**IF LOOPS**

If loops, commonly known as "if statements," are a fundamental control structure in programming and are used to make decisions in your code based on certain conditions. You use if loops when you want to execute a block of code if a specified condition is true, and potentially another block of code if the condition is false. Here are some common scenarios where if loops are used:

1. **Conditional Execution:** You use if statements to conditionally execute a block of code. For example, you might want to print a message only if a user's age is greater than 18:

A black rectangular object with green lights

Description automatically generated

**Branching:** You can use if-else statements to choose between two different blocks of code based on a condition. For instance, you might want to determine whether a number is even or odd:

A screen shot of a computer

Description automatically generated

**Multiple Conditions:** You can use if-elif-else statements to handle multiple conditions. This is useful when you have more than two possible outcomes. For example, you can determine the grade of a student based on their exam score:

A black screen with a white border

Description automatically generated

**Nested Conditions:** You can nest if statements inside other if statements to create complex conditions. For instance, you might want to check multiple conditions for a user's access to a system:

A screen shot of a computer program

Description automatically generated

1. **Error Handling:** If statements are often used for error handling. You can check for specific error conditions and handle them accordingly.
2. **User Input Validation:** When your program interacts with users, you may use if statements to validate their input. For example, checking if a user entered a valid email address.