An Interesting Insight into [CooL-SPE/GCCS-Gentle Compiler Construction System] Software in the Context of Computational Complexity of Ising Spin Glass Models towards [DNA/RNA] based High Performance Sequencing and Theoretical Analysis of Gene Therapy R&D.

[Spin Glasses are always an inspiration – A Computational Challenge for the 21st Century ?]

[The CooL-SPE is a programming environment specially designed to support the professional development of large-scale object-oriented application systems . Revisiting CooL-SPE in the Context of Bio-informatics]

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[I] Inspiration & Introduction :

"The CooL-Software Production Environment[CooL-SPE] -

a new object-oriented development environment in Public Domain.The CooL-SPE is a modern software production environment for the development of object-oriented application systems supporting grafical user interfaces and relational database technology. In the landscape of existing software production technologies the CooL-SPE is more closely settled to 4GL environments than to the usual C++ environments, mostly more dedicated to system programming. The CooL-SPE was developed by Siemens Nixdorf Informationssysteme (SNI) within the ESPRIT project ITHHACA and is used since in a number of large projects." -
[Source : https://www.uni-ulm.de/~sbauer/programming/OOinfo/FAQ/oo-faq-S-11.19.0.4.html]

https://www.positivelyaware.com/.../gene-therapy-hiv-cure-research

www.theorie.physik.uni-goettingen.de/.../spin-glass-cea2.ps.gz

www.sciencedirect.com/science/article/pii/S147466701536986X

https://www.ias.ac.in/article/fulltext/pram/036/01/0001-0077

https://scholar.cgu.edu/allon-percus/wp-content/.../complexity.pdf

https://theory.stanford.edu/~jvondrak/data/ising.ps

https://doi.org/10.1088/0305-4470/22/18/036

https://young.physics.ucsc.edu/papers/challenge.ps.gz - { Spin Glasses: A Computational Challenge for the 21st Century }

[II] [Involving CooL-SPE/GCCS/SpinGlasses for] DNA based Informatics Framework to implement High Performance Sequencing/Bio-sensing/Bio-informatics Applications :
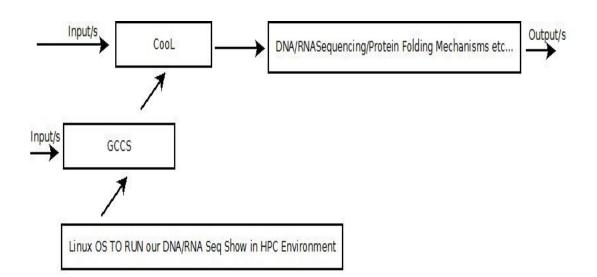
Our Algorithm :

Step I -

[a] Understand What is Spin Glass Theory. Do a simple survey of Spin Glass Theory.

[b] Study different software involving Spin Glass Theory – for example - Protein Folding mechanisms.

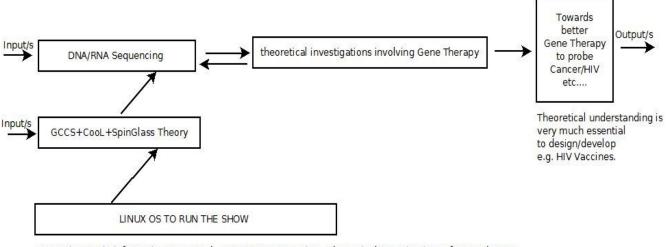[c] Try to design your own DNA/RNA Sequencing application/s.

Step II -

[a] Understand What is GCCS – Gentle Compiler Construction System/Toolkit.

[b] Understand CooL that was generated with GCCS – Source code available online.

[c] Try to run the CooL-SPE Environment/with some examples.

Step III -

Generating Code for Bio-informatics Applications based on Mathematics/Sping Glass Theory Concepts.
Our Bio-informatics Framework involving GCCS+CooL+Spin Glass Theory - Will this be a Novel Computational Challenge in Bioinformatics R&D ?
Approximate Simple Suggestion - Actual Implementation Will Vary to Some Extent.

[Figure I – Our Simple Suggestion & Bio-informatics Framework -Testing in progress]
[Useful Link - http://journaldatabase.info/articles/nucleic_acids_data_sequencing_using.html]

Approximate Bio-informatics Framework - DNA/RNA Sequencing - Theoretical Investigations of Gene Therapy
Please Check & satisfy Yourselves. Read the entire list of references presented.
Thanks - Dr.Nirmal

[Figure II – Simple Suggestion to probe Gene Therapy using GCCS+CooL+SpinGlass Theory as Informatics Tools - Testing in progress]

[III] Acknowledgment/s :

Special thanks to all WHO made this happen in my LIFE. Non-Commercial R&D.

[IV] References :

[a] http://gentle.compilertools.net/index.html

[b] https://www.uni-ulm.de/~sbauer/programming/OOinfo/FAQ/oo-faq-S-11.19.0.4.html

[c] vixra.org/pdf/1901.0133v1.pdf

[d] https://iopscience.iop.org/article/10.1088/0305-4470/15/10/028

[e] https://link.springer.com/chapter/10.1007/BFb0057526

[f] www.math.zju.edu.cn:8080/wjd/notespapers/**Barahona**.pdf

[g] https://en.wikipedia.org/wiki/**Spin_glass**

[h] https://www.brandeis.edu/igert/pdfs/dasguptanotes.pdf

[i] http://www.franciscobarahona.com/

[j] http://asg.unige.ch/projects/ithaca/cool/coolSPE.html

[k] www.yaroslavvb.com/papers/cipra-ising.pdf

[l] https://tel.archives-ouvertes.fr/tel-00683603/document

[m] assets.press.princeton.edu/chapters/i9917.pdf

[n] www.isi.edu/sites/default/files/users/.../Colloquium-Final-pdf.pdf - Benchmarking D-Wave One

[o] www.ime.usp.br/~gubi/MAP/dirty.ps

[p] https://www.repository.cam.ac.uk/.../MarkRowland_thesis_final.pdf?...1...

[q] sweet.ua.pt/sdorogov/references.txt - TXT file: A large list of references on complex networks.

[r] http://journaldatabase.info/journal/issn1792-6602 – Some important publications.

[s] http://journaldatabase.info/articles/nucleic_acids_data_sequencing_using.html *****

Very much useful information on GCCS -

"Special Reference on GCCS" - GENTLE COMPILER CONSTRUCTION SYSTEM :
The Compiler Construction System- GENTLE/Manual and Tutorial – by Jurgen Vollmer/GMD
Research Group at the University of Karlsruhe,Karlsruhe,Germany.
Updated edition of Arbeitsberichte der GMD Nr.508,Februar 1991. "

[THE END]