%% erlang part 1 and 2

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%% erlang project for assignment 3 CECS 424

-module(easy).

-export([add/2, newturn/1, game\_m/4, game\_start/5, func\_one/1, func\_two/2, func\_three/1, func\_four/1]).

%%start of part 1

add(X, Y) ->

**if**

((X **div** 2 + Y **div** 2) **rem** 2) =:= 0 ->

trunc(X **div** 2 + Y **div** 2);

true ->

trunc(X **div** 2 + Y **div** 2 + 1)

**end**.

newturn(Turn) ->

Turn - 1.

%% recursive call

game\_start(\_,\_,\_,Turn,\_) **when** Turn =:= 0 -> true;

game\_start(A,B,C,\_,\_) **when** A =:= B, B =:= C -> true;

game\_start(A,B,C,Turn,MyCons) ->

io:format(" turn **~w** A has **~w** candy B has **~w** candy C has **~w** candy **~n**",[1+MyCons-Turn,add(A, C),add(B, A),add(C, B)]),

game\_start(add(A, C),add(B, A),add(C, B),newturn(Turn),MyCons).

%% main

game\_m(A,B,C,Turn) ->

MyCons = Turn,

game\_start(A,B,C,Turn,MyCons).

%% end of part 1

%% start of part 2

func\_one(Filename) ->

{ok, S} = file:open(Filename, read),

L1 = io:get\_line(S, ''),

L2 = string:to\_lower(L1),

L3 = string:tokens(L2, " "),

L3.

func\_two(StringWord, ListofTuple) ->

Temptuple = lists:keyfind(StringWord, 1, ListofTuple),

**if**

%% we don't find any %%

Temptuple =:= false ->

lists:append([ListofTuple, [{StringWord, 1}]]);

%ListofTuple:append(StringWord, 1);

%% we found it %%

true ->

lists:keyreplace(StringWord, 1, ListofTuple, {StringWord,element(2,Temptuple)+1})

**end**.

func\_three(ListofWord) ->

ListofTuple = lists:foldl(**fun**(X, Sum)->func\_two(X, Sum)**end**, [], ListofWord),

ListofTuple.

%% file name is "C:\\Users\\SuperAdmin\\Desktop\\erproject\\assign3-part2.txt"%%

func\_four(Filename) ->

List1 = func\_three(func\_one(Filename)),

SortedList = lists:sort(List1),

SortedList.

%% end of part 2

Part 1 output 1:

**(ErlangProject@PC)1>** cd("C://Users//SuperAdmin//Desktop//erproject//ErlangProject//src//").

C:/Users/SuperAdmin/Desktop/erproject/ErlangProject/src

ok

(ErlangProject@PC)2> c(easy).

{ok,easy}

(ErlangProject@PC)3> easy:game\_m(50000, 80000, 100000, 10000).

turn 1 A has 75000 candy B has 65000 candy C has 90000 candy

turn 2 A has 82500 candy B has 70000 candy C has 77500 candy

turn 3 A has 80000 candy B has 76250 candy C has 73750 candy

turn 4 A has 76876 candy B has 78126 candy C has 75000 candy

turn 5 A has 75938 candy B has 77502 candy C has 76564 candy

turn 6 A has 76252 candy B has 76720 candy C has 77034 candy

turn 7 A has 76644 candy B has 76486 candy C has 76878 candy

turn 8 A has 76762 candy B has 76566 candy C has 76682 candy

turn 9 A has 76722 candy B has 76664 candy C has 76624 candy

turn 10 A has 76674 candy B has 76694 candy C has 76644 candy

turn 11 A has 76660 candy B has 76684 candy C has 76670 candy

turn 12 A has 76666 candy B has 76672 candy C has 76678 candy

turn 13 A has 76672 candy B has 76670 candy C has 76676 candy

turn 14 A has 76674 candy B has 76672 candy C has 76674 candy

turn 15 A has 76674 candy B has 76674 candy C has 76674 candy

true

(ErlangProject@PC)4> easy:game\_m(10000000, 50000000, 60000000, 500000).

turn 1 A has 35000000 candy B has 30000000 candy C has 55000000 candy

turn 2 A has 45000000 candy B has 32500000 candy C has 42500000 candy

turn 3 A has 43750000 candy B has 38750000 candy C has 37500000 candy

turn 4 A has 40625000 candy B has 41250000 candy C has 38125000 candy

turn 5 A has 39375000 candy B has 40937500 candy C has 39687500 candy

turn 6 A has 39531250 candy B has 40156250 candy C has 40312500 candy

turn 7 A has 39921876 candy B has 39843750 candy C has 40234376 candy

turn 8 A has 40078126 candy B has 39882814 candy C has 40039064 candy

turn 9 A has 40058596 candy B has 39980470 candy C has 39960940 candy

turn 10 A has 40009768 candy B has 40019534 candy C has 39970706 candy

turn 11 A has 39990238 candy B has 40014652 candy C has 39995120 candy

turn 12 A has 39992680 candy B has 40002446 candy C has 40004886 candy

turn 13 A has 39998784 candy B has 39997564 candy C has 40003666 candy

turn 14 A has 40001226 candy B has 39998174 candy C has 40000616 candy

turn 15 A has 40000922 candy B has 39999700 candy C has 39999396 candy

turn 16 A has 40000160 candy B has 40000312 candy C has 39999548 candy

turn 17 A has 39999854 candy B has 40000236 candy C has 39999930 candy

turn 18 A has 39999892 candy B has 40000046 candy C has 40000084 candy

turn 19 A has 39999988 candy B has 39999970 candy C has 40000066 candy

turn 20 A has 40000028 candy B has 39999980 candy C has 40000018 candy

turn 21 A has 40000024 candy B has 40000004 candy C has 40000000 candy

turn 22 A has 40000012 candy B has 40000014 candy C has 40000002 candy

turn 23 A has 40000008 candy B has 40000014 candy C has 40000008 candy

turn 24 A has 40000008 candy B has 40000012 candy C has 40000012 candy

turn 25 A has 40000010 candy B has 40000010 candy C has 40000012 candy

turn 26 A has 40000012 candy B has 40000010 candy C has 40000012 candy

turn 27 A has 40000012 candy B has 40000012 candy C has 40000012 candy

true

(ErlangProject@PC)5> easy:func\_four("C:\\Users\\SuperAdmin\\Desktop\\erproject\\assign3-part2.txt").

[{"\"fruitcake\"",1},

{"(array",1},

{"-1,",1},

{"0,",1},

{"1",1},

{"<,",1},

{"<=>",3},

{">,",1},

{"a",7},

{"always",1},

{"an",1},

{"and",1},

{"array",1},

{"as",1},

{"attribute.",2},

{"based",1},

{"built-in",1},

{"can",1},

{"class",2},

{"code.",1},

{"comparable",1},

{"compare",2},

{"comparing",1},

{"comparison",1},

{"contrast",1},

{"depending",1},

{"do",1},

{[...],...},

{...}|...]

(ErlangProject@PC)6>