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| **AP CSP Python with Robots**  **Functions, Parameters and Variables Activity Guide** | | **Name:** |
| **Introduction** | | |
| During this assignment, you will discuss when a function needs parameters, local variables and global variables. | | |
| **Warm-Up** Reflect on the functions you have defined and used since Mission 3. | | |
| What is a function? |  | |
| How do you define and call a function? |  | |
| When do you use a function – what are its purposes? |  | |
| **Parameters and Local Variables Problems:** List each variable. Indicate if it is a parameter or local variable. How is it used in the code? Insert more rows for each problem, as needed. | | |
| #1 | |  |  |  | | --- | --- | --- | | **Variable Name** | **Type** | **How it is used** | | freq | parameter | Argument in function call | |  |  |  | |  |  |  | | |
| #2 | |  |  |  | | --- | --- | --- | | **Variable Name** | **Type** | **How it is used** | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | |
| #3 | |  |  |  | | --- | --- | --- | | **Variable Name** | **Type** | **How it is used** | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | |
| #4 | |  |  |  | | --- | --- | --- | | **Variable Name** | **Type** | **How it is used** | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | |
| #5 | |  |  |  | | --- | --- | --- | | **Variable Name** | **Type** | **How it is used** | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | |
| **Parameters, Local Variables and Global Variables Problems:** List each variable. Indicate if it is a parameter, local variable or global variable. Insert more rows for each problem, as needed. | | |
| #6 | |  |  |  | | --- | --- | --- | | **Variable Name** | **Type** | **How it is used** | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | |
| #7 | |  |  |  | | --- | --- | --- | | **Variable Name** | **Type** | **How it is used** | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | |
| #8 | |  |  |  | | --- | --- | --- | | **Variable Name** | **Type** | **How it is used** | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | |
| #9 | |  |  |  | | --- | --- | --- | | **Variable Name** | **Type** | **How it is used** | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | |
| #10 | |  |  |  | | --- | --- | --- | | **Variable Name** | **Type** | **How it is used** | |  |  |  | |  |  |  | |  |  |  | |  |  |  | | |
| **Wrap-Up** | | |
| Give two benefits of using functions? (How do they manage complexity)? |  | |
| What is a parameter, and what are some reasons to use a parameter in a function? |  | |
| What are local variables, and when would you use them? |  | |
| What are global variables, and when would you use them? |  | |
| Submit this assignment to the teacher. | | |