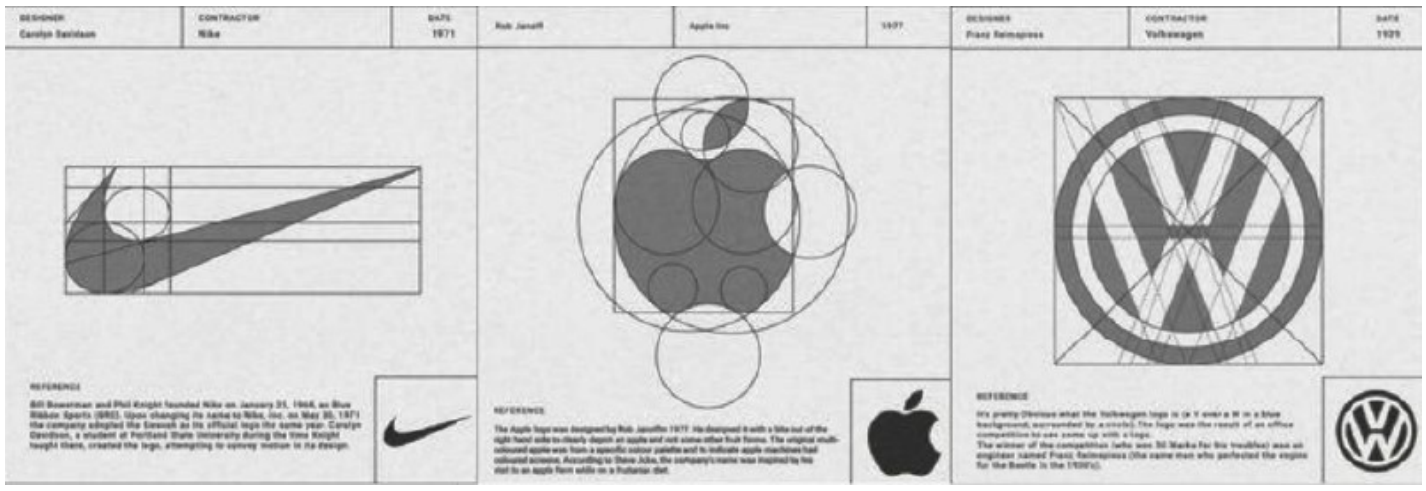
5/3 = 1.66666666 . . .

The golden ratio is sometimes called the "divine proportion," because of its frequency in the natural world. The number of petals on a flower, for instance, will often be a Fibonacci number. The seeds of sunflowers and pine cones twist in opposing spirals of Fibonacci numbers. Even the sides of an unpeeled banana will usually be a Fibonacci number—and the number of ridges on a peeled banana will usually be a larger Fibonacci number.

Golden ratio has its applications in all aspects of nature, art, finance, and much more. Below are some examples of the Golden ratio in action:

The Golden Ratio (also called the golden rectangle and golden mean) is used by designers in creating product logos.

Nike, **Apple**, and **Volkswagen**are a few logos that have been created using the golden ratio illustration.



Eligibility

Age: 19 and under (high school, undergraduates)
Avid learner

THEMES

Identify The Golden Ratio In Everyday Objects

Problem Statement

Develop a Frontend/Website/Mobile Application depicting the concept of Golden Ratio, which would let the users understand different applications of Golden ratio in Nature, Art, Architecture and Finance. etc.

Tasks

- Your Application must have a Home Page with pictorial & theoretical explanation of Golden Ratio
- Your Application must have an Examples/Applications Tab, which shows as many unique pictorial/visual representations of Golden Ratio in various fields as possible. Thereby Identifying The Golden Ratio In Everyday Objects. Each field can have multiple representations. Example - Architecture can have 4, Design can have 6, etc. As many examples as possible.

  Plus Point if we can filter examples by fields. Example - Filter by Design etc.
- It would be great if you can come up with an **Interactive Tab**, which can be open to your own imagination. It can be anything from uploading images & finding Golden Ratio patterns in them to interactive demos depicting/representing Golden Ratio to your Profile picture in Golden Ratio. Anything you wish!!

  Click here to see a couple of samples.
- Your application must be interactive and visually appealing.

Deliverables

Zip and upload all the source code, executables, deployment instructions, and README files. Please provide the Deployed URL link if deployed anywhere. Or just provide source code to run it locally.

Tech Stack

- Frontend: Open to all frameworks, and languages
- Mobile: Android, iOS - Swift, Open to all frameworks, and languages

PRIZES

Main Prizes

Beginner Explorer
INR 10,000

This category awards the best project from a school team.

Pro Explorer
INR 10,000

This category awards the best project from a college team. (Must qualify eligibility as mentioned on the page)

Special Prizes

Certificate of Participation

A digital certificate will be given to participants from teams with the top submissions.

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Resources

- Tech Recruitment Blog
- Product Guides
- Developer hiring guide
- Engineering Blog
- Developers Blog
- Developers Wiki
- Competitive Programming
- Start a Programming Club
- Practice Machine Learning

Solutions

- Assess Developers
- Conduct Remote Interviews
- Assess University Talent
- Organize Hackathons

Company

- About Us
- Press
- Careers

Service & Support

- Technical Support
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10 LIVE EVENTS