```
1   module PhraseBank(
2       input wire clock,
3       input wire[4:0] DisplayAddr,
4
5       input wire[3:0] AddressIn, DataIn, KeypadDataIn,
6       input wire[1:0] PresentStateFlag,
7
8       output reg[7:0] Phrase
9   );
10
11      wire[7:0] OutPadrao;
12      wire[3:0] AddressInUnit, AddressInTens, DataInUnit, DataInTens, KeypadDataInUnit,
    KeypadDataInTens;
13
14      Deconcatener inst00(AddressIn, DataIn, KeypadDataIn, AddressInUnit, AddressInTens,
    DataInUnit, DataInTens, KeypadDataInUnit, KeypadDataInTens);
15      RomPadrao inst01 (clock,DisplayAddr, OutPadrao);
16
17      reg[7:0] Numbers [0:9];
18      initial begin
19          Numbers[0] = "0";
20          Numbers[1] = "1";
21          Numbers[2] = "2";
22          Numbers[3] = "3";
23          Numbers[4] = "4";
24          Numbers[5] = "5";
25          Numbers[6] = "6";
26          Numbers[7] = "7";
27          Numbers[8] = "8";
28          Numbers[9] = "9";
29      end
30
31      reg[7:0] RomState [0:2];
32      initial begin
33          RomState[0] = "I";
34          RomState[1] = "W";
35          RomState[2] = "R";
36      end
37
38      always @(*) begin
39
40          if(DisplayAddr == 5'd4) Phrase = Numbers[AddressInTens];
41          else if(DisplayAddr == 5'd5) Phrase = Numbers[AddressInUnit];
42
43          else if(DisplayAddr == 5'd14) Phrase = RomState[PresentStateFlag];
44
45          else if(DisplayAddr == 5'd20) Phrase = Numbers[KeypadDataInTens];
46          else if(DisplayAddr == 5'd21) Phrase = Numbers[KeypadDataInUnit];
47
48          else if(DisplayAddr == 5'd29) Phrase = Numbers[DataInTens];
49          else if(DisplayAddr == 5'd30) Phrase = Numbers[DataInUnit];
50
51          else Phrase = OutPadrao;
52      end
53
54  endmodule
```