Department of Computer Sc. & Engineering

Parallel and Distributed Computing Lab.

Monsoon semester 2015-16

1. Write a program to implement summation of *n* data values stored in an array.
2. Write a program to calculate the following dot product:



1. The following definite integral of nonnegative function *f*(*x*)



can be calculated using following trapezoidal rule:



where .

Write a program to calculate the definite integral using trapezoidal rule.

1. The following definite integral of nonnegative function *f*(*x*)



can be calculated using following Simpson’s 1/3 rule:



where .

Write a program to calculate the definite integral using Simpson’s 1/3 rule.

1. Write a program to compute f(x) using the Lagrange’s interpolation defined as follows :



Where 

1. Given the data set *d*0, *d*1, …, *dn-1*, the prefix computation needs to calculate

*Pi*  = *d*0 + *d*1 + *d*2 +…+ *di*, 0 ≤ *i* < *n*

Write a program for the above prefix computation.

1. Write a program to implement the following matrix-matrix multiplication:



1. Write a program to compute the polynomial



1. Write a program to implement the following matrix-vector multiplication:

, *k* = 0, 1, …, *n*-1