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| Course Number | 1444 |
| Section Number | **1** |
| Course Title | MATHEMATICS FOR EMBEDDED SYSTEMS |
| Semester/Year | Summer/2019 |

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| Instructor | **Mohsen Salahi** |

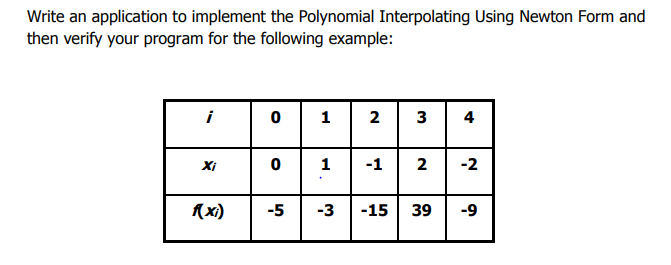
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| **Lab No.** | **4** |

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| Submission Date | **25/07/2019** |
| Due Date | **28/07/2019** |

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***Polynomial Interpolating Using Newton Form***



Program

#include <iostream>

#include <string>

using namespace std;

int main()

{

int m,i,j;

float x[20],f[20],a,sum=0,fact;

cout<<"No of functions given = ";

cin>>m;

cout<<" Value of Xi with corresponding f(Xi) ";

for(i=0;i<m;i++)

cin>>x[i]>>f[i];

cout<< " value of 't'= ";

cin>>a;

for(j=0;j<m-1;j++)

{

for(i=m-1;i>j;i--)

f[i]=(f[i]-f[i-1])/(x[i]-x[i-j-1]);

}

for(i=m-1;i>=0;i--)

{

fact=1;

for(j=0;j<i;j++)

fact\*=(a-x[j]);

fact\*=f[j];

sum+=fact;

}

cout<<"The value is "<<sum;

return 0;

}

Output:

