Introduction to Coding

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What are Functions?

- Functions are used to organize code

- Functions are used to make code reusable

- Functions are used to make code easier to read

Defining Functions

- Functions are defined using the def keyword

- Functions can take arguments

- Functions can return values

```python
def my_function(x):
    return x
```

Calling Functions

- Functions are called using the function name

- Functions can be called with or without arguments

- Functions can be called multiple times

```python
def my_function(x):
    return x
print(my_function(10))
```

Pseudocode

- Pseudocode is used to plan out code

- Pseudocode is used to break down complex problems

- Pseudocode is used to make code easier to write

```
# Pseudocode
# Define a function that takes a list of numbers as
    an argument
# Iterate over the list of numbers
# If the number is even, add it to a new list
# Return the new list
```

Debugging

- Debugging is the process of finding and fixing errors in code

- Debugging is an important skill for programmers

- It may be frustrating to get an error message, but sometimes not getting one can be worse

- When we get an error message, we can use it to help us find the problem

- When the program runs without errors, but the output is not what we expect, have to use debugging techniques to find the problem

Read Error Messages

- Syntax Errors: Errors in the code structure

- Logic Errors: Errors in the code logic

- Runtime Errors: Errors that occur while the code is running

Rubber Duck Debugging

- Explaining the code to someone else

- Explaining the code to an inanimate object

- Explaining the code to yourself