Part A:

import java.util.Scanner;  
  
public class HW4 {  
  
 public static void main(String[] args) {  
  
 Scanner keyboard = new Scanner(System.*in*);  
 System.*out*.print("Enter a a binary string: ");  
 String binaryString = keyboard.nextLine();  
 int binaryInt = *bin2Dec*(binaryString);  
 System.*out*.println(binaryInt);  
 }  
  
 public static int bin2Dec(String binaryString) {  
 try {  
 return Integer.*parseInt*(binaryString, 2);  
 }  
 catch (NumberFormatException e) {  
 System.*out*.println("A NumberFormatException occurred.");  
 e.printStackTrace();  
 }  
 return 0;  
 }  
}

Output:

Text

Description automatically generated with medium confidence

Part B:

import java.util.Scanner;  
  
public class HW4PartB {  
  
 public static void main(String[] args) throws BinaryFormatException {  
  
 Scanner keyboard = new Scanner(System.*in*);  
 System.*out*.print("Enter a binary string: ");  
 String binaryString = keyboard.nextLine();  
 int binaryInt = *bin2Dec*(binaryString);  
 System.*out*.println(binaryInt);  
 }  
  
 public static int bin2Dec(String binaryString) throws BinaryFormatException {  
 if (!*isBinaryString*(binaryString)) {  
 throw new BinaryFormatException();  
 } else {  
 return Integer.*parseInt*(binaryString, 2);  
 }  
 }  
  
 public static boolean isBinaryString(String binaryString) {  
 int i = 0;  
 while (i < binaryString.length()) {  
 if (binaryString.charAt(i) != '0' && binaryString.charAt(i) != '1') {  
 return false;  
 }  
 i++;  
 }  
 return true;  
  
 }  
  
 public static class BinaryFormatException extends Exception {  
 public BinaryFormatException() {  
 super("Not a binary value.");  
 }  
 }  
}

Output:

Text

Description automatically generated with medium confidence