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| **AP CSP Python with CodeX**  **Mission 12 Assignment** | | **Name:** |
| **Getting Started** | | |
| In this project you will make a smart night light, using the built-in light sensor, that detects ambient light and turns on the CodeX’s pixels. **During this lesson you will complete all the goals.** | | |
| **Mission 12 : Night Light Objectives** | | |
| Complete Objective 1 Click on light sensor.  What is the CodeX light sensor?  *Create the file. Close the objective panel to see the CodeX in 3D for the 2nd goal.* |  | |
| Use the PowerPoint slides to review Analog and Digital (mission 5).  What is analog?  What is digital?  What is ADC? |  | |
| Complete Objective 2 Read ALL the information, and take notes as needed.  Dark =  Bright =  Any value below 2000 is …  *Follow CodeTrek to read the light sensor and display its value. You can add a sleep() if you want to slow down the printing.* |  | |
| Complete Objective 3 Read ALL the information, and take notes as needed.  What single line of code turns on all the pixels the same color?  *Complete the code. Read the Hints!* |  | |
| Complete Objective 4 Read ALL the information, and take notes as needed.  What is the optional argument that can dim the pixels?  What type of argument is it?  *Complete the code. Read the Hints!* |  | |
| Take the quiz. How did you do? Is there a concept you need to review? |  | |
| Complete Objective 5 Read ALL the information, and take notes as needed.  What problem do you fix in Objective 5?  How did you fix the problem?  *Complete the code. Use CodeTrek as needed.* |  | |
| Go to the sandbox.  Make these two changes to your program.   * Define a constant for percent (20). * Create a function for the section of code that scales the light sensor reading and turns on the pixels.   + The function will need a parameter. * Use the constant in the function, and call the function in the if statement. | | |
| CHALLENGE!  Have the CodeX display an image with the pixels. You can accomplish this anyway you like. You can use one image, several images, or another condition for displaying the image. | | |
| Run the program and make sure there are no bugs before submitting. Submit the ***NightLight*** program to the teacher. | | |