Haskell - FFI – Gentle Compiler Construction System Interaction via "C" programs in the context of cryo-EM Image Processing Application.

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Abstract :

Haskell - FFI – Gentle Compiler System Interaction via "C" programs in the context of cryo-EM Image Processing Application is an interesting idea to be explored.Hence this short technical note is presented in the context of cryo-EM Image Processing domain to probe Nano-Bio Systems.

index words: Haskell/Foreign Function Interface(FFI)/cryo-EM Image Processing/Gentle Compiler Construction System/C language.

Introduction & Inspiration :

Cryo-Electron Microscopy (cryo-EM) is an important tool to probe nano-bio systems,for more information,please read the following link.

Source : https://www.fei.com/cryo-em/

Informatics Framework Design & Implementation :
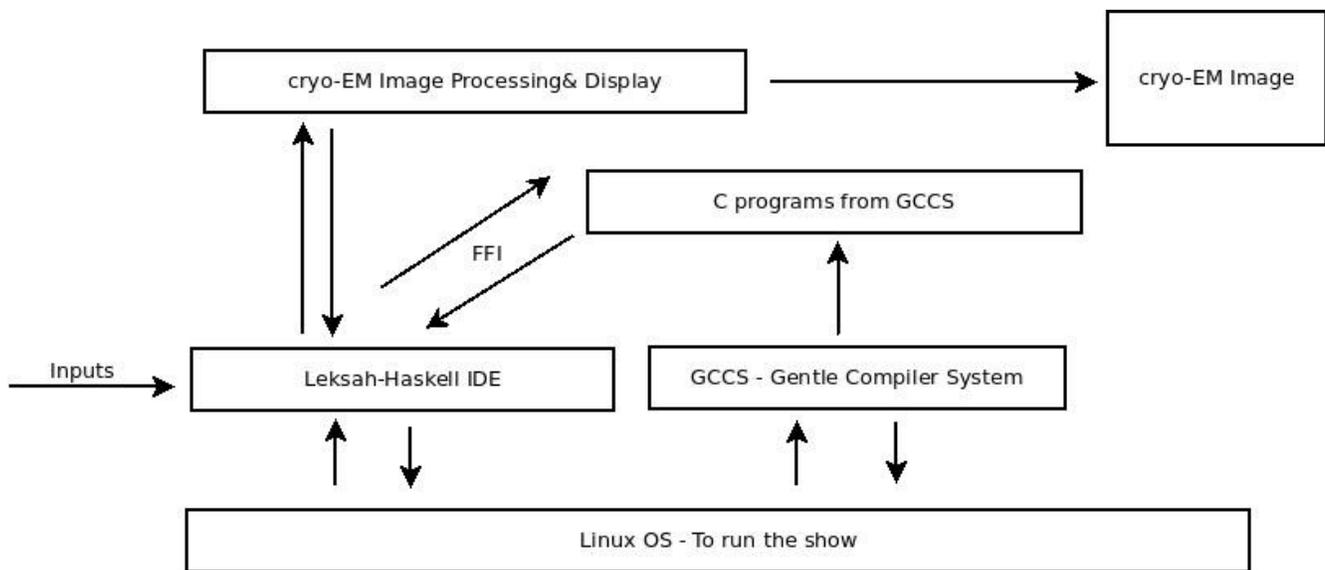
Approximate Haskell-FFI-GCCS-Informatics & Image Processing Framework in the context of cryo-EM

Figure I : Approximate Cryo-EM Informatics & Image Processing Framework.

Additional Information on Mathematics & Software Used :

[1] http://gentle.compilertools.net/

[2] https://www.haskell.org/

[3] https://www.ma.utexas.edu/users/hadani/publications.htm

Conclusion With Future Perspectives :

A short technical note as explained in the title of this manuscript is successfully presented.
To the best of our knowledge,this is one of the pioneering attempts in the challenging domain of cryo-EM Image Processing Application.

Acknowledgements :

References :

[1] Haskell-Java-JikesRVM/ImageJ Nano-Bio Informatics Framework based Cryo-Electron Microscopy/TEM/SEM Image Processing in the Context of Haskell Image Processing Libraries & HDF5 Image Format – A Simple Communication on Applications of Meta-circular Research Virtual Machine(RVM) & JTransformer-Prolog Development Tool by DNT Kumar.
[Source : http://vixra.org/pdf/1709.0376v1.pdf]

[2] Tej Kumar, Nirmal. (2016). An Insight into Cryo-EM Imaging Process Architecture Using GENTLE Compiler Construction System with an Informatics Design Paradigm. International Journal of Applied Research on Information Technology and Computing. 7. 80. 10.5958/0975-8089.2016.00008.7.

[3] https://www.fei.com/cryo-em/

[4] https://en.wikipedia.org/wiki/Foreign_function_interface

[5] https://wiki.haskell.org/Foreign_Function_Interface

[6] Kumar, D.N.T. & Shmavonyan, G.s. (2016). Understanding JikesRVM in the Context of Cryo-EM/TEM/SEM Imaging Algorithms and Applications – A General Informatics Introduction from a Software Architecture View Point. International Journal of Applied Research on Information Technology and Computing. 7. 1. 10.5958/0975-8089.2016.00001.4.

[7] http://www.gatan.com/techniques/cryo-em