package ergasiadiktya;

import ithakimodem.\*;

import java.io.FileOutputStream;

import java.io.IOException;

import java.io.PrintWriter;

public class main {

public static void main(String[] args) throws IOException {

String R = "R=1000091\r";

String echo = "E2205\r"; //Echo request code

String imageerrorfree = "M3837\r"; //Image request code error free

String imagewitherros = "G7236\r"; //Image request code with errors

String gps = "P2552" ; //GPS request code

String ack = "Q3793\r";

String nack = "R2692\r";

String gps1 = gps;

gps = gps + R;

int k;

Modem modem = new Modem();

modem.setSpeed(90000);

modem.setTimeout(2000);

modem.open("ithaki");

for (;;) {

try {

k=modem.read();

if (k==-1) break;

System.out.print((char)k);

}

catch (Exception x) {

break;

}

}

System.out.println(" ");

// echo start

PrintWriter writer = new PrintWriter("C:/Users/lekam/Desktop/ergasia ithaki/echo.txt");

long echotime =0;

int echocounter=0;

while(echotime < 420000) {

long time = System.currentTimeMillis();

modem.write(echo.getBytes());

echocounter+=1;

for (;;) {

try {

k=modem.read();

if (k==-1) break;

System.out.print((char)k);

}

catch (Exception x) {

break;

}

}

long t = System.currentTimeMillis() - time;

echotime += t ;

System.out.println(" " + t );

writer.println("Echotime No"+echocounter +" : "+t);

}

writer.print(echotime);

writer.close();

// echo finish

System.out.println(" ");

//image error free start

try(FileOutputStream image1 = new FileOutputStream("C:/Users/lekam/Desktop/ergasia ithaki/image1.jpeg")){

modem.write(imageerrorfree.getBytes());

for (;;) {

try {

k=modem.read();

image1.write(k);

if (k==-1) break;

}

catch (Exception x) {

break;

}

}

image1.flush();

image1.close();

}

System.out.println("Image error free.");

//image error free finish

System.out.println(" ");

//image with errors start

try(FileOutputStream image2 = new FileOutputStream("C:/Users/lekam/Desktop/ergasia ithaki/image2.jpeg")){

modem.write(imagewitherros.getBytes());

for (;;) {

try {

k=modem.read();

image2.write(k);

if (k==-1) break;

//System.out.print((char)k);

}

catch (Exception x) {

break;

}

}

image2.flush();

image2.close();

}

System.out.print("Image with errors.");

//image with errors finish

System.out.println(" ");

//GPS start

String dd = "";

String ee = "";

String zz = "";

String aa = "";

String bb = "";

String cc = "";

String T1 = "";

String T2 = "";

String T3 = "";

String T4 = "";

String trace = "" ;

int counter1 = 0;

int bit=0;

modem.write(gps.getBytes());

for (;;) {

try {

k=modem.read();

if (k==-1) break;

System.out.print((char)k);

}

catch (Exception x) {

break;

}

if((char)k=='$') {

counter1 += 1;

bit = 0;

}

if(counter1 == 1) {

bit += 1;

if(bit == 19 || bit == 20) {

dd = dd + (k-48);

}

if(bit == 21 || bit == 22) {

ee = ee + (k-48);

}

if(bit == 24|| bit == 25 || bit == 26 || bit == 27) {

zz = zz + (k-48);

}

if(bit == 27) {

int o = Integer.parseInt(zz)\*60;

zz = String.valueOf(o);

zz = zz.substring(0,2);

}

if(bit == 32 || bit == 33) {

aa = aa + (k-48);

}

if(bit == 34 || bit== 35) {

bb = bb + (k-48);

}

if(bit == 37 || bit == 38 || bit == 39 || bit == 40) {

cc = cc + (k-48);

}

if(bit == 40) {

int o = Integer.parseInt(cc)\*60;

cc = String.valueOf(o);

cc = cc.substring(0,2);

T1 = gps1 + "T=" + aa + bb + cc + dd + ee + zz;

dd="";

ee="";

zz="";

aa="";

bb="";

cc="";

}

}

if(counter1 == 30) {

bit += 1;

if(bit == 19 || bit == 20) {

dd = dd + (k-48);

}

if(bit == 21 || bit == 22) {

ee = ee + (k-48);

}

if(bit == 24|| bit == 25 || bit == 26 || bit == 27) {

zz = zz + (k-48);

}

if(bit == 27) {

int o = Integer.parseInt(zz)\*60;

zz = String.valueOf(o);

zz = zz.substring(0,2);

}

if(bit == 32 || bit == 33) {

aa = aa + (k-48);

}

if(bit == 34 || bit == 35) {

bb = bb + (k-48);

}

if(bit == 37 || bit == 38 || bit == 39 || bit == 40) {

cc = cc + (k-48);

}

if(bit == 40) {

int o = Integer.parseInt(cc)\*60;

cc = String.valueOf(o);

cc = cc.substring(0,2);

T2 = "T=" + aa + bb + cc + dd + ee + zz ;

dd="";

ee="";

zz="";

aa="";

bb="";

cc="";

}

}

if(counter1 == 60) {

bit += 1;

if(bit == 19 || bit == 20) {

dd = dd + (k-48);

}

if(bit == 21 || bit == 22) {

ee = ee + (k-48);

}

if(bit == 24|| bit == 25 || bit == 26 || bit == 27) {

zz = zz + (k-48);

}

if(bit == 27) {

int o = Integer.parseInt(zz)\*60;

zz = String.valueOf(o);

zz = zz.substring(0,2);

}

if(bit == 32 || bit == 33) {

aa = aa + (k-48);

}

if(bit == 34 || bit == 35) {

bb = bb + (k-48);

}

if(bit == 37 || bit == 38 || bit == 39 || bit == 40) {

cc = cc + (k-48);

}

if(bit == 40) {

int o = Integer.parseInt(cc)\*60;

cc = String.valueOf(o);

cc = cc.substring(0,2);

T3 = "T=" + aa + bb + cc + dd + ee + zz ;

dd="";

ee="";

zz="";

aa="";

bb="";

cc="";

}

}

if(counter1 == 90) {

bit += 1;

if(bit == 19 || bit == 20) {

dd = dd + (k-48);

}

if(bit == 21 || bit == 22) {

ee = ee + (k-48);

}

if(bit == 24|| bit == 25 || bit == 26 || bit == 27) {

zz = zz + (k-48);

}

if(bit == 27) {

int o = Integer.parseInt(zz)\*60;

zz = String.valueOf(o);

zz = zz.substring(0,2);

}

if(bit == 32 || bit == 33) {

aa = aa + (k-48);

}

if(bit == 34 || bit == 35) {

bb = bb + (k-48);

}

if(bit == 37 || bit == 38 || bit == 39 || bit == 40) {

cc = cc + (k-48);

}

if(bit == 40) {

int o = Integer.parseInt(cc)\*60;

cc = String.valueOf(o);

cc = cc.substring(0,2);

T4 = "T=" + aa + bb + cc + dd + ee + zz +"\r";

dd="";

ee="";

zz="";

aa="";

bb="";

cc="";

}

}

}

trace = T1 + T2 + T3 + T4;

System.out.println(trace);

modem.write(trace.getBytes());

try(FileOutputStream traceimage = new FileOutputStream("C:/Users/lekam/Desktop/ergasia ithaki/trace.jpeg")){

for (;;) {

try {

k=modem.read();

traceimage.write(k);

if (k==-1) break;

}

catch (Exception x) {

break;

}

}

traceimage.flush();

traceimage.close();

}

//gps finish

System.out.println(" ");

//ARQ start

int numofpacket=0;

PrintWriter writer1 = new PrintWriter("C:/Users/lekam/Desktop/ergasia ithaki/arq.txt");

long arqtime = 0;

long packet\_time = 0;

String arq = ack;

int counter = 0;

while (arqtime<240000 || arq == nack) {

long time = System.currentTimeMillis();

int fcs = 1;

int xor = 0;

modem.write(arq.getBytes());

counter +=1;

int f = 0;

int c = 0;

int s = 0;

int bitcounter = 0;

for (;;) {

try {

bitcounter+=1;

k=modem.read();

if (k==-1) break;

System.out.print((char)k);

if (bitcounter==32) xor=k;

if (bitcounter>32 && bitcounter<=47) {

xor = k ^ xor;

}

if (bitcounter==50) f=k-48;

if (bitcounter==51) c=k-48;

if (bitcounter==52) s=k-48;

}

catch (Exception x) {

break;

}

}

fcs = f\*100+c\*10+s;

System.out.print("\n");

System.out.println(xor);

System.out.println(fcs);

System.out.println(xor==fcs);

if (xor != fcs) {

packet\_time +=System.currentTimeMillis()-time;

arq = nack;

arqtime += System.currentTimeMillis()-time;

}

if (xor == fcs) {

numofpacket+=1;

packet\_time +=System.currentTimeMillis()-time;

System.out.println(packet\_time);

writer1.print("Packet No" + numofpacket + ": \n" );

writer1.print(" Packet time : ");

writer1.println(packet\_time);

writer1.print(" Sent times : ");

writer1.println(counter+"\n");

packet\_time = 0;

arqtime += System.currentTimeMillis()-time;

arq = ack;

System.out.println(counter);

counter = 0;

}

System.out.println(arqtime);

System.out.println(" ");

}

writer1.println("\n\n Total time : "+ arqtime);

writer1.close();

//ARQ finish

modem.close();

}

}