

# Project List

In order to receive >90 your project must include the use of a NIOS processor, C program, FPGA logic, and 1 on-board/off-board peripheral.

Note: not all of these meet the >90 criteria

Use the accelerometer and display the G forces on the 7seg display and the VGA monitor(1 person)

Display cursor on VGA monitor that responds to mouse movement (1-2 people)

Create a drawing program (1-3 people)

Create a video game like Snake, Pong or Tetris (2-3 people)

Create a "rate meter" where the user presses buttons as fast as they can, illuminating LED's indicating how fast they are going (e.g., 1 LED = slow, 10 LED's = fast) – result displayed on the 7seg (1 person - 80pts max)

Interface with a sensor and display the result on the 7seg display and the VGA monitor (e.g., thermometer) (1 person)

Create a scrolling display on the 7 segment displays, where a person presses keys on the keyboard, and when a person is finished and presses a button, the scan codes scroll across the 7 segment displays (1-2 people) -- Could be made into a multi-person project if displayed as characters on VGA display

Display a bitmap with 3 or 4 bit color (1 to 2 people)

Type on keyboard and display character on monitor (1-2 people)

Display a bitmap, and perform different operations (e.g. color inversion, shift and subtract) when user flips a switch (2-3 people)

Make a Wheel of Fortune game where the person spins using the buttons and the spin value is displayed on the 7 segment displays (1 person – 85pts max)) -- Could be expanded to large multi-person project displaying the puzzle on the monitor and pressing keys to fill in puzzle

Create a memory game, where you light up an increasingly long sequence of LED's and the user must replicate the pattern on the pushbuttons until they fail – result displayed on the 7seg (1 person – 80pts max)

Games using the accelerometer for control

**Any other project approved by the instructor**