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* Program 1: Conversion from binary to decimal representation

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* Pledge: I have neither given nor received unauthorized aid

* * * on this program. (signature on file)

* Description: This program converts a binary number to decimal.

* * *

* Input: Binary number

* * *

* Output: Decimal number

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import javax.swing.*;

public class BinaryProgram {

 public static void main(String[] args)

 {

 // Request 6-bit binary number

 String binaryString=JOptionPane.showInputDialog("Enter a 6-bit binary number");

 // Convert from String to integer type

 int binary=Integer.parseInt(binaryString);



```

// Declaration of output value
int decimal=0;

// Declaration of variable to hold the current bit
int bit;

int i=0;

int power2=1;

int len=binaryString.length();

while (i<len) {

    bit=binary%10;//get the last bit (6th)

    decimal=decimal+bit*power2;//add it, multiplied by the corresponding power of 2

    binary=binary/10;//get rid of the 6th bit, now the 5th bit is last

    power2*=2;

    i++;

}

// Format output String

String binaryOutput="Binary: " + binaryString;

String decimalOutput="Decimal: " + decimal;

// Output message

JOptionPane.showMessageDialog(null, binaryOutput + "\n" + decimalOutput,

"Binary to Decimal Conversion", JOptionPane.INFORMATION_MESSAGE);

```



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// Exit  
System.exit(0);  
}  
}
```

