Kolam Project

Tradition meets Technology. One source for all information and activities on kolam

Kolam, a more than 1,000 years old ancient Tamil art, is seen through modern technology, to encourage scientific thinking among youth. We take the kolam to various computing devices. The computing power of these devices opens up enormous scope for kolam in education, entertainment, and printing on paper and fabric. Implemented in 10 parts.

Part 1. Kolam - A comprehensive book on kolam. This is different from all the other books on kolam. Provides substantial information about kolams. About 200 pages. 25 topics. Richly illustrated with images. The topics include - **History**- From sangam literature. Quotes evidence to show that kolam was practiced during Aandaal's time, Kolams in temple architecture, kolam books of the previous 100 years.

Kolam today - Books of and on kolams, kolam notebooks, seminars on kolam, kolam contests, variations like kolam above water, below water, kolam with music. ChatGPT on kolam.

Types of kolam and its symmetry- A systematic approach to generate large kolams, The design of a lakh pulli kolam with just one line in Meenakshi amman temple.

Idaya kamalam kolam and its genaralisation.

Popular kolams

Kolams under different themes.

A sample kolam notebook

Notes on available kolam software, games, puzzles, and Websites on kolam.

Basic and higher mathematics in Kolam.

Current Status : Completed in Tamil and English.

Part 2. 20,000 kolams in 20 days is a book on how large kolams were created earlier, a new way of creating large kolams, and how to use our kolam software.

Status : Completed the Tamil version.

Part 3. Children's **coloring books** with about 100 kolams in each book.

Current Status : One book completed. More to come.

Part 4. Software to create all types of kolams in different sizes and shapes. This software is a product of evolution over many years. It takes the way the dots and lines are drawn to a new level, using the power of computing devices. Imagination is the limit for creating new kolams. Printouts up to 1,200 DPI. Useful in printing on saris, T-shirts, flexi banners, invitations, advertisements etc. You can see the power of computers in generating kolams of extremely complex patterns from the samples given in later pages. These kolam cannot be generated by hand, and can be only created by computers.

Kolams of straight dots, cross dots and circular dots can be created. Kolam size can be up to 50 x 50.

The suzhi can be of 3 different sizes.

Dots and lines made of complex beautiful patterns. The effects include - Twisting of the line. Lines made of colorful threads.

The lines of kolam can be made from given images. The images or ovals can occur in different sizes and intricate shapes. Images of different sizes can be used, and they will be resized automatically to suit the requirements.

By specifying the required reflection and rotational symmetries, adding one line will add many lines to satisfy theses symmetries. This speeds up the creation of kolam fast.

Free hand drawings can be created within the software and used as lines.

Three dimensional effects can be created in three different ways.

Kolams can be made into rangolis by coloring them.

Specification of which line comes above which line, in the snake kolam, which can have different heads and tails using images.

The dot and line effects can be changed with just a few clicks.

Kolams can be saved as an image for printing, or as a small text file for later modification. The image file can be in different pixel densities to suit simple to high quality printing.

Current Status : Completed for Windows.

Part 5. Kolam for the day software shows different kolams each day. Allows the user to specify the number of different kolams to be shown on that day, the number of variations of that kolam to be shown, and the duration of showing each kolam. Also Allows easy modifications, to change many properties of the kolam shown. This software is for those who wish to see different kolams without generating them from scratch.

Current Status : Completed for Windows.

Parts 6 and 7. Software for playing many games and puzzles. They are educational and stimulate thinking. They challenge the coordination of hand, eye and the brain. Since based only on kolam, it is very difficult to design them. Around 15 are planned. There are different levels of playing, with different difficulty levels. Every time, a new kolam is generated randomly, so that no repetition occurs.

The games and puzzles include -

1. Pick the candies - Move on the kolam and pick the candies.

2. Pair the flowers - Pick pairs of the same flower.

3. Eat the fruits - The squirrel should eat as many fruits as possible, before they drop down,

4. Drive to destination - Drive to destination on the lines of kolam, where the gates open and close dynamically. To change the path accordingly.

5. Odd man out - The kolams are generated randomly, but satisfying the condition that only one of the four kolams will be different in exactly one of the aspects. Creating such kolams perfectly is a difficult task.

6. Snake or rope or toy? Snakes, ropes and toys are shown. To find out the category of the specified one.

7. Where is my tail? Many snakes are shown. To find the tail of a particular head.

8. Who is the longest? To find the longest snake.

9. Make me symmetric To add or delete minimum number of connections to make the kolam symmetric

10. What is the symmetry? To find the reflective and rotational symmetry of the given kolam

11. Complete me To complete the missing portion of the kolam, keeping the symmetry shown in the other parts of the kolam.

12. Find the differences To find all the differences between the two kolams.

13. How many crossings are there? To find the number of crossing between the two given threads.

14. How many threads are there? To count the number of closed threads in the kolam.

15. Make kolam with required symmetry from all chips A chip gives a portion of the kolam around one pulli. Using the chips from a collection of about 80 chips, a kolam has to be created with given size and symmetry.

16. Make a kolam from the given chips Using the given chips, make a kolam which looks the same from all the four sides.

17. Rearrange 4x4 kolam A 4x4 kolam with 16 chips is rearranged using horizontal and vertical movements only. It has to be brought back using only such movements.

Current Status : A few completed for Android OS. Ongoing work.

Part 8. This software gives exercises to put dots and draw lines.

Current Status : Completed for Android OS.

Part 9. Short videos on different aspects of kolam. These will include tutorials for using the kolam creation software.

Current Status : One completed. More to come.

Part 10. A 3 in 1 physical game as given in games 15, 16 and 17.

Current Status : Prototype made.

E-Books and all software will be created in Tamil and English, and for almost all platforms.

First version of this package has been released for free download. Updates once in every 3 months.

To reach the maximum number users, especially students, we wish to keep all the E-Books and all software totally FREE. For sustainability, we need sponsors, those who wish to participate in presenting our heritage to the whole world, using technology.

The software can be downloaded from Play store, App Store or learnfunsystems.com.

This package is being created by Dr. V. Krishnamoorthy, along with his sister Mrs. Leela.

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Former Professor, School of Computer Science and Engineering, Anna University
Ph. D (1977) IIT, Chennai. Post Doctoral Fellow (1985 - 1987) Concordia University, Montreal, Canada.
Research/teaching experience - 38 years. 17 research papers in international journals. 7 books.
Designed OCR, online character recognition, fast Spell-check, hyphenation for Tamil. A new fast keyboard for touch screen devices for visually challenged for all languages.

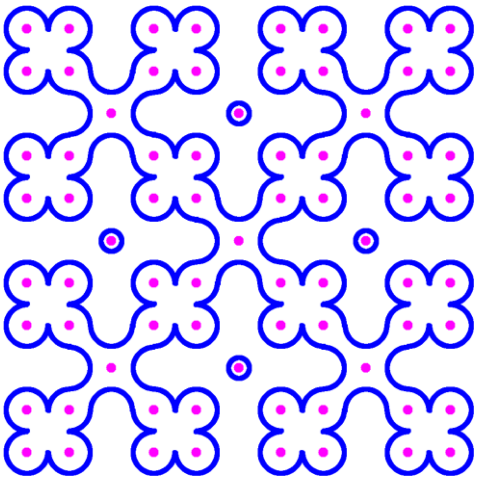
Mrs. Leele Venkatraman, has 75 years experience in drawing kolams. She has participated in drawing kolams in more than 100 temples. She has designed the big kolams drawn in the Meenakshi amman temple, Madurai. She has painted a kolam with more than a lakh of pullis on a screen. This kolam is made up of just one line.

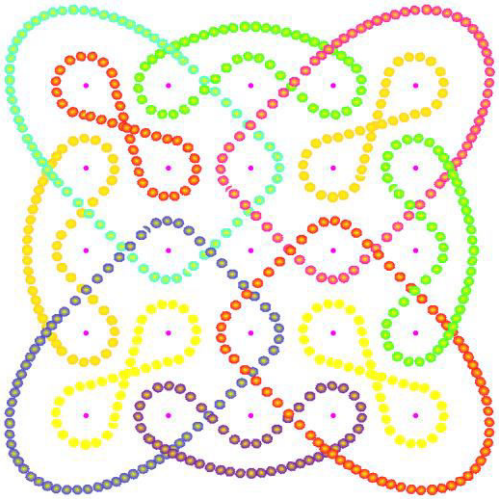
Opinion of some eminent persons about the project

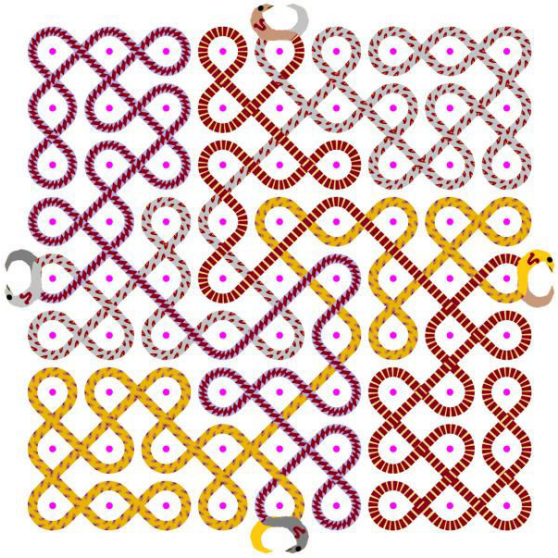
உங்கள் நூல் எனக்குப் பிரமிப்பைக் கொடுத்தது. என்னைப் பொருத்தவரைக்கும் புதுப்புதுத் தகவல்கள்; புதுப் பார்வை. வித்தியாசமான நூல் இது. கோலம் போடுவதில் நிபுணத்துவம் கொண்டவரும் அதன் அமைப்பைக் கணிதவியல் அடிப்படையில் காண்பவரும் இணைந்து எழுதியிருப்பது சிறப்பு. கோலத்தின் நுட்பங்கள் அறிவியல் அடிப்படையில் ஆய்வு செய்து விளக்கியிருக்கும் பகுதி இன்றைய காலத்திற்குப் பெரிதும் பயன்படும். சுவாரசியமாக இருந்தன. எளிய விளக்கம்; யாரும் புரிந்துகொள்ள முடியும். - **பெருமாள் முருகன்,** எழுத்தாளர்

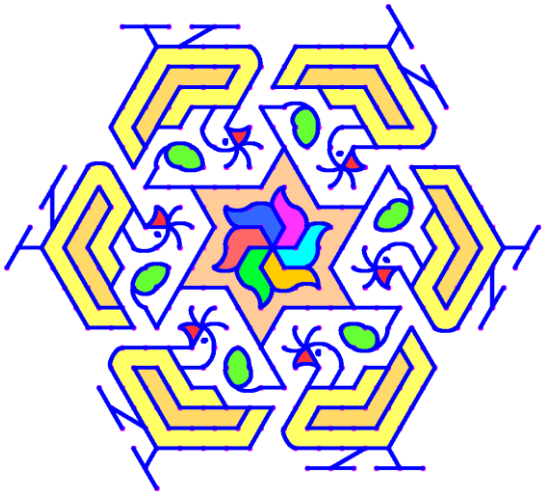
சுழிக்கோலம், கோட்டுக்கோலம், கட்டக்கோலம், கரைக்கோலம், அச்சுக்கோலம், எனக் கோலங்களின் வகைப்பாடுகளைக் கண்டு கண்கள் விரிகின்றன. கோலத்திற்கான அடிப்படைக் கணிதமும் விளக்கப்பட்டுள்ளது. கணினியின் தொழில்நுட்ப உதவியால் எல்லையற்ற கற்பனைத் திறனைக் கொண்டு விரும்பும் வகையிலெல்லாம் புள்ளிகளையும் கோடுகளையும் இட்டுக் கோலங்கள் வரைவதற்குப் பேராசிரியர் கிருஷ்ணமூர்த்தி மென்பொருள் உருவாக்கியிருப்பது எல்லையில்லா மகிழ்ச்சியளிக்கிறது. - **ஔவை அருள்**, இயக்குநர், தமிழ் வளர்ச்சித் துறை.

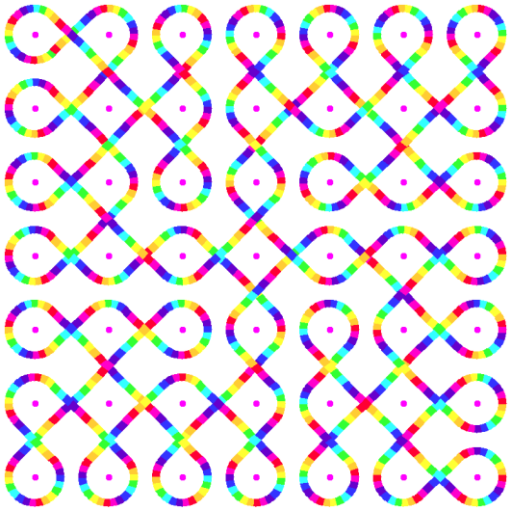
A few of the different types of Kolams, which are drawn using our Kolam software.
Note the versatility and uniqueness of these kolams.

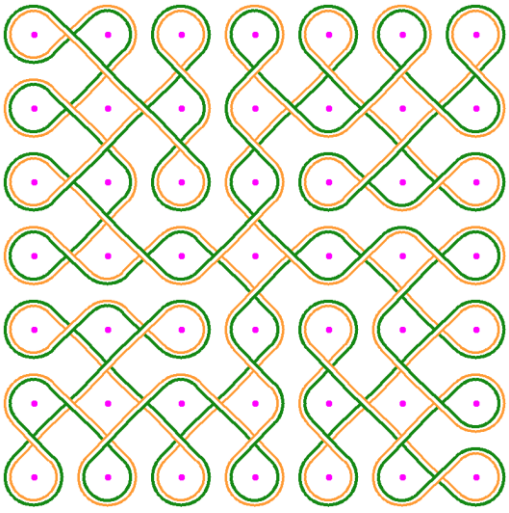


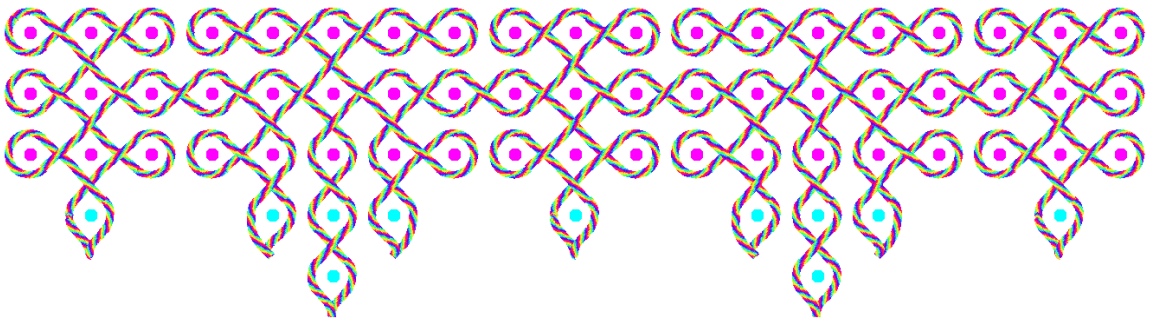


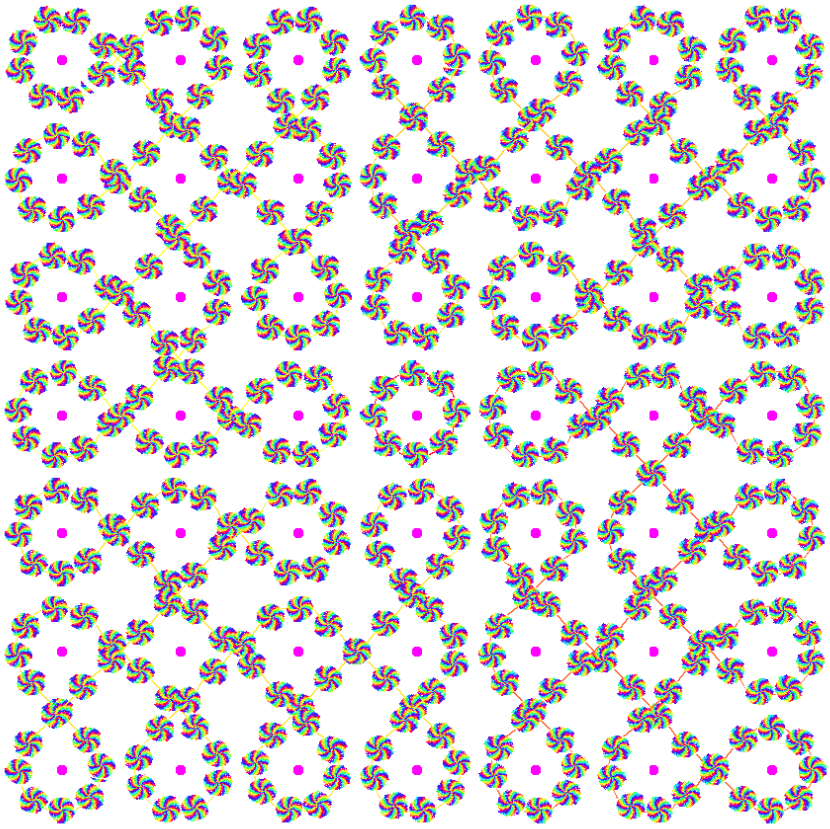


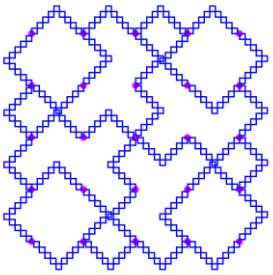


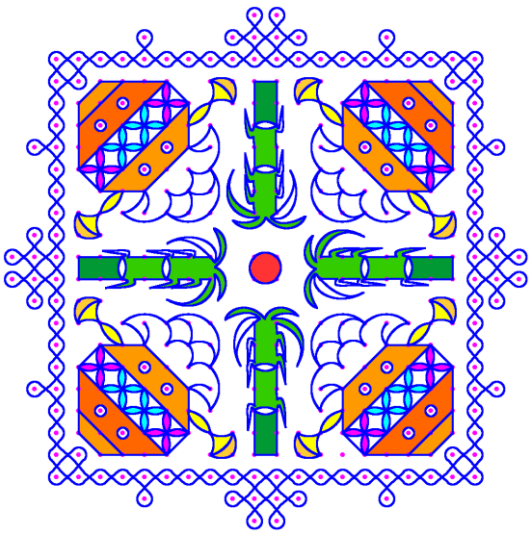


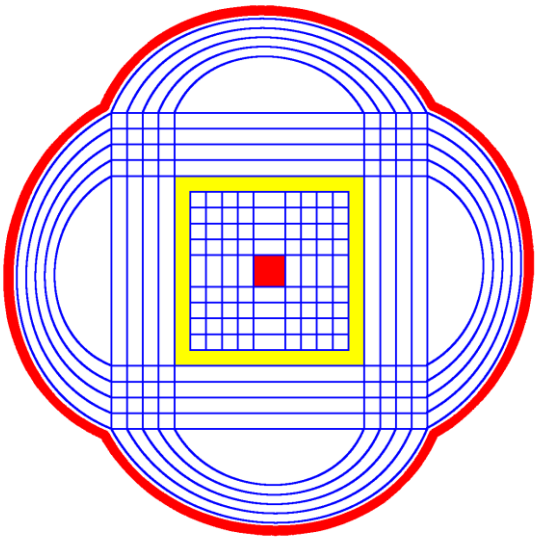


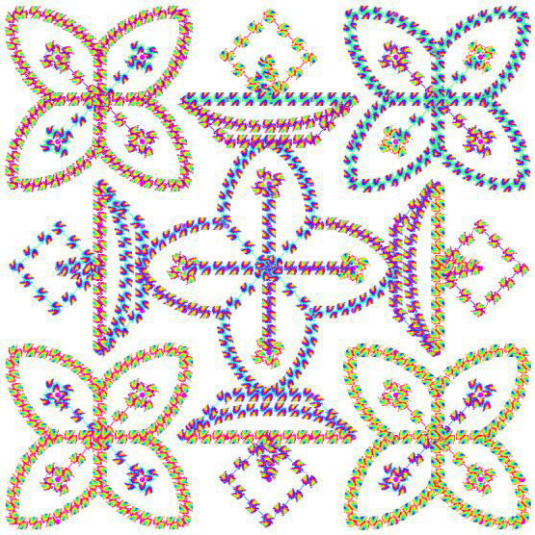


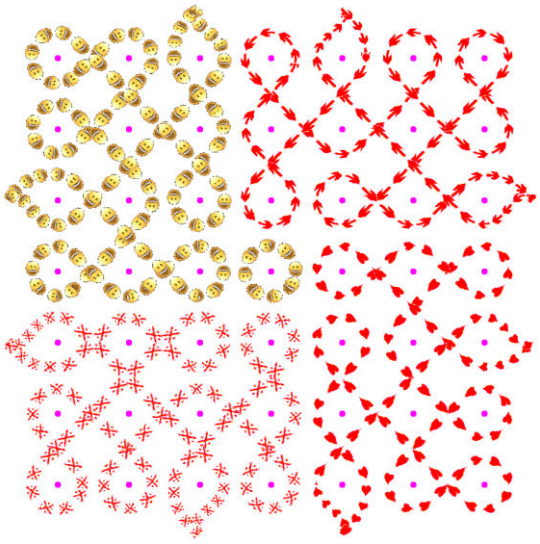


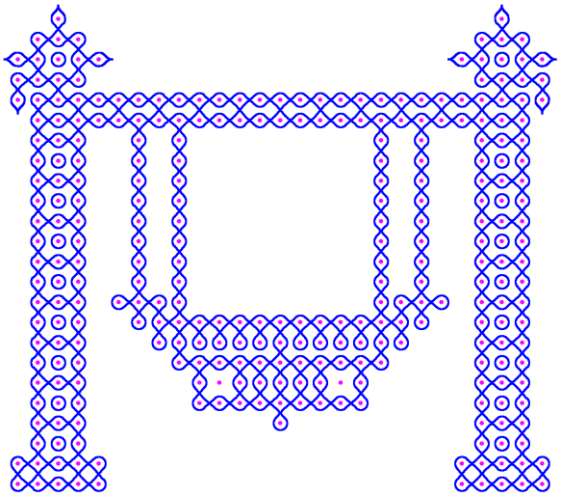


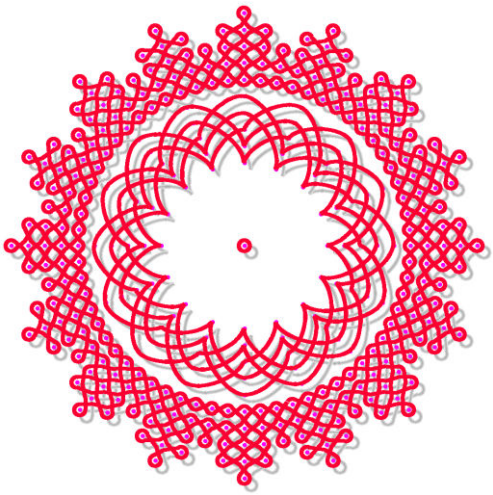


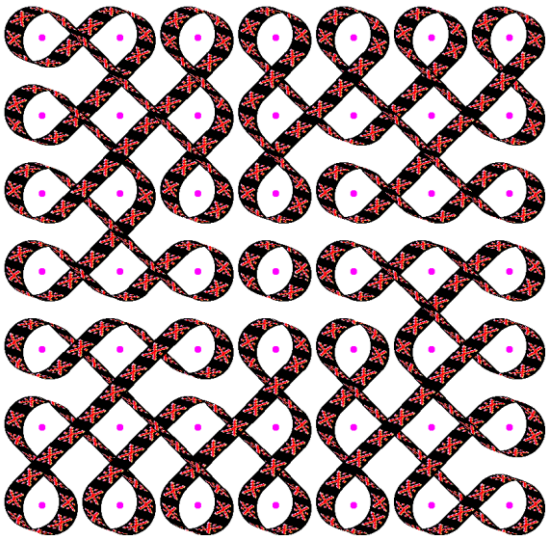


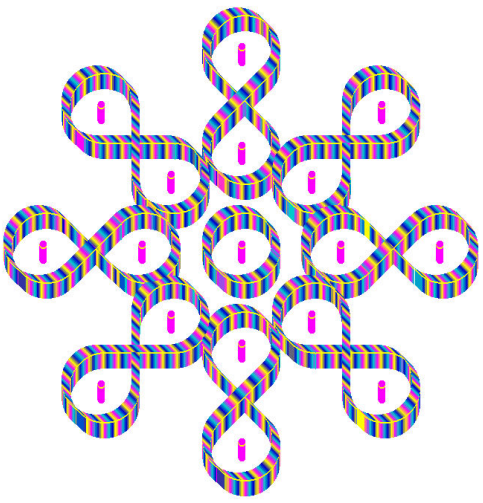


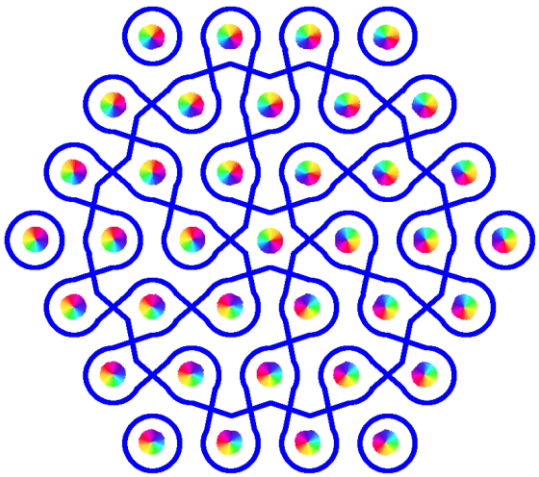


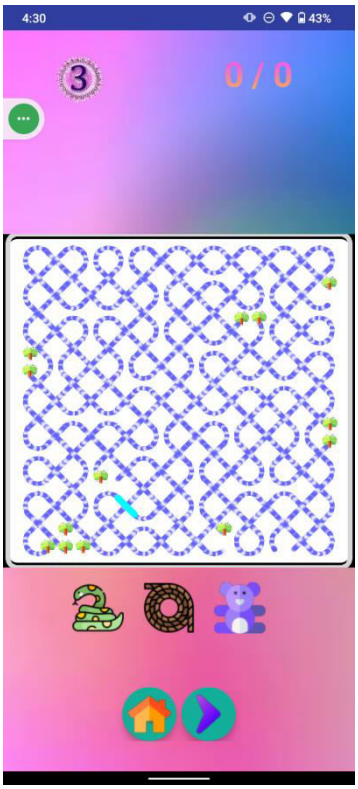








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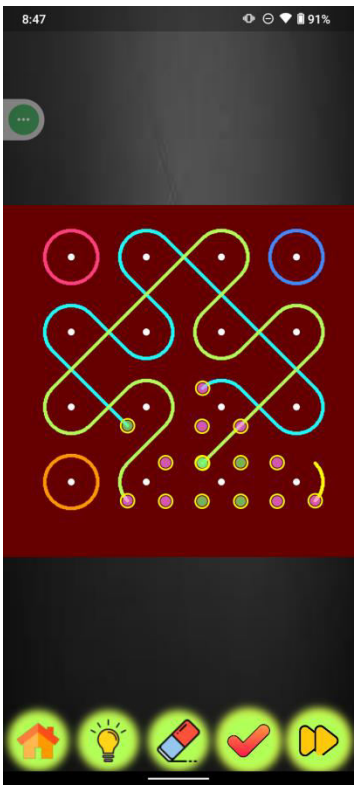
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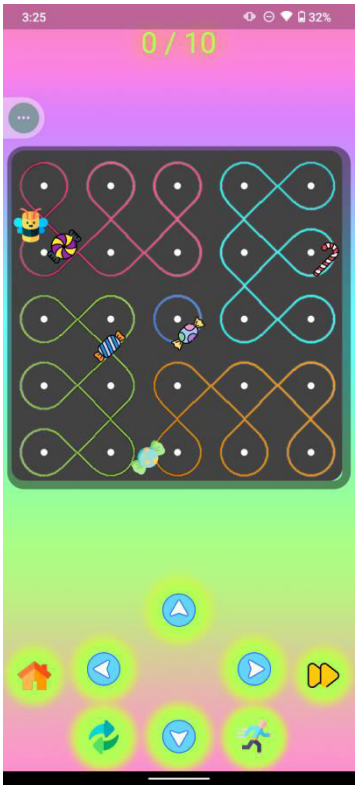
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