Control of 3 phase BLDC motor using sine PWM

Closed Loop V/f Control method:
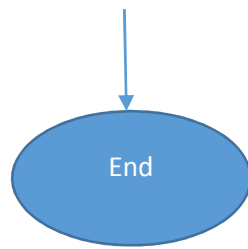
```
        ┌──────────────┐
        │    Start     │
        └──────┬───────┘
               │
               ▼
        ┌──────────────┐
        │ Set Minimum  │
        │Frequency = 5Hz│
        └──────┬───────┘
               │
               ▼
        ┌──────────────┐◄────┐
        │   While(1)   │     │
        └──────┬───────┘─────┘
               │
               ▼
           ╭────────╮
           │  End   │
           ╰────────╯
```
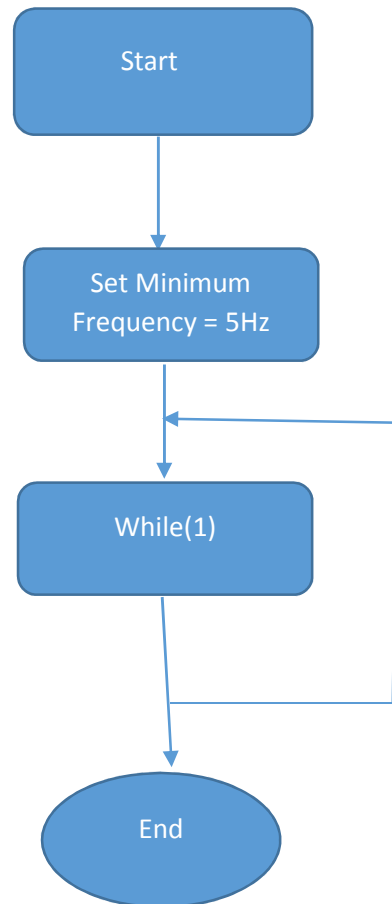
PWM interrupt

Settings: 20Khz

```
        ╭────────╮
        │ Start  │
        ╰───┬────╯
            │
            ▼
```
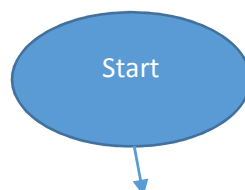
1, Read New Frequency Value.

2, Access the Phase 1 Sine look up table based on Frequency into variable sine1.

3, Access the Phase2 Sine look up table 120 degrees w.r.t Phase 1 into variable sine2

4, Access the Phase3 Sine look up table value 120 degrees w.r.t Phase 2 into variable sine3

5, multiply sine1 with frequency = Duty_phase1

6, multiply sine2 with frequency = Duty_Phase2

7, multiply sine3 with frequency = Duty_Phase3

8, Load Duty_phase1, duty_phase2, duty_phase3 into pdc1, pdc2, pdc3.

End

Input Capture Speed Measurement

Start

1, Read Hall A two samples

2. Calculate the RPM

3. Calculate Frequency = number of poles * RPM / 120.

Update Frequency

End