VishwaCTF

CHALLENGE NAME : [HARDWARE HEIST]

DEV : [PUSHKAR DEORE]

CATEGORY : [MISCELLANEOUS]

LEVEL : [MEDIUM]

2024

Description:

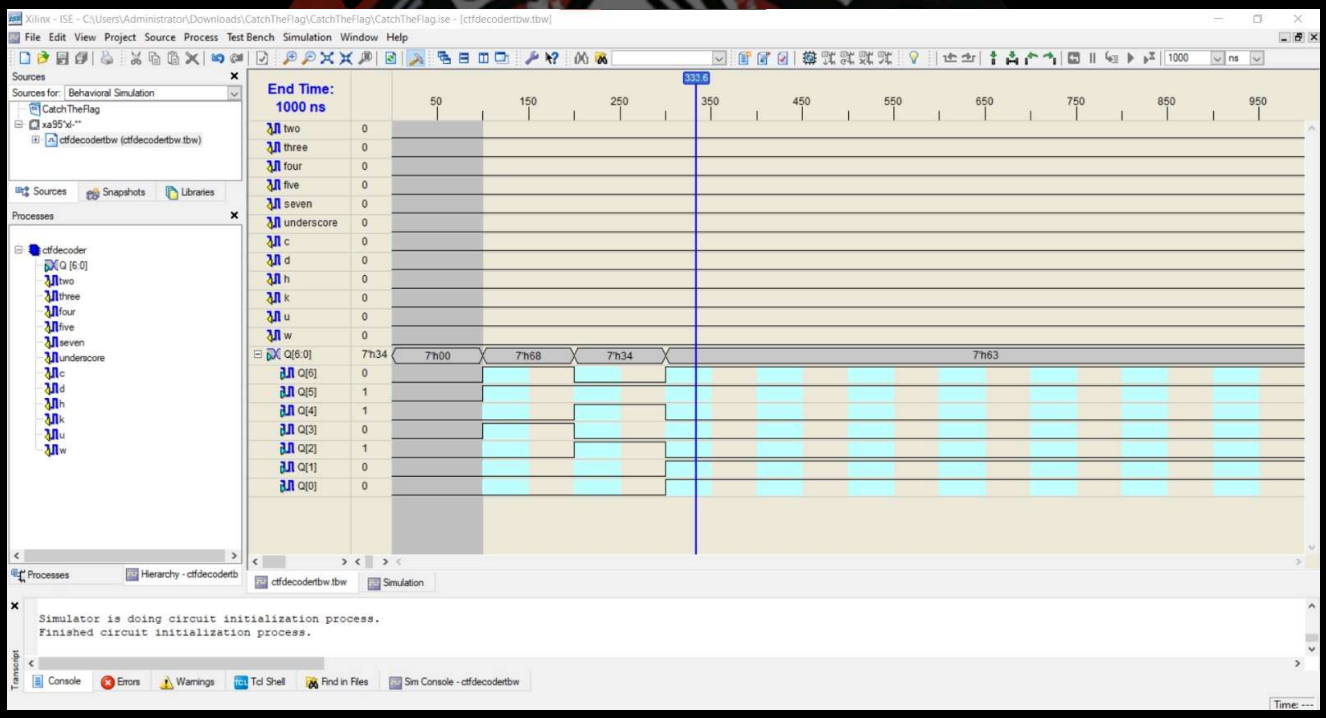
Your cyber gang has stolen a hardware device code from the CIA but are unable to use it. Although while stealing the code, you have found some binary strings which might be helpful to understand the device. You might even find the important codes after solving the device and strings.

Solution:

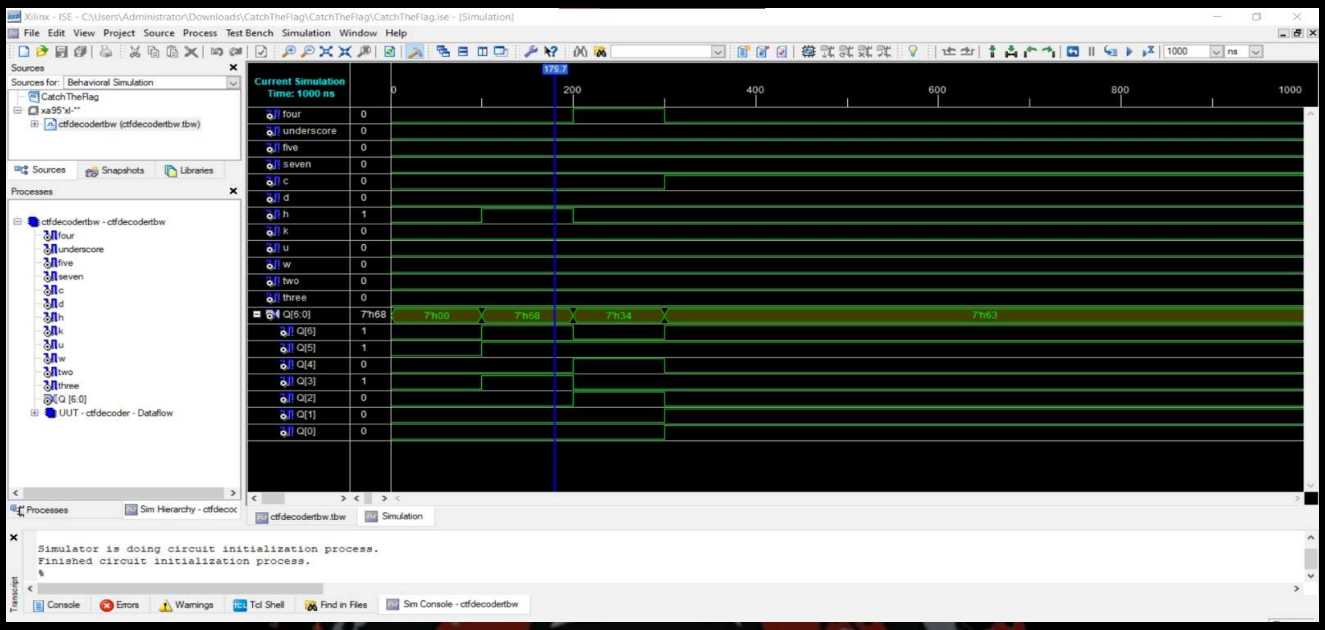
You are given a VHDL project file and a binary input string. The hardware code given in the project contains a PAL logic. The various output alphabets are symbolising the output flag code character by character. The binary input strings are nothing but the inputs to the hardware logic provided in the question. After providing the inputs in 7 bits per input cycle, you get one of the output characters as high which is nothing but the character of the flag output. After giving the entire input string in 7 bits format, you will get the output flag string character by character.

How to give binary input to the hardware?

https://www.youtube.com/watch?v=qcW02bJ-mIM

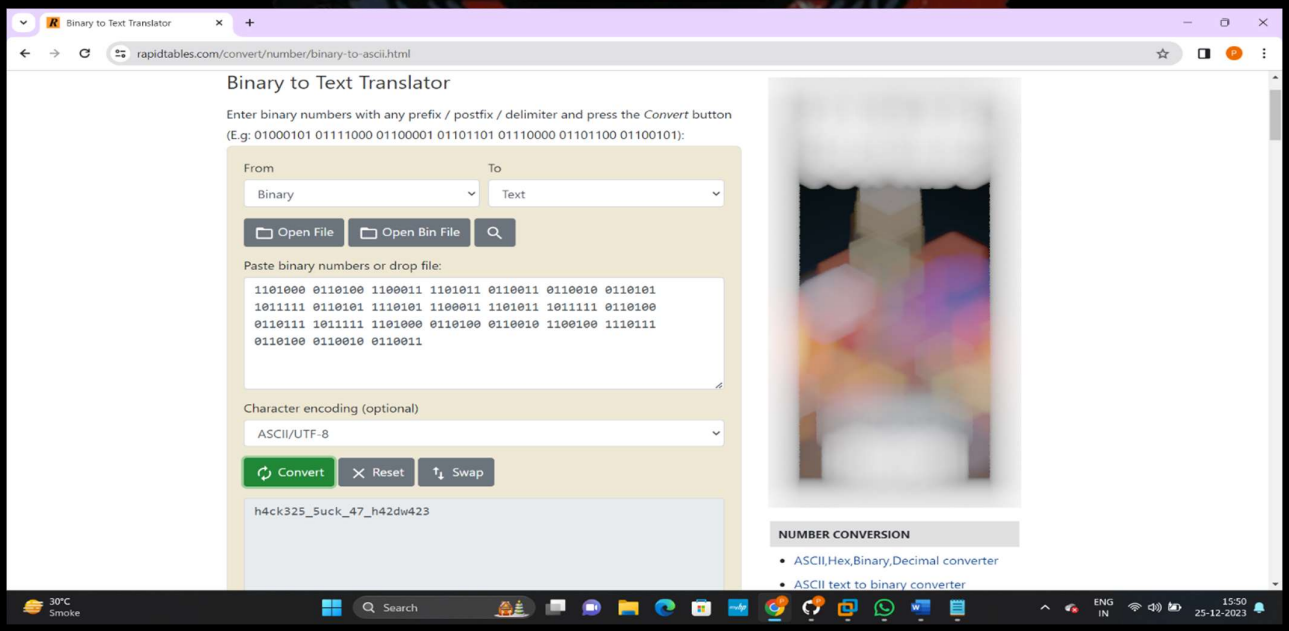


Output:



Smart approach:

The above-mentioned approach is very time consuming. But if one decides to analyse the VHDL code, its input string length and the output characters, one might notice that the given binary string is nothing but the binary equivalent of the ASCII values for every character in the output flag string but unlike standard 8-bit ASCII equivalent, a 7-bit ASCII equivalent is used. One can easily convert binary to text by using any online converter and get the flag.



FLAG: VishwaCTF{h4ck325_5uck_47_h42dw423}