## Ph.D Hari-Das the Hard-Disk\*

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Guruji tried hard to salvage Mr. Hari-Das, but to no avail — everyone said that he had Permanently head Damaged himself and was beyond repair. But to everyone's surprise Hari-Das was awarded a place in-midst of the distinguished few, who had Ph.D. and was granted permission to Permanently head Damage others, but at a different place, because they said they did not like people damaging others head in a place where they themselves had damaged theirs!

Having damaged Hari-Das and having nothing else to do the Guruji was in search of another Hari-Das, this time the search was a little more difficult (actually the search was becoming difficult day by day) because there was a strong lobby in the world machine called the IT industry which was snatching away all HD's as soon as they were ready and in market.

One fine morning to the utter surprise of guruji there stood a potential HD right in front of him. Guruji set his timer and let his HD\_test algorithm run and quickly analyzed the returned data and found Hari-Das to be fit, now he was sure that his algorithm would work, because he had gone over the source code carefully and compiled it with extreme care, debugging even the timest of his routines with infinitesimal care; but then like any good programmer he was not very sure if there would be any runtime errors or errors in the form of overflow or data underflow, either way there was nothing much he could do about this, because its dependence was more on the bits of data in HD. Guruji carefully looked at the bytes of data in Hari-Das and did not see anything unusual and so rubbed into his RAM that the program would complete in 5 years if not earlier and prayed that there be no core dumps or segmentation faults because he was afraid that he would have to debug his code all over again and this meant that his years of research in permanently head damaging others wasted.

Guruji already in midst of a sponsored project, could afford to purchase HD for his machine with no warranty. HD was smaller than the former PhD HD, the reason was the growing technology<sup>1</sup>! and so there was some adjustments that had to be done to fit him into the slot vacated by the

<sup>\*</sup>Any resemblance to true life character is purely incidental!

<sup>&</sup>lt;sup>1</sup>with growing technology HD's grow smaller

former HD, now proudly calling himself Dr. HD. Thought HD was very comfortable he felt that he was out of place with all those tiny chips and add-on cards surrounding him — but then he held a special place in the machine and hence held his cool which came from the fan that came attached to him.

Guruji was not really concerned if the slot that HD occupied was comfortable enough or not; he had paid for HD from under his nose and wanted to get started immediately and fresh. He called HD and wanted to reformat him to initialize him to the tune of his place, this meant loss of the earlier data but then the algorithm developed by guruji worked right from this basic (read it fundamental) step! Guruji went ahead with the reformatting knowing very well that HD came formatted a priori and that too with enough data and information; but then he decided to go ahead with the reformatting because that way the program would complete in the forecasted 5 years.

Initially, he low level formatted HD, at first it was bit by bit and then it was byte by byte. Everything seemed to be going on well, but under the microscopic eyes of guruji there were some errors in aligning bits and the only routine that was available was to reformat again from scratch. With this, things were all set for guruji and he hoped that everything would work well ...

As all new brooms sweep well (all thought so) HD started off well and guruji was happy with the performance. The data never got corrupted and guruji was happy with the amount of data that HD could hold; it was really amazing considering the fact that it was so small compared to the earlier permanently head damaged HD. Hari-Das worked faithfully keeping track of every bit and byte over all sectors and in all cylinders, seeing every program go by becoming a master by themselves. HD was patient and never lost his cool thought he was tested by many of the programs that later became masters. Guruji was too happy with the performance of Hari-Das for the simple reason that he did not have to spend enough time with HD and was getting the required performance. Things seem to go on well ever since the new HD occupied that slot vacated by the senior Permanently head Damaged HD. HD worked faithfully and guruji was more than happy with the buy. HD worked to a predefined plan and was running to a preset calendar like a half asleep always awake cron daemon — this pleased the guruji even more because in some sense his 5 year program had automated itself and he was sure it would work without his involvement. Very occasionally Hari-Das would give away and almost always he would revive himself without any external help, once in a while it would be those master programs or those smaller programs that would cause some problems in the form of disturbance that would disturb the power supply, this, guruji would immediately fix, without much effort and without requiring any external help; at other times it was some of the memory chips that would be overworked — this guruji would easily find and rectify in a jiffy. HD worked hard and people thought that he was likely to damage himself but then the guruji did not think so — he always felt that HD had not damaged himself yet<sup>2</sup> or reached anywhere near being called permanently head damaged! So HD was not thrown out, instead it was kept in its original place but with some additional support. HD was doing his work but at a reduced pace but now he was quite accustomed to his surroundings — he has seen so many chips and cards come in and go out and after a while he found that he was the senior most in his domain this set him rotating faster and erratically than ever before. He churned out data at a rate which he was capable of, but could not all these days, because of the limitations imposed by the chips and the cards with whom he had had to work, but now he cared less for them and more for himself and hence rotated at his own pace. But since he was getting old he did not notice that he was slowly damaging himself, but there were a couple of other master guruji's who wanted him out since they found that Hari-Das had sufficiently damaged his head by working on the program (which he had done well) and so they allowed him to churn out data at the rate he wished so that he could damage himself faster.

Guruji sensed that Hari-Das was going to damage himself one of these days and would have to be thrown out as a PhD, so he was in search for a new HD candidate who would eventually take over the slot of Hari-Das — in brief he was already on the lookout for a new HD so that the transition from Hari-Das to new HD would not be difficult for the other chips and cards to bear. So, he sent in information to all the vendors informing them that he was in search of a new HD, a couple of quotations came but eventually he had to buy from a person who had fixed a rate contract with the boss of guruji. Thus one bright Wednesday morning a slim, slender beauty with a couple of gigabytes of brains walked into his study and introduced herself as Harika-Dubey. Ms HD was of a new generation - a beauty with brains sort of stuff.

Since Hari-Das was to be thrown out soon and since there could not be a transition that spiky because this would effect the chips and the on board cards in addition to the chips sitting on the motherboard, Hari-Das and Harika-Dubey were put together and they worked in the master master mode though they were a generation apart. They were a perfect team syncing smoothly and working well as a team transferring data with ease between them in bits and bytes over a million times again and again. With in a few hours they were so accustomed to each other that

<sup>&</sup>lt;sup>2</sup>Argument: else how would he work so efficiently?

they felt that they were transferring data since ages. But a generation gap did take its toll; neither did Hari-Das tell nor Harika-Dubey realize that though they're working together they were not syncing as they should and that this nano second out of sync would cause problems later. The hitch was that Harika-Dubey was from a new generation and hence was much faster at churning out data compared to Hari-Das, but the older generation HD stretched himself to the limit and worked as hard as Harika-Dubey and erased the generation gap that had crept up. But then a generation gap is a gap whether one likes it or not so this had its effect on the old generation Hari-Das who was overworking himself and in this process was damaging himself. Then the ultimate had to occur and one fine Friday afternoon his guruji and a group of distinguished head damaged people who had helped Hari-Das damage his head proclaimed him Permanently head Damaged. This meant that he would be thrown out of the machine soon and in the mean time he took time off to transfer all the data that he had accumulated over years to Harika-Dubey again bit by bit doing a CRC check as he transferred. All his data was gracefully accepted and she had enough space left after the Megabytes of data transfer. Harika-Dubey to everyone's dismay was happy that Hari-Das had damaged his head but then was sad that Hari-Das had to leave and felt that the slot vacated by him could not be filled by any other person either from the next generation or as a matter of fact from her own generation.

Once out of the machine where he had a good friend in Harika-Dubey, Hari-Das was in search for a new machine that could afford him and supply him power so that he could work and perform all his program ideas, so in search of a nice machine he traveled from workstation's to laptop's. He found that though all the machines found him interesting and appreciated him though he had damaged his head with a PhD. But no one came forward to accept him and offer him a power supply, which was to him his life jacket so that he could churn some special data. Dejected he offered himself on a global basis and to his surprise he, the damaged one, was acceptable by a couple of machines overseas to churn data. He transported himself to that place and found a nice little slot on board in that remote machine. There the neighborhood was quite vast and he found lot of slots near him. He instantaneously set to work and soon established link with guruji's machine and was in touch with Harika-Dubey over the fast link on the internet — they exchanged news via the email and when required talked by starting a chat session over the net. This was a new experience to both of them, they felt so near to each other though they were a sea apart. This experience sent both of them mad with excitement and started churning out data impatiently at the unbelievable speed of light assuming that there was a optical link in midst them! This led

to Premature head damage of Harika-Dubey and also to a repeat head damage of Hari-Das, but this time he was proclaimed as a bigger head damaged person and was honored and placed in the distinguished list of even fewer PhD. Hari-Das returned home after damaging his head for the second time to the warm welcome of all the machines - they said once head damaged is bad but a double damage to head especially overseas was acceptable because it was proved that here would be no further head damage. Hari-Das though not very happy with this did not complain. Hari-Das obtained a neat slot in one of the finest machines and Harika-Dubey too was warmly welcomed by the machine, half because she was good enough for that machine and secondly because they felt that she would make a good team with the double head damaged Hari-Das since they had previously worked together as a good team sharing bits and bytes with out any CRC errors. Thus both Hari-Das and Harika-Dubey came together again and they lived ever happily sharing bits and bytes.

About the Author: Dr. Sunil Kopparapu has a PhD from IIT Bombay in the area of image processing and computer vision. He worked for CSIRO, Australia as a research scientist and was associated with the automation group based in Brisbane where he pursued research in the area of computer vision and image processing. He presently works for a company based in Bangalore as its R & D specialist. While technical articles demands much of his time, he likes to occasionally pen easy to read and humorous articles (not all necessarily related to science).

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