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26th Feb ’09 – Thursday.

CS 240 – Ada Programming Language – Notes.

**Mid-Term Exam: Thursday, 5th March ’09 – IN CLASS**

**Program Fraction.**

Many different ways for the “Reduce Function”

I. Running through numbers/integers 1 to 9.

2 – ends with 2, 4, 6, 8, 0

4 – 2\*2

5 – ends with 5, 0

6 – multiple of 2 and 3.

9 – sum of the numbers equals 9.

II. Square Roots.

**Test Program in Class.**

testMyV1.adb

Review

1. Function can return an array
2. Initialization and declaration of an array with position.
3. We can use constant as a parameter.
4. Learnt how to utilize the mod function

Notes

function myV1

**LOOP notes.**

-- loop until our test value squared is greater ‘>’ than number.

-- gcd of two numbers might be one of the numbers therefore loop from (2..number).

**Should know.**

Big O

0(1) – constant time

0(n) – linear time

for index in 1..n loop

end loop

0(n2) – quadratic time OR exponential time

for index in 1..n loop

 for index2 in 1..n loop

end loop, end loop;

(example of nested loop)

**Order of Magnitude**

Find more notes in textbook page 318 to **page 320**.

**FOR LOOP**

the i in a food loop is the loop control variable program cannot assign or change the value of i . ( talking about the local i in a loop example : for i in 1..10 loop).

And when you exit the loop value of i isn’t available.

**SquareRoot.adb**

-– file on blackboard but has off by one error either too big or too small

**GCD algorithm**

-- loop up gcd algorithm on wiki and write code.

**HOMEWORK & ASSIGNEMNT FOR TUESDAY:
WRITE TEST PROGRAM FOR FRACTION.**

**testProgram for Fraction**

-- import body and spec fraction

with fraction;

-- makes output easier by skipping millions of lines of codes.

with fraction\_io;

-- for Boolean enumaration import package.

-- code for fractions

fracOne, fracTwo, fracThree : fractions.fraction;

-- use…

fractions\_io.(procedure/function) – call.

**Exceptions in Fraction.adb BODY**

zeroDenom : exception

declare (fraction body)🡪 raise (fraction body with if else) 🡪 handle ( in test program)