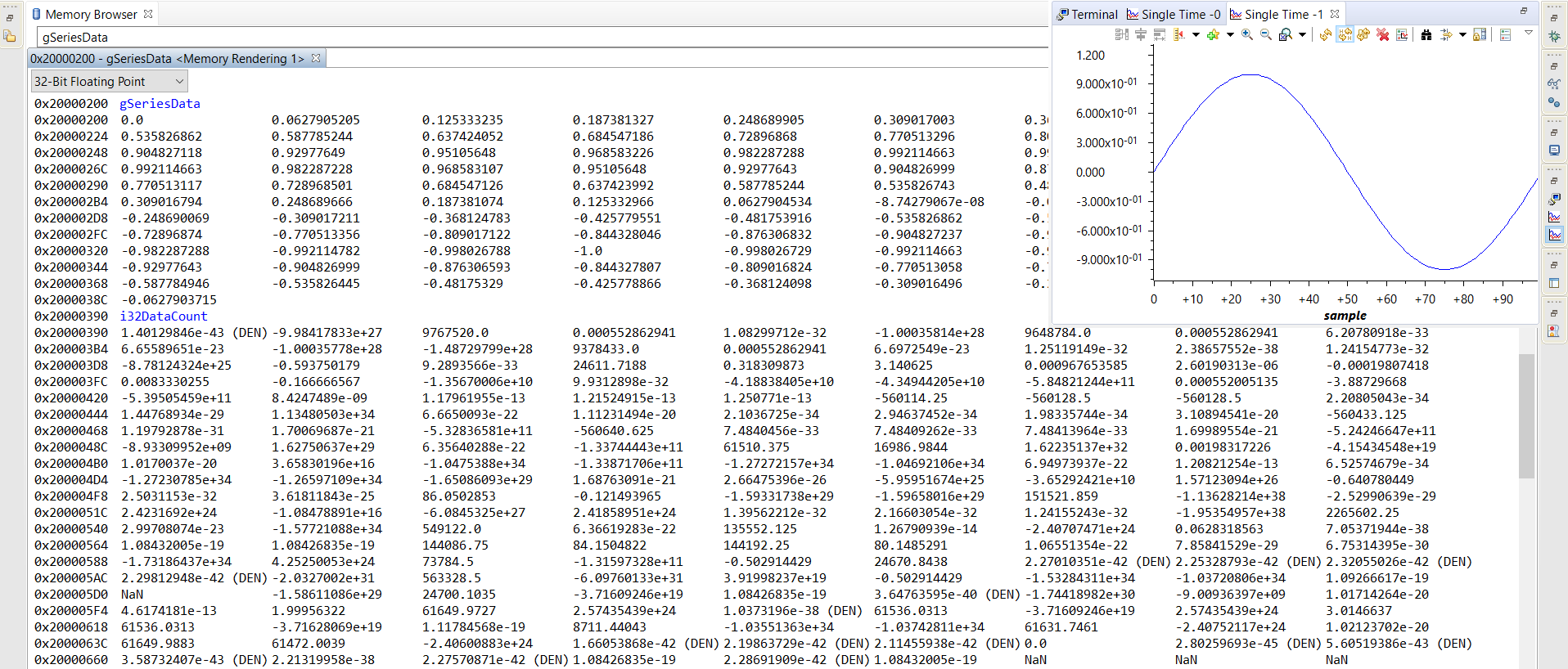
**Date Submitted: 11/30/19**

**Task 01:**

Youtube Link: N/A



**Modified Code:**

**#include <stdint.h>**

**#include <stdbool.h>**

**#include <math.h> //uses sinf() function**

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

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

**#include "driverlib/fpu.h" //support for Floating Point Unit**

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

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

**#ifndef M\_PI //defines M\_PI**

**#define M\_PI 3.14159265358979323846**

**#endif**

**#define SERIES\_LENGTH 100 //creates depth of data buffer**

**float gSeriesData[SERIES\_LENGTH]; //creates an array of floats SERIES\_LENGTH long**

**int32\_t i32DataCount = 0; //computation loop counter**

**int main(void)**

**{**

**float fRadians; //used to calculate sine**

**ROM\_FPULazyStackingEnable(); //turn on Lazy Stacking**

**ROM\_FPUEnable(); //turn on FPU, from reset it is off**

**//set up system clock to 50MHz**

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

**fRadians = ((2 \* M\_PI) / SERIES\_LENGTH); //creates full sine wave cycle**

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

**{**

**//loop to calculate the sine value for each**

**//of the 100 values of the angle**

**//then places them in the array**

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

**i32DataCount++; //add to array count**

**}**

**while(1)**

**{**

**}**

**}**

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

**Task 02:**

Youtube Link: https://youtu.be/iGIinh2atBs

**Modified Code:**

**#include <stdint.h>**

**#include <stdbool.h>**

**#include <math.h> //uses sinf() function**

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

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

**#include "driverlib/fpu.h" //support for Floating Point Unit**

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

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

**#ifndef M\_PI //defines M\_PI**

**#define M\_PI 3.14159265358979323846**

**#endif**

**#define SERIES\_LENGTH 100 //creates depth of data buffer**

**float gSeriesData[SERIES\_LENGTH]; //creates an array of floats SERIES\_LENGTH long**

**int32\_t i32DataCount = 0; //computation loop counter**

**int main(void)**

**{**

**float fRadians\_one; //used to calculate sine at 50t**

**float fRadians\_two; //used to calculate sine at 200t**

**FPULazyStackingEnable(); //turn on Lazy Stacking**

**FPUEnable(); //turn on FPU, from reset it is off**

**//set up system clock to 50MHz**

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

**fRadians\_one = ((2 \* M\_PI\*50) / SERIES\_LENGTH); // First pi**

**fRadians\_two = ((2 \* M\_PI\*200) / SERIES\_LENGTH); // second pi**

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

**{**

**//loop to calculate the sine value for each**

**//of the 100 values of the angle**

**//then places them in the array**

**gSeriesData[i32DataCount] = 1.0\*sinf(fRadians\_one \* i32DataCount) + (0.5\*(cosf(fRadians\_two \* i32DataCount)));**

**//calculation**

**i32DataCount++; //add to array count**

**}**

**while(1)**

**{**

**}**

**}**