**Differential Equation**

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| **Project Guide(s)** | Prof. V.R.Patil | | | |
| **Name of Industry** | NA | | | |
| **Nature of Project** | Study Base | | | |
| **Application(s) of Project** | NA | | | |
| **Abstract**: Mainly the study of differential equations consists of the study of their solutions (the set of functions that satisfy each equation), and of the properties of their solutions. Only the simplest differential equations are solvable by explicit formulas; however, many properties of solutions of a given differential equation may be determined without computing them exactly. In classical mechanics, the motion of a body is described by its position and velocity as the time value varies | | | | |
| **Introduction**: In mathematics, a differential equation is an equation that relates one or more functions and their derivatives. In applications, the functions generally represent physical quantities, the derivatives represent their rates of change, and the differential equation defines a relationship between the two. Such relations are common, therefore differential equations play a prominent role in many disciplines including engineering, physics, economics, and biology. Often when a closed-form expression for the solutions is not available, solutions may be approximated numerically using computers. The theory of dynamical systems puts emphasis on qualitative analysis of systems described by differential equations, while many numerical methods have been developed to determine solutions with a given degree of accuracy.      **Fig. 3: Use in Medical**  **Fig. 1: RLC Circuit** **Fig. 2: Motion of Aeroplane** | | | | |
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| **Competitions:** NA |  | | |  |