**EGN3204 — Engineering Software Tools**

**Pensacola (82151) Section, Fall 2014**

**Problem Set #10 (November 6, 2014 Lecture)**

**(Word, Matlab R2013a)**

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1. The matlab code for problems 1 is given in Figure 1 and the output for problems 1 is given in Figure 2.

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% MATLAB m file for problem 1, Project 11

clear all

clear console

logic = 0;

while logic == 0

prompt = '\nInput an x value: ';

x = input(prompt);

prompt = 'Input an n value: ';

n = input(prompt);

if -1 <= x && 1 > x

if n >= 1 && rem(n,1) == 0

logic = 1;

end

else

fprintf('Plese enter valid numbers\n');

end

end

x1 = x;

x = 0;

for logic = 1:n

x = (x1^logic)/(logic) + x;

end

output = ['The estimated result is ',num2str(x)...

,'and the actual result is ', num2str(log(1/(1-x1)))];

disp(output)

y = x;

**Figure 1.** The matlab m file for problem 1.

Input an x value: -0.87

Input an n value: 15

The estimated result is -0.62964and the actual result is -0.62594

Input an x value: -0.87

Input an n value: 30

The estimated result is -0.6257and the actual result is -0.62594

Input an x value: -0.87

Input an n value: 50

The estimated result is -0.62593and the actual result is -0.62594

Input an x value: 0.25

Input an n value: 15

The estimated result is 0.28768and the actual result is 0.28768

Input an x value: 0.25

Input an n value: 30

The estimated result is 0.28768and the actual result is 0.28768

Input an x value: 0.25

Input an n value: 50

The estimated result is 0.28768and the actual result is 0.28768

Input an x value: 0.98

Input an n value: 15

The estimated result is 3.0381and the actual result is 3.912

Input an x value: 0.98

Input an n value: 30

The estimated result is 3.4722and the actual result is 3.912

Input an x value: 0.98

Input an n value: 50

The estimated result is 3.6999and the actual result is 3.912

**Figure 2.** The selected outputs for problem 1.

2. The matlab code for problem 2 is given in Figure 3, and the function called in the problem is given in Figure 4. The selected outputs for the problem are given in Figure 5.

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% MATLAB m file for problem 2, Project 11

clear all

clear console

amount = input('Input amount of US $');

type = input('Currency to change: ','s');

newamount = currency\_convert(amount,type);

**Figure 3.** the matlab m file for problem 2.

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% MATLAB m file for problem 2, Project 11

function z = currency\_convert(x,y)

if strcmp('euro', y) == 1

newx = x \* 0.791948;

fprintf('$%0.2f is equivalent to €%0.2f'...

,x,newx);

end

if strcmp('pound', y) == 1

newx = x \* 0.622259;

fprintf('$%0.2f is equivalent to £%.02f'...

,x,newx);

end

if strcmp('yen', y) == 1

newx = x \* 107.551;

fprintf('$%0.2f is equivalent to ¥%0.2f'...

,x,newx);

end

z = newx;

end

**Figure 4.** The function called in Figure 3.

Input amount of US $47.56

Currency to change: yen

$47.56 is equivalent to ¥5115.13

Input amount of US $138.24

Currency to change: euro

$138.24 is equivalent to €109.48

Input amount of US $91.68

Currency to change: pound

$91.68 is equivalent to £57.05

**Figure 5.** The selected outputs for problem 2.