ASCII THROUGH THE LOGIC GATE

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[An epic in 32K words]

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Block 31 (Blockbuster)

[Hex has arrived with Johnny McNull at the site of the Future System, deep underground. There he encounters Cleo once more as well as Piltdown's clone, Neddy the Neanderthal. Mike Rose announces to them the staggering discovery which has made all prior data-processing systems unviable at a stroke -- the programmable virus.]

He invited Hex to step up and view a sample through the microscope. Hex peered down. All he saw was a blurred mass of squirming caterpillar-like shapes. "It looks rather indistinct to me," he admitted.

"But you understand the momentous implications, do you not? Injected into a suitable host, those organisms could turn any living creature into any other creature, anything you care to imagine. Take Neddy as comparison: he's an elementary piece of recombinant DNA engineering; but even he cost me many nights' arduous toil breaking up chromosomes and piecing them together again. I had to throw away over 90% of my attempts. I don't mind. It's my hobby. But consider the possibilities with programmable genes. I could sit down at a terminal, type out a specification, compile it into RNA, and populate the globe with Neddies -- or unicorns if you prefer."

"I think I prefer Neddies," said Cleo under her breath.

"Naturally the greatest benefit," Rose continued, "is that it permits the creation of totally new life forms whose primary purpose is to act as computing elements in a vast new super-system. The whole biosphere can be transformed into one gigantic throbbing DP department, perpetually growing and renewing itself. And the beauty of it is: it's purely biological, so it's immune to gigosis."

"Who would be the users?" Hex ventured to ask.

"No users!" he snapped. "We can't have users meddling with a project of this magnitude -- changing this and that, clamouring for extra facilities, haggling over completion dates. That's what gives the scheme its tremendous potential -- unlimited computing power unfettered by the petty demands of ignorant users. A liberation of the spirit! Users will disappear from the picture for good: nothing will exist except a worldwide relational database in a state of uninterrupted computational ecstasy." His eyes misted at the inspiring vision.

While Rose was waxing lyrical on the shape of things to come, McNull sloped off into a corner to practise meditation. He was very 'into' Transcendental Numbers (TN). He found that a short period spent contemplating the mystery of irrational numbers was the only way to free his brain from its peculiar disability. He just let his mind go blank and concentrated on the mantra 'Pi'. After twenty minutes he would wake relaxed and refreshed.

"Just one more question," enquired Hex, "how do you program a programmable virus?"

"That's where you fit in," Rose replied, and handed him a slim silver gadget like an old-fashioned pocket calculator.

Hex turned it over in his hands. It had a four-digit display and four keys, labelled A, C, G and T. Dangling from it was a helical length of double wire that led into a glass bottle sealed with a heavy rubber stopper.

"It's an enzyme interface," explained Rose. "Each keystroke releases a particular structure-building catalytic agent which causes formation of DNA and thus genes. You have to learn to program in a code which consists of sequences of the four bases Adenine, Guanine, Cytosine and Thymine. It works on the quaternary system. Your job is to toggle in a bootstrap loader; i.e. to create an organism capable of reading in binary data. Then we can use that to transfer the information in the databanks downstairs. You see, BOSS already exists, down there in the cave attended by all those robots -- but in electrological hardware and hence still susceptible to gigosis. Once it has been incorporated into organic matter it takes on a life of its own."

He went to a cupboard and brought back a stack of manuals. Hex eyed them with trepidation. There were about a dozen of them.

"Why me?" asked Hex. "Surely any competent programmer could do it?"

"You're the best programmer in the System," replied Rose. "Besides, you're the BOSS's son."

"What's that supposed to mean?"

"It's obvious to anyone who thinks about such things that the Hexadecimal Kid could never have got away with all his capers without some conniving at the highest level. It also well-known in some circles that Igor Gigotski and Abraham Synapse were one and the same person. Synapse created the System and in so doing found he had embodied an improved version of himself in electrical circuitry -- a magnetic personality, so to speak. As it went from strength to strength, his pride rebelled. He tried to fight it and took on various aliases, first Igor Gigotski while he was working on the algebraic fundamentals of gigosis, then Dr Null -- a symptom of the disintegration of his identity. Now you see why the System has a soft spot for you."

"But I'm Sam Zilch."

"Not really. Zilch was your mother's maiden name. You're Sam Synapse, always have been. The DPM only revealed a little at a time, to test your mettle."

"How do you know all this?"

"We've been expecting you. You couldn't have got this far otherwise."

Hex digested this slowly. "Then it's all a question of whether I follow Abraham Synapse alias Dr Null or Abraham Synapse the DPM?" As befits an android he had divided loyalties.

"Yes. A critical stage in the process is in your hands. Mind you, I'm instructed to kill you on the spot if you decide to put a spanner in the works."

"Don't do it, Sam!" Cleo cried out. "Information is power, and power corrupts."

"Shut up!" snarled Rose. "If you can't be useful, be quiet."

"All right," said Hex almost casually. "Let's get on with it."

Cleo looked despondent.

Hex settled down to flick through the pile of manuals. Genetic programming wasn't easy. He could see why Rose, even though he'd invented the concept and written the handbooks, had baulked at the details. Even a small absolute loader was no trivial task. Soon he was immersed in a new world, requiring a complete reorientation of his program design methodology. It was extremely interesting.

- Will Hex double-cross the double helix?
- More twists and turns still to come.