Computational Physics

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1 Plan Of Action

1.1 Objective

The objective of this endeavour is to get an idea of the roll of Computation in solving Physics problems. Computational Physics complements the areas of theory and experimentation in traditional scientific investigation. Final goal would be to apply the techniques to predict outcome by simulation of the physical phenomenon.

1.2 Resources

- **Computational Physics: Problem Solving with Computers** [RUBIN H. LANDAU]
- **Computational Physics** [MARK NEWMAN]
- **www.w3schools.com** [for learning Python]

1.3 General Path to be followed :

1. Learning coding in Python.
2. Learning the necessary libraries in Python:
   NumPy
   SciPy
   Pandas
   Matplotlib
3. Implementing Math through code:
   Integrals and Derivatives
   Solving Linear and Non-Linear Equations
   ODEs and PDEs
   etc.
4. Monte-Carlo Simulations
5. Application of the techniques learned so far