ME685 HW6

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1. The Psuedo Code for the Lagrange Interpolating Polynomial is:

Algorithm 1: Lagrange Interpolation Algorithm

```
Given Data Points are passed to the subroutine
for k = 1,100 do                          ▷ Looping through points where interpolated function is to be calculated
    for i = 1,n do ▷ Looping through number of given points depending on order of the polynomial
        l = 1                                          ▷ Pre-setting value of Lagrange Polynomial as 1
        for j = 1,n do                                 ▷ Loop to calculate the Lagrange Polynomial for given i
            if i != j then
                l = l * (x - x_i) / (x_i - x_j)
            else
            end
        end
        y = y + l × y_i                                ▷ Calculating the Interpolated Value y at x of k-loop
    end
end
```

The Fortran Code for the Lagrange Interpolation is submitted alongside.

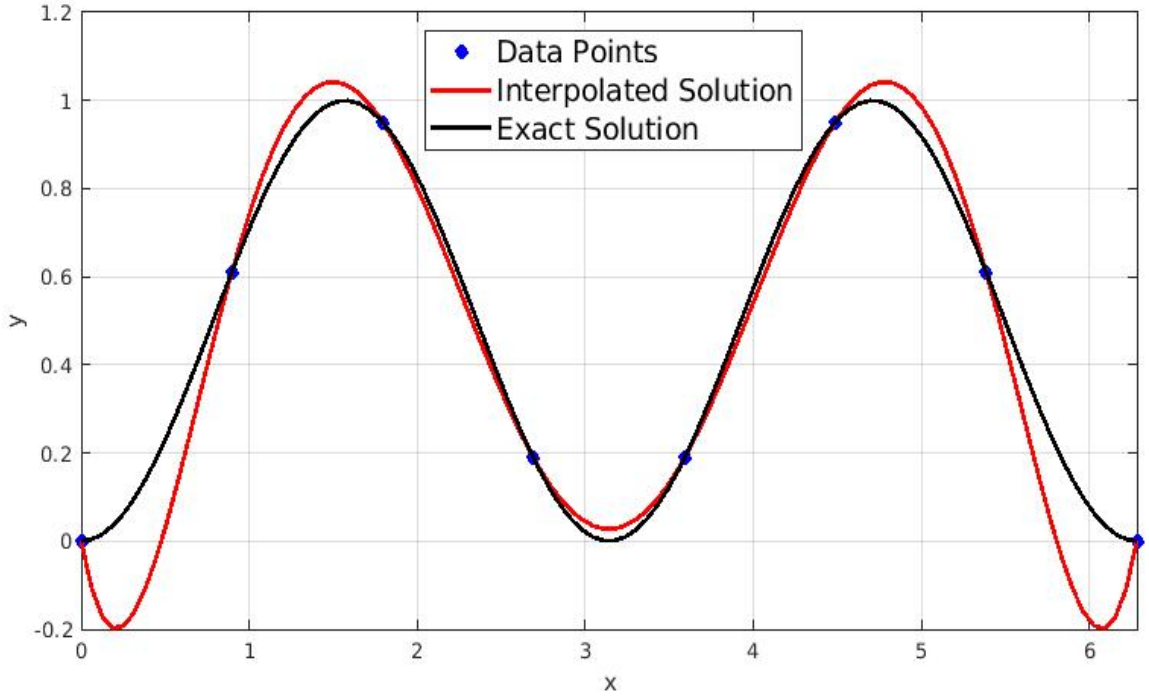

Figure 1: Plot

```
aman@xps ~/ME685 ./a.out
Mean Error=    6.44045845E-02
Maximum Error=   0.258621693
```