

Steps for implementation of Iris flower classification using KNN on labsland

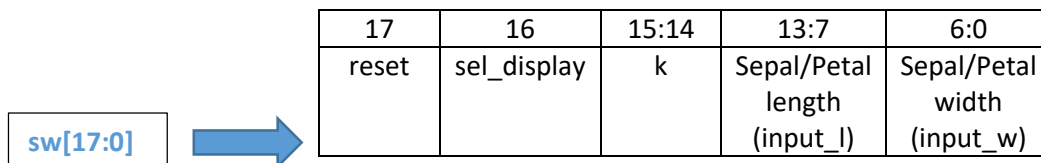
1. Upload all the Verilog files setting 'toplevel_labsland.v' module as top level entity.
2. Synthesize and upload to FPGA.
3. Check the output class for the given inputs for clustering size k=1, 3 and 5:

sepal length - 6.1 cm, sepal width - 2.8 cm, petal length - 4.7 cm, petal width - 1.2 cm

Signal Assignments:

instr=KEY[2:0] (KEYS in labsland are active low)

LEDR[1:0]=result



Sequence of inputs:

a) k = 3 (01) \\cluster size

i) SW[17:0] = 1001 1100001 0101000

(decoded as reset=1, sel_display=0, k=01, input_l=6.1cm, input_w=2.8cm)

ii) SW[17] = 0 and KEY[0] = 0

(decoded as reset=0 and instr=110)

iii) KEY[0] = 1 and SW[17:0] = 0001 1000111 0010010

(decoded as instr=111, reset=0, sel_disp=0, k=01, input_l=4.7cm and input_w= 1.2cm)

iv) KEY[1] = 0

(decoded as instr=101)

v) KEY[1] = 1

(decoded as instr=111)

vi) KEY[2] = 0

(decoded as instr=011)

\\we will get the output for k=3 as LEDR[1:0] = 01 (versicolor)

b) $k = 1$ (00)

i) $SW[15:14] = 00$

(decoded as $k=00$)

\\we will get the output for $k=1$ as $LEDR[1:0] = 01$ (versicolor)

c) $k = 5$ (10)

i) $SW[15:14] = 10$

(decoded as 10)

\\we will get the output for $k=5$ as $LEDR[1:0] = 01$ (versicolor)