# Assignment Number: 3.5

# Problem Statement:

The tangent is defined as tan θ=sin θ /cos θ. This expression can be evaluated to solve for the tangent as long as the magnitude of cos θ is not too near to zero. Assume that theta is given in degrees write the MATLAB statement to evaluate tan(theta) as long as the magnitude of

cos θ is greater than or equal to 10-20 . If the magnitude of cos θ is less than 10-20 ,write out an error message instead.

# Inputs:

Variable ‘theta’.

# Outputs:

The value of tan(theta)

# Pseudocode:

* Take a variable named ‘theta ’ .
* Evaluate tan(theta).
* Display the value of tan(theta).

# Program : ta\_eva.m

% Script File: ta\_eva

% Purpose: Evaluate tan(theta)

% Record of Revision:

% Akash jaiswal 15/09/2015 Original

% Variable declaration

% Input Variables

% theta—the value of theta

% Output Variable

% tantheta—the value of tan(theta)

%%

clc

clear all

close all

theta=input('Enter the value of theta: ');

%CONVERT IT INTO DEGREE

theta=theta\*pi/180;

x=sin(theta);

y=cos(theta);

if abs(4) >= 10^(-10)

tantheta=(x/y);

disp(['The value of tantheta is: ',num2str(tantheta)]);

else

disp('The magnitude of costheta is smaller');

end

# Test Result:

Enter the value of theta: 30

The value of tantheta is: 0.57735