## PROGRAMMER THINK LIKE A

## Creating Solving An Introduction to

though you think you und stand programming languages? Are you able to read through Do you struggle to write programs, even

your head the whole way, but able to apply what you've read to your own programs. Are you able to blank screen in your text editor? yet you feel your brain scize up when faced with a programming task and a you could explain to someone else what carteisse of the code is doing, comprehend a program example you've practed in the even to the point where a chapter in a programming book, nodding ? Are you able to

tion. We will call the missing skill problem solving, the ability to take a given of my students would have fit this description at some point in their instrucproblem description and write an original program to solve it. Not all promodifications to an existing program, debugging, or adding testing code, the gramming requires extensive problem solving. If you're just making minor You're not alone. I have taught programming for over 15 years, and most

THINK LIKE A PROGRAMMER. Copyright © 2012 by V. Anton Spraul.

wHROSFRIMENSTS GFM-80895-มีRObleRFand the publisher. Problem solving is hard. It's true that a few people make it look casy programming may be so mechanical in nature that your creativity is never in the programming may be so mechanical in nature that your creativity is never in the program of the work may be reproduced or transmitted in any born of the any means, electronic or testential in any long to the program of the programming profession of the programming the programming profession of the programming the programming profession of the programming the progra

into source code. To make a Java metaphor, it's as if their brains execute Java Kahkhh-Kahife Me rest of us have to run a virtual machine, interpreting as we go. ISBN-1897-1997 and the rest of us have to run a virtual machine, interpreting as we go. ISBN-1897-1997-1997 and the rest, the ਜਿਜ਼ਿਆਜਿਸ਼ੇਇੰਕਰੀs," the programming world's equivalent of a gifted athlete, like Michael Jordan Fas these select few, high-level ideas are effortlessly translated

Certa Perspect Dynaic Wifnar, they can never be programmers, that the only good Psចង់ខ្លម៉ូច និស៊ី៤០ភូម៉ូរ៉ូន ដែលបានចែល. In the worst cases, they give up programming PMOSHeiwausehhBandew programmers. Yet I've seen too many worthy learners Son with an innate gift.

Technical Realing Section Association problems so hard?

rop-application becaraending in estage only sectionally acaderical states of the praisity of t Copye**tnopgulakhelygeau**se problem solving is a different activity from learning Destricts brog Methering syntax, reading programs, memonizing elements of programulaing Spinest Street therefore uses a different set of mental "muscles."

activities. Writing an original program using previously learned tools and New New 18 feet affect right brain" activity.

18 kingel Street an Practice. Co. Agolt. Branch Hat has fallen into one of the rain phone 1818-85-800. Each will be a properly the control of the rain guiters on your house, but your ladder isn't quite long enough for you to guiters on your house, but your ladder isn't quite long enough for you to 

gutter. Is there some way to extend the ladder? Is there something you can Other product and North the ladder? Is there something you can Other product and North the ladder of the ladd an original program, your mental process is quite similar to that of the person the configuration has been the things of the person of the per problem solinguand de amenina and it is a manda and a second contrata and a design

nform Most programming books, though, focus their attention on syntax and essential\_husit's only,the first step in learning how to program in that lanemantics. Learning the syntax and semantics of a programming language is

great programmer a list of specifications, turn him loose with a fully stocked ples and knows how they can be combined to make great programs. Give a stocked kitchen. In the same way, a great programmer understands language syntax, application frameworks, algorithms, and software engineering princito make great meals. All a great cook needs to produce a tasty meal is a fully ration methods, and cooking methods and knows how they can be combined cookbooks can be a great cook. A great cook understands ingredients, prepa path toward learning to write original code. Think about cookbooks in the <del>iginal sense. Although great co</del>bks own cookbooks, no one who relies upon lat they teach specific "recipes" for use in particu one Books that do focus on writing are often an be quite valuable as time savers, but not as a gramming books for beginners teach how to read

programming environment, and great things will happen