A Programming Language for the MySpace Generation

With Scratch Software from the MIT Media Lab,
Kids Can Create and Share Interactive Stories and Games
– and Learn Important 21st Century Skills in the Process

On the Web today, kids have access to millions of interactive animations, stories, and games. But it's a one-way street: kids only browse and click what others have created; they can't design and create their own.

Scratch, a new programming language from the MIT Media Lab, changes that. With Scratch, kids can program interactive stories and games by simply snapping together graphical blocks, without any of the obscure punctuation and syntax of traditional programming languages. And kids can share their interactive Scratch creations on the Web, the same way they share videos on YouTube or photos on MySpace.

"This is the next step in user-generated content," says Mitchel Resnick, Professor of Learning Research at MIT Media Lab, and head of the Scratch development team. "Our goal is to expand the range of what kids can create, share, and learn. As kids work on Scratch projects, they learn to think creatively and solve problems systematically – skills that are critical to success in the 21st century."

Resnick's Lifelong Kindergarten research group previously developed the "programmable bricks" that inspired the award-winning LEGO® MINDSTORMS® robotics kits. Just as MINDSTORMS allows kids to control LEGO creations in the physical world, Scratch allows them to control media-rich creations on the Web.

Scratch is available for free download from the Web (http://scratch.mit.edu). It is designed for ages 8 and up, and runs on both PCs and Macs. The MIT Media Lab is now collaborating with other organizations – including Intel, Microsoft, Samsung, BT, the LEGO Group, Motorola, and One Laptop Per Child (OLPC) – to create versions of Scratch for other platforms and special target audiences.

The name Scratch comes from the scratching technique used by hip-hop disc jockeys, who spin vinyl records back and forth with their hands to mix music clips together in creative ways. Similarly, Scratch lets you mix together media clips: graphics, photos, music, and sounds. You can create characters that dance, sing, and interact with one another. Or create images that whirl, spin, and animate in response to movements of the mouse. Or integrate photos with music and sound effects to create an interactive birthday card for a friend.

Once you've created a Scratch project, you can share it on the Scratch website or embed it on other webpages, such as a MySpace or Facebook homepage. By interacting and experimenting with online Scratch projects created by others, you can get new ideas for your own projects and learn new programming concepts and tricks. If you like a character or song or image that you see in an online Scratch project, you can grab it and use it in your own project.

The Lifelong Kindergarten group developed Scratch in collaboration with educational researchers at UCLA, with financial support from the National Science Foundation and the Intel Foundation. Throughout the development process, the design team received a continual stream of suggestions and feedback from children and teens at Intel Computer Clubhouses and selected school classrooms.

"There is a buzz in the room when the kids get going on Scratch projects," says Karen Randall, a teacher at the Expo Elementary School in St. Paul, Minnesota. "Students set design goals for their projects and problem-solve to fix program bugs. They collaborate, cooperate, co-teach. They appreciate the power that Scratch gives them to create their own versions of games and animations."

For more information, see http://scratch.mit.edu/about

Questions or comments? Post them at Scratch Forums at http://scratch.mit.edu/forums or write to scratch-feedback@media.mit.edu

The **Lifelong Kindergarten** group (http://llk.media.mit.edu) at the **MIT Media Lab** develops new technologies that, in the spirit of the blocks and finger paint of kindergarten, expand the range of what people can design, create, and learn.

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