Chapter 5 - Lecture 1

ENGR1120 - 800 - Honors Programming for Engineers

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Using Loop Statements

Lecture 1 - Using Loop Statements

- What is Looping?

- Types of Loops

- MATLAB Examples

Repeated Code

You may have you noticed in your programs that there was a
lot of Repeated Code ? Is this OK?

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What can we do about it?
Introduce a new Control Structure ...

A New Control Structure

A loop is a fundamental **control structure** in sequential programming in which one or more commands is executed in repetition controlled by a logical statement or counter. - TH

… In computer programming, a loop is a sequence of instructions that is repeated until a certain condition is reached. - Web

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Why use Loops?

Why are loops useful in computer programming?

- Reduce problems associated with it repeated code

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Many Different Types

There are many different types of loops in computer programming. This is not an inclusive list.

- WHILE loops
- FOR loops
- *nested* loops
- DO... WHILE loops

Loops can be characterized as *entry-controlled* or *exit-controlled* loops.

The WHILE Loop

The WHILE Loop is the simplest loop in computer programming.

- **block of code** is repeated as long as **condition** is **true**

- *entry-controlled* loop structure

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Structure of a WHILE Loop

```
i =1; %Initialize the Counter

while (i <10)

        % Do Stuff Here

        i = i +1; % Increment the Counter

end
```

References

- Your MATLAB textbook - Chapter 5 - Looping Statements