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In this paper, we make an attempt to estimate the famous Avogadro number with programming logics written in Python associated with advanced nuclear binding energy formulae and our proposed strong and electroweak mass formula pertaining to 4G model of final unification. Average rest mass of nucleon, nuclear binding energy per nucleon and electron rest mass seem to play a vital role in estimating the unified atomic mass unit and Avogadro number. Interesting point to be noted is that, Avogadro number seems to be the inverse of the Unified atomic mass unit. With further study, it seems possible to estimate the unified atomic mass unit and Avogadro number accurately. Our interesting observation is that, short range strong nuclear force seems to have a vital role in deciding the accuracy of Avogadro number. For that purpose one may consider AI techniques along with newly observed atomic nuclides and their nuclear binding energies. For  $Z=6$  to 118 and  $A_{\text{low}}=2Z$  and  $A_{\text{upper}}=3.5Z$ , estimated average value of Avogadro number is  $N_{\text{Average}} \cong 6.01938 \times 10^{26}$ . Considering the saturation of nuclear binding energy, at  $Z=26$ ,  $N_{Z=26} \cong (6.02229 \text{ to } 6.02285) \times 10^{26}$ . At academic level, our proposal can be given a chance as a case study. It is planned to develop a web application for this purpose

## Theory

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**Track Classification:** Beyond the standard model