**#include** <stdio.h>

**#include** <utilities.h>

**#include** "tasks.hpp"

**#include** "examples/examples.hpp"

**#include** "LPC17xx.h"

**#include** "FreeRTOS.h"

**#include** "uart0\_min.h"

**#include** "i2c2.hpp"

**#include** "lpc\_pwm.hpp"

**#include** "gpio.hpp"

**#include** "io.hpp"

**#include** "eint.h"

**#include** "soft\_timer.hpp"

**#include** "lpc\_sys.h"

//========================= PWM for MOTOR ===========================

GPIO Drive\_1(P1\_29);

GPIO Drive\_2(P1\_28);

GPIO Steer\_1(P1\_23);

GPIO Steer\_2(P1\_22);

PWM dc\_Motor(PWM::pwm1, 1000); //1 KHz

PWM servo\_Motor(PWM::pwm2, 1000); //1 KHz

**void** start\_motor(**void**){

//setting GPIO pin for acceleration as output

Drive\_1.setAsOutput();

Drive\_2.setAsOutput();

//setting GPIO pin for steering as output

Steer\_1.setAsOutput();

Steer\_2.setAsOutput();

}

**void** set\_speed\_motor(**int** dc\_motor, **int** servo\_motor){

dc\_Motor.set(dc\_motor);

servo\_Motor.set(servo\_motor);

}

**#define** FORWARD Drive\_1.setLow(), Drive\_2.setHigh() //setting for forward drive

**#define** REVERSE Drive\_1.setHigh(), Drive\_2.setLow() //setting for reverse drive

**#define** RIGHT Steer\_1.setHigh(), Steer\_2.setLow() //setting for right steer

**#define** LEFT Steer\_1.setLow(), Steer\_2.setHigh() //setting for left steer

//stopping

**#define** STOP Drive\_1.setLow(), Drive\_2.setLow(), Steer\_1.setLow(), Steer\_2.setLow()

int main(){

//here's the PWM driver testing for the car

start\_motor(); //initialize motor

set\_speed\_motor(80, 100); //dc\_motor = 80% & servo\_motor = 100%

**while**(1){

//Testing

FORWARD;

delay\_ms(2000);

LEFT;

delay\_ms(2000);

RIGHT;

delay\_ms(2000);

STOP;

delay\_ms(2000);

REVERSE;

delay\_ms(2000);

STOP;

delay\_ms(2000);

}

/\*

while(1){

//Testing each function of the car using on board switches

if(SW.getSwitch(1)){

FORWARD;

}

else if(SW.getSwitch(2)){

REVERSE;

}

else if(SW.getSwitch(3)){

RIGHT;

}

else if(SW.getSwitch(4)){

LEFT;

}

else{ //if no push buttons are pressed

STOP; } } \*/