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AG Genominformatik
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Algorithms in Genome Research
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Exercises

Number 5, Discussion: 2019 December 6

1. What experimental biases affect the analysis of Hi-C data? Make suggestions on how they can be dealt with explicitly.

2. Is the following matrix irreducible?

$$\begin{pmatrix} 0 & 0 & 2 & 0 & 0 \\ 1 & 0 & 0 & 3 & 0 \\ 0 & 7 & 0 & 0 & 0 \\ 0 & 0 & 0 & 5 & 0 \\ 3 & 0 & 1 & 2 & 0 \end{pmatrix}$$

3. Read pages 31-35 of Langville and Meyer's Book "Googles PageRank and Beyond: The Science of Search Engine Rankings".

   (a) Describe the PageRank Algorithm.
   (b) What are the commonalities and differences between PageRank and Sinkhorn-Knopp?