// lab 5a Fall 2012

#define \_USE\_MATH\_DEFINES

#include <iostream>

#include <cmath>

using namespace std;

int main( )

{

double x = 0.0;

double y = 0.0;

double angle=0.0;

cout << "Enter x-coordinate: ";

if(!(cin >> x))

{

cout << "\nInvalid Input ";

return -1;

}

cout << "\nEnter y-coordinate: ";

if(!(cin >> y))

{

cout << "\nInvalid Input ";

return -1;

}

if ( x == 0 && y == 0 )

{

cout << "\n("<<x<<","<<y<<") is the origin"<<endl;



return 0;

}

else if ( x == 0 )

{

cout << "\n("<<x<<","<<y<<") is on the y-axis"<<endl;

if (y>0)



angle=90;

if (y<0)

angle=-90;

}

else if ( y == 0 )

{

cout << "\n("<<x<<","<<y<<") is on the x-axis"<<endl;



if (x>0)



angle=0;

if (x<0)

angle=180;

}

else

{

if ( x > 0 && y > 0 )

{

cout << "\n("<<x<<","<<y<<") in the first quadrant"<<endl;



angle = atan ( y / x ) / M\_PI \* 180;

}

else if ( x < 0 && y > 0 )

{

cout << "\n("<<x<<","<<y<<") in the second quadrant"<<endl;



angle = atan ( y / x ) / M\_PI \* 180 + 180;



}

else if ( x < 0 && y < 0 )

{

cout << "\n("<<x<<","<<y<<") in the third quadrant"<<endl;



angle = atan ( y / x ) / M\_PI \* 180 - 180;

}

else

{

cout << "\n("<<x<<","<<y<<") in the fourth quadrant"<<endl;

angle = atan ( y / x ) / M\_PI \* 180;

}

}

cout<<"\nThe angle of the radias vector is "<<angle<<endl;

return 0;

}

// Program: lab5b\_SOL.cpp

#include <iostream>

using namespace std;

int main( )

{

char fareClass;

int miles = 0;

int awardMiles = 0;

cout << "Enter the actual miles: ";

cin >> miles;

// Display menu

cout << "\n1. First";

cout << "\n2. Business";

cout << "\n3. Economy";

cout << "\n4. Discount Economy";

cout << "\n5. Other" << endl;

cout << "\nEnter the ticket fare class: ";

cin >> fareClass;

switch (fareClass)



{



case '1':



awardMiles = miles \* 1.5;



break;



case '2':

awardMiles = miles \* 1.25;



break;

case '3':

awardMiles = miles \* 1;

break;

case '4':

awardMiles = miles \* 0.5;



break;

case '5':

awardMiles = 0;

break;

default:



cout << fareClass << " is an invalid fare class. Program exiting." << endl;



return -1;

} // end of switch statement

cout << "\nYou have earned " << awardMiles << " miles."<<endl;

return 0;

}