CENG 216 – NUMERICAL COMPUTATION
Homework 3

05 June 2020

Due Date: 15 June 2020

Exercise 1 Binary Representation of Real Numbers

Write a C program "`mt_q1.c`" that prints the solution to the Midterm Q1 for your student id. For Part **1.ii**, print enough bits to decide how to round for Part **1.iii**. You have to do the conversion computation using integer arithmetic: Instead of multiplying X by 2.0 and checking less or greater than 1.0, first multiply X by 1000 to turn the number into an integer. Then multiply by 2 and check less or greater than 1000. If you do not use integer arithmetic your result will be corrupted by rounding errors. Your solutions must work with any student id, see the note at the end.

Exercise 2 Solving 3×3 Systems

Write a C program "`mt_q3.c`" that prints the solution to the Midterm Q3 for your student id. Do not use PA=LU, the question asks for LU. Your solutions must work with any student id, see the note at the end.

Exercise 3 Interpolation

Write a C program "`mt_q4.c`" that prints the solution to the Midterm Q4 for your student id. It should print a warning if the solution to Part **4.ii** requires a division by zero (the points have repeating x coordinates). Your solutions must work with any student id, see the note at the end..

Note: You can find the midterm questions on the CMS. Print solutions to all parts of the midterm questions. Your solutions must work with any student id, meaning that **you can not write only print statements outputting the hard-coded result, your code must first compute the result and then print it, but you can hard-code your student id (you do not need to ask it from the user)**. You may submit the source code for this homework, you do not need to type anything by hand. Please direct all submission and grading related questions to the assistants.