

THE HOBBY TIME TRAINING APPROACH¹

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Abstract: *Constructivism asserted that learning arises from building mental models based on experience. The concept of Developer's point of view (DPV) learning approach is considered as "perceive the very solution to the problem as a game", thus, making transition to a next level of gamification.*

The paper introduces the Hobby Time Training (HTT) concept as part of the DPV learning approach. The HTT assumes solving of small, apparently simple problems, which encapsulates deeply hidden potential. The solving takes place during the students' free time and assumes unobtrusive guidance with as little as possible obligatory moments.

Bitwise operations contain the sought-after hidden creative potential, mainly due to the limited support both at the high and low levels. Besides that, bitwise algorithms suppose usage of some special techniques as word-level parallelism, unrolling loops and branch elimination. As an illustration of the hidden deep inner content of the bitwise problems, the attention is focused on the computing parity bit problem. Several sample solutions are discussed: from the Naïve Algorithm, through the Word-Level Parallelism Algorithms to the Hardware Supported Algorithm.

Keywords: *Bitwise, Constructivism, Gamification, Hobby Time, x86/x64, Word-Level Parallelism*

ASJC Codes: *1701, 1708, 1712*

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