|  |  |
| --- | --- |
| **AP CSP Python with CodeX**  **Mission 13 Assignment** | **Name:** |
| **Getting Started** | |
| In this project you will make a race controller that starts and stops a race. You will create a graphical user interface and use non-blocking sound functions. **During this lesson you will complete all the goals.** | |
| **Mission 13: Sounds Fun Objectives** | |
| Complete Objective 1 Click on bitmap.  What is a bitmap?  *Create the file. Use CodeTrek to draw the basic screen layout.* |  |
| Complete Objective 2  This objective uses a list. What do you remember about lists?  Read ALL the information, and take notes as needed. Read all the comments in CodeTrek as well.  What are the elements in the list used for?  Why do you get a runtime error?  *Follow CodeTrek to add code.* |  |
| Complete Objective 3  What do you remember about local and global variables?  Read ALL the information, and take notes as needed.  What does “Local variable referenced before assignment” mean to you?  *Complete the code. Read the Hints!*  The program still doesn’t work the way you expect. What is wrong? |  |
| Take the quiz. How did you do? Is there a concept you need to review? |  |
| Complete Objective 4  You have solved this problem before, in Spirit Level. How do you fix the problem?  Read ALL the information, and take notes as needed. *Complete the code.* |  |
| Complete Objective 5 Read ALL the information, and take notes as needed.  What is the purpose of the function you add?  *Complete the code. Use CodeTrek as needed.* |  |
| Complete Objective 6 Read ALL the information, and take notes as needed.  What are the two user-friendly fixes to the program?  *Complete the code. Use CodeTrek as needed.* |  |
| Complete Objective 7 Read ALL the information, and take notes as needed.  What is the library you need to import so you can craft your own sound effects?  List at least three functions in the library:  *Complete the code. Use CodeTrek as needed.* |  |
| Complete Objective 8  This objective uses a for loop. What do you remember about for loops?  Read ALL the information, and take notes as needed. *Complete the code. Use CodeTrek as needed. You can change the starting sound effect any way you want, as long as you use at least for loop.* |  |
| Take the quiz. How did you do? Is there a concept you need to review? |  |
| Complete Objective 9  Read ALL the information, and take notes as needed.  What is the difference between blocking and non-blocking functions?  What code is used to toggle a Boolean?  What argument do you add to the “get\_mp3” statement so the music does not automatically play? Check the hint!  *Complete the code. Use CodeTrek as needed.* |  |
| Take the quiz. How did you do? Is there a concept you need to review? |  |
| Complete Objective 10  Read ALL the information, and take notes as needed.  *Complete the code. Use CodeTrek as needed. Customize the sound effect.* |  |
| Complete Objective 11  Click on soundlib.  Give one fact about the soundlib library:  Why is the sleep() needed after the glide()?  Read ALL the information, and take notes as needed. *Complete the code. Use CodeTrek as needed.* |  |
| Go to the sandbox.  Make these two changes to your program.   * Add code so when Button B is pressed, the program ends and the screen is cleared. * Change the color of the selection rectangle from DARK\_BLUE to a different color. | |
| CHALLENGE!  Add pixels! Decide what pixels you want to light up, when, and what colors. Do you want them to flash or stay steady? Create a function for the pixels that uses a parameter for color. Call the function at least once somewhere in the program. | |
| **Wrap-Up** | |
| Explain how a GUI is an example of abstraction: |  |
| What are three things you did to work through struggles and complete the program? |  |
| Run the program and make sure there are no bugs before submitting. Submit the ***Race\_Control*** program to the teacher. | |