

Class README.TXT

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This is the project README file. Here, you should describe your project. Tell the reader (someone who does not know anything about this project) all he/she needs to know. The comments should usually include at least:

PROJECT TITLE: Number Converter

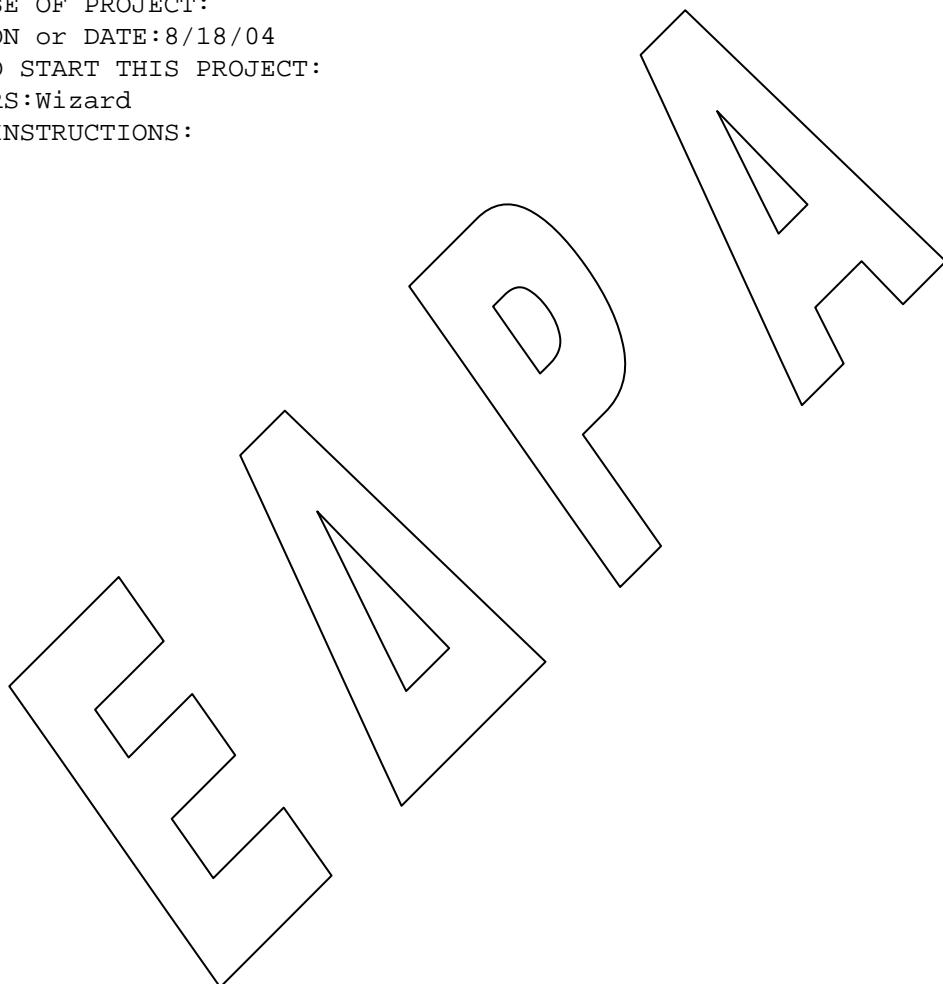
PURPOSE OF PROJECT:

VERSION or DATE: 8/18/04

HOW TO START THIS PROJECT:

AUTHORS: Wizard

USER INSTRUCTIONS:



Class NumberConverter

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```
public class NumberConverter
{
    public static long bin2Dec(String binary)
    {
        int bash=2;
        long dec=0;
        int position=binary.length()-1;
        int ekthetis=0;
        int suntelestis=0;
        while(position >= 0)
        {
            if (binary.charAt(position)=='1')
                suntelestis=1;
            else
                suntelestis=0;
            dec += (long) (suntelestis * Math.pow(bash,ekthetis));
            position--;
            ekthetis++;
        }
        return dec;
    }//bin2Dec

    public static long oct2Dec(String oct)
    {
        int bash=8;
        long dec=0;
        int position=oct.length()-1;
        int ekthetis=0;
        int suntelestis=0;
        while(position >= 0)
        {
            switch (oct.charAt(position))
            {
                case '0': suntelestis=0; break;
                case '1': suntelestis=1; break;
                case '2': suntelestis=2; break;
                case '3': suntelestis=3; break;
                case '4': suntelestis=4; break;
                case '5': suntelestis=5; break;
                case '6': suntelestis=6; break;
                case '7': suntelestis=7; break;
            }
            dec += (long) (suntelestis * Math.pow(bash,ekthetis));
            position--;
            ekthetis++;
        }
        return dec;
    }//oct2Dec

    public static long hex2Dec(String hex)
    {
        int bash=16;
        long dec=0;
```

```

int position=hex.length()-1;
int ekthetis=0;
int suntelestis=0;
while(position >= 0)
{
    switch (hex.charAt(position))
    {
        case '0': suntelestis=0; break;
        case '1': suntelestis=1; break;
        case '2': suntelestis=2; break;
        case '3': suntelestis=3; break;
        case '4': suntelestis=4; break;
        case '5': suntelestis=5; break;
        case '6': suntelestis=6; break;
        case '7': suntelestis=7; break;
        case '8': suntelestis=8; break;
        case '9': suntelestis=9; break;
        case 'A': suntelestis=10; break;
        case 'B': suntelestis=11; break;
        case 'C': suntelestis=12; break;
        case 'D': suntelestis=13; break;
        case 'E': suntelestis=14; break;
        case 'F': suntelestis=15; break;
    }
    dec += (long) (suntelestis * Math.pow(bash,ekthetis));
    position--;
    ekthetis++;
}
return dec;
}//hex2Dec

public static String dec2Bin(long decimal)
{
    int base=2;
    String binary="";
    int remainder; // To upoloipo ths diaireshs
    long quotient; // To phliko ths diaireshs
    boolean finished=false;
    while (!finished){
        remainder= (int) (decimal % base);
        quotient=decimal/base;
        binary= remainder + binary;
        if (quotient==0)
            finished=true;
        else
            decimal=quotient;
    }
    return binary;
}//dec2Bin

public static String dec2Oct(long decimal)
{
    int base=8;

```

Class NumberConverter (continued)

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```
String binary="";  
int remainder; // To upoloipo ths diaireshs  
long quotient; // To phliko ths diaireshs  
boolean finished=false;  
while (!finished){  
    remainder= (int) (decimal % base);  
    quotient=decimal/base;  
    binary= remainder + binary;  
    if (quotient==0)  
        finished=true;  
    else  
        decimal=quotient;  
}  
return binary;  
}//dec2Oct  
  
public static String dec2Hex(long decimal)  
{  
    int base=16;  
    String binary="";  
    int remainder; // To upoloipo ths diaireshs  
    String remainder2=""; //Xreiazomaste ena String sto opoio 8a kratame to remaindr afou twra einai kai grammata!  
    long quotient; // To phliko ths diaireshs  
    boolean finished=false;  
    while (!finished){  
        remainder= (int) (decimal % base);  
        if (remainder<10)  
            remainder2= ""+remainder; //apla metatrepoyme ton ari8mo se String.  
        else //Twra prepei na ksexwrisoume tis alles periptwseis, opou o ari8mos 8a metatrapsei se String.  
        {  
            switch(remainder)  
            {  
                case 10: remainder2="A"; break;  
                case 11: remainder2="B"; break;  
                case 12: remainder2="C"; break;  
                case 13: remainder2="D"; break;  
                case 14: remainder2="E"; break;  
                case 15: remainder2="F"; break;  
            } //switch  
        } //else  
        quotient=decimal/base;  
        binary= remainder2 + binary; //Twra pros8etoume to String remainder2 kai oxi ton ari8mo remainder  
        if (quotient==0)  
            finished=true;  
        else  
            decimal=quotient;  
    }  
    return binary;  
}//dec2Hex
```

```

public static String bin2Oct(String bin)
{
    String oct="";
    int mhkos=bin.length(); //Auto einai to mhkos tou binary pou mas
dinei o xrhsths.
    int mhdenika = 3-(bin.length()%3); //Auto einai to plh8os twn m
hdenikwn pou prepei
    //na pros8esoume mprosta wste to
neo bin na diaireitai se triades.
    for (int i=1; i<=mhdenika;i++)
        bin="0"+bin; //Twra pros8etoume ta mhdenika. Allwste osa 0 ka
i na pros8esoume aristera o ari8mos den allazei.
        mhkos=bin.length(); //To mhkos exei pleon allaksei.
        int position = mhkos-3; //Sto position 8a apo8ikeuoume th 8esh st
hn opoia briskomaste kai deksia tis opoias einai oi 3 ari8mai pou 8a doul
euoume.
        while (position>=0)
        {
            String temp=bin.substring(position); //Ws temp pairnoume ka8e
fora ta tria teleutaia grammata tou duadikou ari8mou. Dhldh apo to posi
tion kai meta.
            bin=bin.substring(0,position); //Sth sunexeia afairoume apo t
o bin ta tria teleutaia grammata 8etontas to iso me to String apo thn arx
i mexri to position -1.
            // PROSOXH!!!!!! H me8odos subs
tring(x,y) epistrefei to String apo th 8esh x ws th 8esh y-1!!!
            int dec=(int) bin2Dec(temp); //Metatrepoume se dekadiko thv t
riada. Epeidh to megisto pou mporei na parei enas duadikos ari8mos me 3 p
sifia
            // einai to 111 to opoio se dekadiko e
inai to 7 h metatroph auth mas dinei ton antistoixo oktadiko ari8mo.
            oct=dec+oct;
            position -=3;
        }
        return oct;
    } //bin2Oct

    public static String bin2Hex(String bin) //Kat' antistoixia me to
bin2Oct, mono pou douleuoume me tetrada psifiwn afou to megisto mporei n
a einai 1111=15.
    {
        String hex="";
        int mhkos=bin.length(); //Auto einai to mhkos tou binary pou mas
dinei o xrhsths.
        int mhdenika = 4-(bin.length()%4); //Auto einai to plh8os twn m
hdenikwn pou prepei
        //na pros8esoume mprosta wste to
neo bin na diaireitai se tetrades.
        for (int i=1; i<=mhdenika;i++)
            bin="0"+bin; //Twra pros8etoume ta mhdenika. Allwste osa 0 ka
i na pros8esoume aristera o ari8mos den allazei.
            mhkos=bin.length(); //To mhkos exei pleon allaksei.

```

Class NumberConverter (continued)

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```
int position = mhkos-4; // Sto position 8a apo 8ikeuoume th 8esh st  
hn opoia briskomaste kai deksia thes opoias einai oi 3 ari8moi pou 8a doul  
euoume.  
    while (position>=0)  
    {  
        String temp=bin.substring(position); // Ws temp pairnoume ka8e  
        fora ta 4 teleutaia grammata tou duadikou ari8mou. Dhladh apo to positio  
n kai meta.  
        bin=bin.substring(0,position); // Stn sunexeia afairoume apo t  
o bin ta 4 teleutaia grammata 8etontas to iso me to String apo thn arxi m  
exri to position -1.  
        // PROSOXH!!!! H me8odos subs  
tring(x,y) epistrefei to String apo th 8esh x ws th 8esh y-1!!!  
        int dec=(int)bin2Dec(temp); // Metatrepoume se dekadiko thv te  
trada. Epeidh to megisto pou mporei na parei enas duadikos ari8mos me 4 p  
sifia  
        // einai to 111 to opoio se dekadiko e  
inai to 15 h metatroph auth mas dinei ton antistoixi oktadiko ari8mo.  
        String hexTemp=""; // Se auth ti metabliti 8a metatrepoume to  
dekadiko sto katallhlo gramma.  
        if (dec<10)  
            hexTemp=" "+dec;  
        else  
        {  
            switch(dec)  
            {  
                case 10: hexTemp="A"; break;  
                case 11: hexTemp="B"; break;  
                case 12: hexTemp="C"; break;  
                case 13: hexTemp="D"; break;  
                case 14: hexTemp="E"; break;  
                case 15: hexTemp="F"; break;  
            } // switch  
        } // else  
        hex=hexTemp+hex;  
        position -=4;  
    }  
    return hex;  
}//bin2Oct  
  
public static String oct2Bin(String oct)  
{  
    String bin="";  
    int position=oct.length()-1;  
    while(position>=0)  
    {  
        long psifio=0; // To psifio pou briskomaste ekeinh th stigmh w  
s ari8mos.  
        switch (oct.charAt(position)) // Metatrepoume to gramma sth 8e  
sh position se ari8mo.  
        {  
            case '0' : psifio=0; break;  
            case '1' : psifio=1; break;
```

```

        case '2' : psifio=2; break;
        case '3' : psifio=3; break;
        case '4' : psifio=4; break;
        case '5' : psifio=5; break;
        case '6' : psifio=6; break;
        case '7' : psifio=7; break;
    }
    String temp=dec2Bin(psifio); //Pairnoume ka8e fora to gramma
8ewrwntas to dekadiko kai to metatrepoume se duadiko
    while(temp.length()<3)
        temp="0"+temp; //Sth sunexeia pros8etoume sto duadiko ta
katallhla mhdenika wste na apoteleitai apo 3 psifia
        bin=temp+bin;
        position--;
    }
    position=0;
    while (bin.charAt(position)=='0') //Koboume ta peritta mhdenika.
    {
        position++;
        bin=bin.substring(position);
    }
    return bin;
}

public static String hex2Bin(String hex)
{
    String bin="";
    int position=hex.length()-1;
    while(position>=0)
    {
        long psifio=0; //To psifio pou briskomaste ekeinh th stigmh w
s ari8mos.
        switch (hex.charAt(position)) //Metatrepoume to gramma sth 8e
sh position se ari8mo.
        {
            case '0' : psifio=0; break;
            case '1' : psifio=1; break;
            case '2' : psifio=2; break;
            case '3' : psifio=3; break;
            case '4' : psifio=4; break;
            case '5' : psifio=5; break;
            case '6' : psifio=6; break;
            case '7' : psifio=7; break;
            case '8' : psifio=8; break;
            case '9' : psifio=9; break;
            case 'A' : psifio=10; break;
            case 'B' : psifio=11; break;
            case 'C' : psifio=12; break;
            case 'D' : psifio=13; break;
            case 'E' : psifio=14; break;
            case 'F' : psifio=15; break;
        }
        String temp=dec2Bin(psifio); //Pairnoume ka8e fora to gramma
    }
}

```

Class NumberConverter (continued)

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```
8ewrwntas to dekadiko kai to metatrepoume se duadiko
    while(temp.length()<4)
        temp="0"+temp; //Sti sunexeia pros8etoume sto duadiko ta
    katallhla mhdenika wste na apoteleitai apo 3 psifia.
        bin=temp+bin;
        position--;
    }
    position=0;
    while (bin.charAt(position)=='0') //Kaboume ta peritta mhdenika.
    {
        position++;
        bin=bin.substring(position);
    }
    return bin;
}

}
```

