Project2 SPI

ANUBIS Team

* **Names:**
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  + **Mustafa Ibrahim Mohamed Ibrahim**
  + **Nada Mamdouh Ismail**
* **A black screen with green lines

  Description automatically generatedQuestaSim waveforms:**

**A black and green screen with green lines

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**A screen shot of a computer

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**A screen shot of a computer screen

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* **Synthesis snippets for gray encoding:**
  1. Schematic after the elaboration:

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* 1. A computer screen shot of a computer

     Description automatically generatedSchematic after the synthesis:
  2. Synthesis report showing the encoding used:

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* 1. A screenshot of a computer

     Description automatically generatedTiming report snippet:
  2. Snippet of the critical path highlighted in the schematic:

A screenshot of a computer

Description automatically generated

* **Synthesis snippets for one\_hot encoding:**
  1. A screenshot of a computer

     Description automatically generatedSchematic after the elaboration:
  2. A computer screen shot of a computer

     Description automatically generatedSchematic after the synthesis:
  3. A screen shot of a computer

     Description automatically generatedSynthesis report showing the encoding used:
  4. A screenshot of a computer

     Description automatically generatedTiming report snippet:
  5. A screenshot of a computer

     Description automatically generatedSnippet of the critical path highlighted in the schematic:
* **Synthesis snippets for seq encoding:**
  1. A screenshot of a computer

     Description automatically generatedSchematic after the elaboration:
  2. A computer screen shot of a computer

     Description automatically generatedSchematic after the synthesis:
  3. A screen shot of a computer

     Description automatically generatedSynthesis report showing the encoding used:
  4. A screenshot of a computer

     Description automatically generatedTiming report snippet:
  5. A computer screen shot of a computer

     Description automatically generatedSnippet of the critical path highlighted in the schematic:
* **Implementation snippets for gray encoding:**
  1. A screenshot of a computer

     Description automatically generatedUtilization report:

A screenshot of a computer

Description automatically generated

* 1. A screenshot of a computer

     Description automatically generatedTiming report snippet:
  2. A screenshot of a computer screen

     Description automatically generatedFPGA device snippet:

A screenshot of a computer

Description automatically generated

* **Implementation snippets for one\_hot encoding:**
  1. A screenshot of a computer

     Description automatically generatedUtilization report:

A screenshot of a computer

Description automatically generated

* 1. A screenshot of a computer

     Description automatically generatedTiming report snippet:
  2. A screenshot of a computer screen

     Description automatically generatedFPGA device snippet:

A screenshot of a video game

Description automatically generated

* **Implementation snippets for seq encoding:**
  1. A screenshot of a computer

     Description automatically generatedUtilization report:

A screenshot of a computer

Description automatically generated

* 1. A screenshot of a computer

     Description automatically generatedTiming report snippet:
  2. FPGA device snippet:

A screenshot of a computer

Description automatically generatedA screenshot of a computer screen

Description automatically generated

* **Snippet of the “Messages” tab:**
  1. A screenshot of a computer

     Description automatically generatedgray encoding:
  2. A screenshot of a computer

     Description automatically generatedone\_hot encoding:
  3. A screenshot of a computer

     Description automatically generatedseq encoding:
* **Since sequential encoding has high setup slack after implementation (which is = 6.023ns).  
  Therefore sequential encoding is the best.  
  After adding debug core:**

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* 1. Implementation:

A screenshot of a computer screen

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* 1. A screenshot of a computer

     Description automatically generatedSuccessful bitstream:

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* **Note: sync rst is used because async rst is not supported with RAM**

