**Date Submitted: 10/16/18**

**------------------------------------------------------------------------------------**

**Task 01:**

Youtube Link: N/A

**Modified Code:**

**// Insert code here**

**#include** <stdint.h>

**#include** <stdbool.h>

**#include** <math.h>

**#include** "inc/hw\_memmap.h"

**#include** "inc/hw\_types.h"

**#include** "driverlib/fpu.h"

**#include** "driverlib/sysctl.h"

// enable API access for ROM functions

**#define** TARGET\_IS\_BLIZZARD\_RB1

**#include** "driverlib/rom.h"

// definition of PI

**#ifndef** M\_PI

**#define** M\_PI 3.14159265358979323846

**#endif**

**#define** SERIES\_LENGTH 100 // float array size for gSeriesData

**float** gSeriesData[SERIES\_LENGTH]; // array for calculate float values

int32\_t i32DataCount = 0; // computation loop counter (0 initially)

/\* Main Function \*/

**int** **main**(**void**)

{

**float** fRadians; // angle in a circle used to calculate sine

/\* FPU Initialization \*/

ROM\_FPULazyStackingEnable(); // turn on lazy stacking

ROM\_FPUEnable(); // turn on FPU

/\* CPU Clock SETUP - 50 MHz \*/

ROM\_SysCtlClockSet(SYSCTL\_SYSDIV\_4 | SYSCTL\_USE\_PLL | SYSCTL\_XTAL\_16MHZ | SYSCTL\_OSC\_MAIN);

fRadians = ((2 \* M\_PI) / SERIES\_LENGTH); // calculate angle as segment of circle

// go through 100 angles in the circle

**while**(i32DataCount < SERIES\_LENGTH)

{

// store sine values onto array

gSeriesData[i32DataCount] = sinf(fRadians \* i32DataCount);

// increment counter

i32DataCount++;

}

**while**(1)

{

}

}

**------------------------------------------------------------------------------------**

**Task 02:**

Youtube Link: N/A

**Modified Code:**

**#include** <stdint.h>

**#include** <stdbool.h>

**#include** <math.h>

**#include** "inc/hw\_memmap.h"

**#include** "inc/hw\_types.h"

**#include** "driverlib/fpu.h"

**#include** "driverlib/sysctl.h"

**#include** "driverlib/rom.h"

**#ifndef** M\_PI

**#define** M\_PI 3.14159265358979323846

**#endif**

**#define** SERIES\_LENGTH 1000

**float** gSeriesData[SERIES\_LENGTH];

int32\_t i32DataCount = 0;

**int** **main**(**void**)

{

**float** fRadians; // angle in a circle used to calculate sine

/\* FPU Initialization \*/

ROM\_FPULazyStackingEnable(); // turn on lazy stacking

ROM\_FPUEnable(); // turn on FPU

/\* CPU Clock SETUP - 50 MHz \*/

ROM\_SysCtlClockSet(SYSCTL\_SYSDIV\_4 | SYSCTL\_USE\_PLL | SYSCTL\_XTAL\_16MHZ | SYSCTL\_OSC\_MAIN);

// go through 1000 angles in the circle

**while**(i32DataCount < SERIES\_LENGTH)

{

// store sine values onto array

gSeriesData[i32DataCount] = 1.0 \* **sinf**(2\*M\_PI\*50 \* i32DataCount) + 0.5 \* **cosf**(2.0 \* M\_PI\*200 \* i32DataCount);

// change from sin() to 1.0\*sin(2pi50t) + 0.5\*cos(2pi200t)

// increment counter

i32DataCount++;

}

**while**(1)

{

}

}

