

# PEN ART IN SCRATCH PROGRAMMING

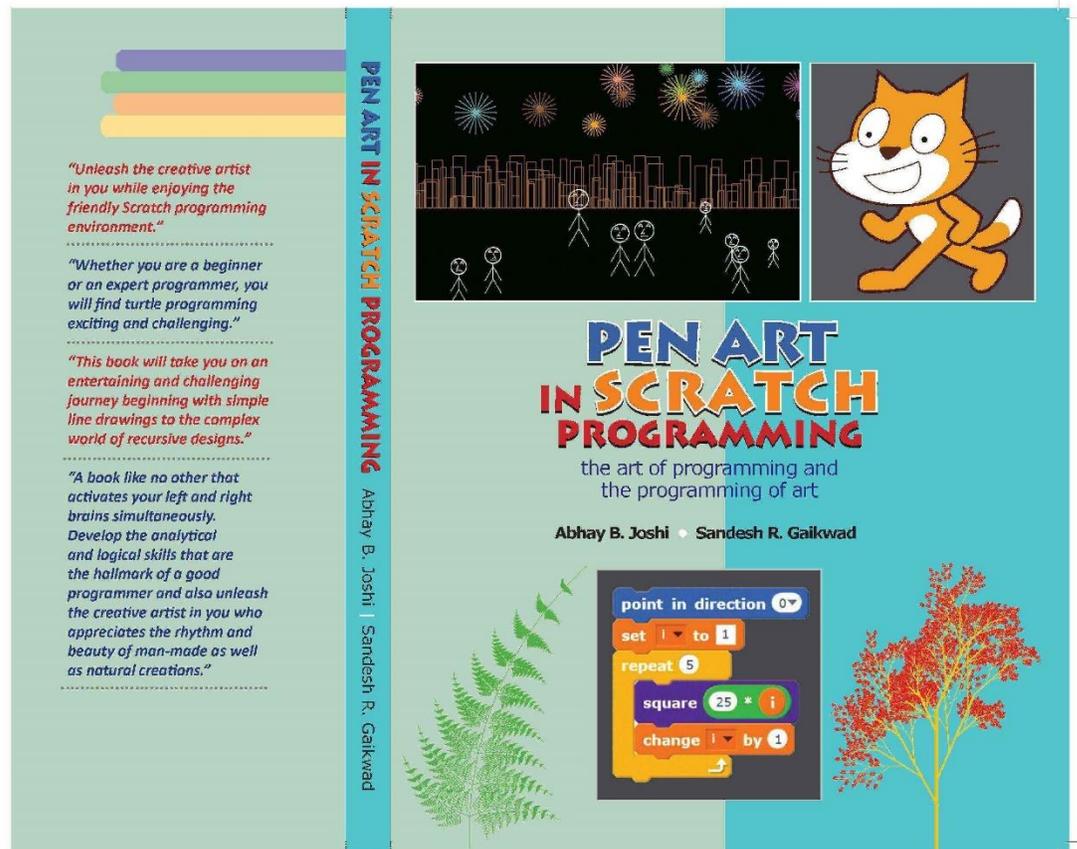
## Pen Art in Scratch Programming

by Abhay B. Joshi & Sandesh R. Gaikwad

This book explores how the "Pen" feature of Scratch can be used to create interesting designs. Pen programming (aka Turtle programming) provides a visual feedback by providing a clear trace of the sprite's movements. This is very helpful, especially for those who are new to the world of programming. It helps in analyzing your own thinking and serves as a debugging tool. Turtle programming challenges students to recognize patterns and learn effective use of the divide-and-conquer approach to create seemingly complex designs. And last but not the least, it stimulates artistic creativity. Students are inspired to create interesting designs while simultaneously developing analytical and programming skills.

*The role of the teacher is to create the conditions for invention rather than provide ready-made knowledge.*

— Seymour Papert



## Introduction:

"Pen Art in Scratch Programming" is a new exciting interactive book for middle- and high-school students and for beginner CS college students. This book focuses on the "Pen" feature of the popular Scratch programming language.

It is assumed that the reader is familiar with the basic features of Scratch, such as, motion commands and looping. There is a lot of material on Scratch Programming on the Internet, including videos, online courses, Scratch projects, and so on. We highly recommend the book "Learn CS Concepts with Scratch" in this series, if you are a complete newcomer to Scratch, or if you wish to brush up on your concepts.

However, as you will discover, you can become an accomplished "Pen Artist" (or "Turtle Programmer") without having to be an expert Scratch programmer. The book explains relevant Scratch commands and concepts wherever required.

## Download a free chapter:

[Click here](#) to download a full chapter of this exciting book. If you like it, be sure to get your hands on the whole book.

## How to get your copy:

This book is available on Amazon Kindle and in print (in India and US only). To order your printed copy in India, write to [abjoshi@yahoo.com](mailto:abjoshi@yahoo.com).

## Pricing: (shipping cost extra for print version)

Amazon Kindle (full color)	US: \$7.99	India Rs. 200
Print edition (content in black & white):	US: \$10.99	India Rs. 350

## **More about the book:**

This is book termed an “interactive book” because it is something between a traditional book – which is static and passive – and a fully interactive online course. It does look like a book: it has a series of chapters, diagrams, a lot of text, etc. But it also contains links to online Scratch programs, code snippets, references, which the reader is expected to click and explore to fully benefit from the ideas presented.

## **Curriculum:**

The book is organized as a series of chapters – each containing a bunch of concepts and associated programming activities. Every chapter includes review questions and several programming assignments that will help you practice all the concepts learnt till then. Answers to all “review questions” and links to working programs for most of the programming exercises in the book are available online.

## **Authors’ background**

As a freelance teacher, Abhay’s area of interest has been “teaching Computer Programming as a medium for learning” and he has been teaching Scratch, Snap, and Python regularly to middle and high school students and college students in the US and India. In 2011 Abhay co-authored (with Sandesh Gaikwad) two books on Logo Programming and later he authored two books on Scratch: “Learn CS Concepts with Scratch” and “Advanced Scratch Programming”. Abhay has been associated with the Software Industry since 1988 as a programmer, leader, and entrepreneur. After getting an MS in Computer Engineering from Syracuse University (USA), he worked for product companies that developed operating systems, network protocols, and secure software. In 1997, Abhay co-founded Disha Technologies, a successful software services organization.

As an ERP/Business Process consultant and Project Management specialist, Sandesh is actively involved in the training, coaching and mentoring of software professionals on technical topics as well as on leadership, communication, and project management. Sandesh started his career in Software industry in 1991 and has worked across the globe in a variety of roles. Prior to that he was a lecturer and taught assembly language and Pascal programming to engineering students. He has been teaching computer programming to high school students since 2008.

Programming remains a favorite hobby of the authors, and they continue to explore the “entertaining, intellectual, and educational” aspects of programming.

Abhay lives in Seattle, USA and Sandesh lives in Pune, India.