**Assignment Number: 5.14**

**Problem Statement:**

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| **Hyperbolic Functions:** Write three MATLAB functions to calculate the hyperbolic sine, cosine, and tangent functions: |

**Inputs:**

x and the function files hypersine,hypercoss,hypertann

**Output:**

C for each function files

**Pseudocode:**

* Input the value of x
* Calculate hyperbolic sine of x by the formula,hyperbolic cos by the formula c= and hyperbolic tan of the function by the formula t=
* Plot s,c,t with respect to x
* Stop

**Program : hypersine.m,hypercoss.m,hypertann.m**

% Script file:hypersine.m,hypercoss.m,hypertann.m

% Purpose:To evaluate the hyperbolic sine,cos and tan of the function x

% Record of Revisions:

% Date Programmer Description

% 03/11/2015 Satyabrat Sahoo Original code

%Variables

%x=number whose hyperbolic sine,cos and tan to be calculated

function[c]=hypercos\_p(x)

c=(exp(x)+exp(-x))/2;

end

function[ s]= hypersin\_p( x )

s=(exp(x)-exp(-x))/2;

end

function [ t ] = hypertan\_p(x)

t=((exp(x)-exp(-x))./exp(x)+exp(-x))

end

**Program : test\_hyper.m**

% Script file:test\_hyper.m

% Purpose:To plot the graphs of the above function files

% Record of Revisions:

% Date Programmer Description

% 03/11/2015 satyabrat sahoo Original code

%Variables

%s=hypersin of x,c=hypercos of,x,t=hypertan of x

clc;close all;clear all

x=linspace(-1,1,100)

s=hypersin\_p(x)

c=hypercos\_p(x)

t=hypertan\_p(x)

plot(x,s,'g')

hold on;

plot(x,c,'b')

hold on;

plot(x,t,'r')

hold off;

**Test Results:**

1. 