**Date Submitted: 10/20/19**

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**Task 01:**

Youtube Link: None

**Modified Schematic (if applicable): N/A**

**Modified Code:**

**#include <stdint.h>**

**#include <stdbool.h>**

**#include <stdlib.h>**

**#include <math.h>**

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

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

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

**#include "driverlib/pin\_map.h"**

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

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

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

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

**#ifndef M\_PI**

**#define M\_PI 3.14159265358979323846**

**#endif**

**#define SERIES\_LENGTH 100**

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

**int32\_t i32DataCount = 0; //Counter for sine wave**

**int main(void)**

**{**

**float fRadians;**

**//Enable Lazy Stack**

**ROM\_FPULazyStackingEnable();**

**//Turn on FPU**

**ROM\_FPUEnable();**

**//Set Clock to 50MHz**

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

**//(2pi rads)/ 100 to get full cycle of sine wave**

**fRadians = ((2 \* M\_PI) / SERIES\_LENGTH);**

**//loop until sine wave is calculated**

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

**{**

**gSeriesData[i32DataCount] = sinf(fRadians \* i32DataCount); //calculate sine wave values**

**i32DataCount++; //get next data value**

**}**

**while(1)**

**{**

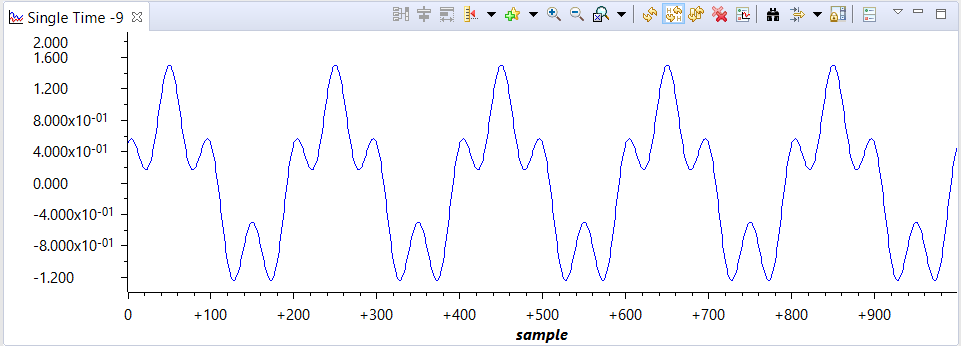
**//loop continuously**

**}**

**}**

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**Task 02:**

Youtube Link: None

**Modified Schematic (if applicable): N/A**

**Modified Code:**

**#include <stdint.h>**

**#include <stdbool.h>**

**#include <stdlib.h>**

**#include <math.h>**

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

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

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

**#include "driverlib/pin\_map.h"**

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

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

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

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

**#ifndef M\_PI**

**#define M\_PI 3.14159265358979323846**

**#endif**

**#define SERIES\_LENGTH 200**

**float gSeriesData[SERIES\_LENGTH\*5]; //Define array for sine values**

**int32\_t i32DataCount = 0; //Counter for sine wave**

**int main(void)**

**{**

**float fRadians;**

**//Enable Lazy Stack**

**ROM\_FPULazyStackingEnable();**

**//Turn on FPU**

**ROM\_FPUEnable();**

**//Set Clock to 50MHz**

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

**fRadians = ((2 \* M\_PI) / SERIES\_LENGTH);**

**//loop until sine wave is calculated**

**while(i32DataCount < SERIES\_LENGTH\*5)**

**{**

**gSeriesData[i32DataCount] = sinf(fRadians \* i32DataCount) + .5 \* cosf(fRadians \* 4 \* i32DataCount); //calculate values**

**i32DataCount++;**

**}**

**while(1)**

**{**

**//loop continuously**

**}**

**}**

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