

**GROUP: SEVEN (7)**

**COURSE: PHY 305 – NUMERICAL COMPUTATION IN PHYSICS**

**LEVEL: 300**

**GROUP MEMBERS:**

- |                       |          |                |
|-----------------------|----------|----------------|
| 1. Opeyemi Ibrahim    | - 206386 | - Group Leader |
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**PHY 305 ASSIGNMENT:**

COMPUTING PYTHON 3 PROGRAM TO INTERPOLATE USING:

LAGRANGE INTERPOLATION METHOD

AND

NEWTON FORWARD DIFFERENCE INTERPOLATION METHOD

### LAGRANGE INTERPOLATION METHOD

Example: From the given table, find the values of  $f(x)$  at  $x = 2$  considering it to be a polynomial of order three.

$x_i$	0	1	3	4
$y_i = f(x_i)$	5	6	50	105

### NEWTON FORWARD DIFFERENCE INTERPOLATION

Example: Interpolate the function  $y = f(x)$  at point  $x = 1.5$  using the following data:

$x_i$	1	2	3	4	5	6	7	8
$y_i = f(x_i)$	1	8	27	64	125	216	343	512