Desk Research

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1) (Solution) Gamification of the learning process:
   - http://robozzle.com/js/index.aspx
     A game that teaches you how to code. The goal of the game is to move on a platform and collect all the stars. Users can program their own functions with rudimentary movement operations, conditions and function calls. A function can only do a set amount of actions, thus the game forces you to learn recursion and stack.
   - https://brilliant.org/courses/programming-python/
     Brilliant is a platform with many courses for all kinds of topics. It can be about the basics of programming or also more sophisticated topics like machine learning. The courses are designed to give a good introduction and make the students retain as much information as possible.
   - https://www.skillshare.com/de/classes/Computerwissenschaft-101-Beherrsche-die-Theorie-hinter-der-Programmierung/944357725
2) (Solution) Scratch:
   Scratch (programming language) - Wikipedia
   Scratch is a high-level block-based visual programming language and website aimed primarily at children as an educational tool for programming, with a target audience of ages 8 to 16.
3) (Solution) Professional Learning courses from Universities:
   https://ocw.mit.edu/collections/introductory-programming/
   MIT is offering free courses for programming and other computer science related topics.
4) (Evidence) Programming is a highly sought after skill in the job market:
   - https://www.microverse.org/blog/how-to-change-careers-to-software-development-9-steps-to-kickstarting-your-career-in-coding
   - https://www.topuniversities.com/courses/computer-science-information-systems/why-everyone-should-learn-code
   - Why Is Computer Programming Important?.
     “According to the Bureau of Labor Statistics, positions in specifically computer programming will decline slightly (10%) over the next ten years. However, when you look at different types of technology niches, BLS expects positions to explode. For example, computer information and research science positions will grow 22% over the next decade……”
   - https://www.indeed.com/career-advice/finding-a-job/in-demand-skills
5) (Evidence) Videos about how to learn to code and advice on where to start:
   - https://www.youtube.com/watch?v=Hlj8wU_rGIU (12:10 - 20:45 on tools and languages, 4:55 - 24:00 general advice on how to start coding)
     A video that gives a nice approche on how to start learning how to code. There are a multitude of languages and tools available for programming. This can be quite overwhelming for a beginner and they might not know where to start. The approche has the following 4 steps:
     - figure out what you want to do

        - figure out which tools and languages you can / should use
        - learn basics of said language
        - create first project :)
    - https://www.geeksforgeeks.org/7-tips-and-tricks-to-learn-programming-faster/
6) (User needs) Also people with some experience in programming might need help in developing their skills:
    - https://www.git-tower.com/learn/git/ebook/en/desktop-gui/basics/why-use-version-control
    - https://git-scm.com/book/en/v2/Getting-Started-About-Version-Control
7) (User needs) People might not necessarily need only programming skill but maybe also knowledge in different computer science topics:
    - A User-Centred Approach for Designing Algorithms …
8) (User needs) “The early bird catches the worm.” Helping kids to learn how to code:
    - https://kiddycodersclub.com/top-5-online-coding-game-platforms-for-kids
    - https://www.educationalappstore.com/best-apps/10-best-coding-apps-for-kids