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ENGR101 Assignment 5

Core 1:

```
# include < stdio .h >
# include < time .h >
# include " E101 .h "
int main (){

    init ();

    for(int i = 0; i<5; i++){
        write_digital(7,1);
        sleep1(1,100000);
        write_digital(7,0);
        sleep1(0,100000);
    }
}
```

Core 2:

```
# include < stdio .h >
# include < time .h >
# include " E101 .h "
int main (){

    init ();
    if(read_analog(1) > 300)
    {
        write_digital(7,1);
    }
    if(read_analog(1) < 300)
    {
        write_digital(7,0);
    }
}
```

Completion 1:

```
# include < stdio .h >
# include < time .h >
# include " E101 .h "

void switching(int dt){

    int time = 0;
    while (time < dt){
        write_digital(7,1);
        sleep1(0,200);
        write_digital(7,0);
        sleep1(0,200);
        time = time + 400;
    }
}

int main (){
    init();
    switching(10000000); // 10 seconds of 50% duty cycle
}
```

Challenge 1:

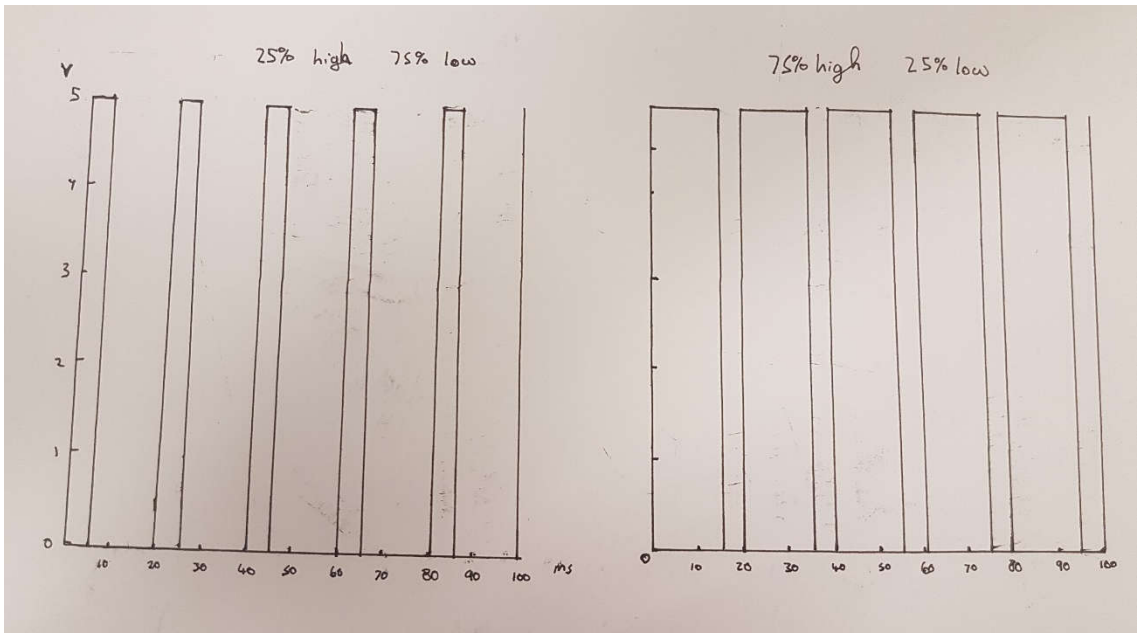
```
# include < stdio .h >
# include < time .h >
# include " E101 .h "

void switching(){

    int speed = 100000;
    while (true){
       printf( “current speed is” %f\n,speed);
        write_digital(7,1);
        sleep1(0,speed);
        write_digital(7,0);
        sleep1(0,speed);
        speed = speed - 200;
        if(speed <=100){
            speed = 100;
        }
    }
}

int main (){
    init();
    switching();
}
```

Core 3:



Core 4:

```
int main (){
    init();

    set_motor(1,127);
    set_motor(2,127);
    sleep1(1,0);
    stop(1);
    stop(2);
    return 0;
}
```

Completion 2:

```
void turn_left(int angle){
    //assuming that motor 1 is on the left side
    set_motor(1,-127);
    set_motor(2,127);
    sleep1(0,angle);
}
```

Core 5:

```
set_motor (1 ,102);  PWM is 40%  (motor is on 40% of the time)

set_motor (1, 153);   PWM is 60%  (motor is on 60% of the time)
```

Challenge 2:

```
int main (){
    init();
    sensor_motor(read_analog(0));
    }

}

void sensor_motor(int speed){
    if (speed > 200){
        set_motor(1, -100 -(speed/10));
        set_motor(2, -100 -(speed/10));
    }
    else{
        set_motor(1, 100 + speed/5;
        set_motor(2, 100 +speed/5));
    }
}
```