MODULE 1: INTRODUCTION TO PROGRAMMING

Logical Branching

TECH ELEVATOR
A Stride Company

Git Commands

1. git status	Check which files are affected
2. git add <filename>	Add to staging (-A for all)
3. git commit –m “<message>”	Commit staged files to repo
4. git pull origin main	*Grab any changes from the cloud*
5. git push origin main	*Send your changes to the cloud*
6. git pull upstream main	**Grab the new stuff**

Steps 1, 2, and 3 you do anytime you want to create a “save point”

Steps 4 and 5 you do when you want to backup your code or just before submitting homework

Step 6 is done before class (after 8:30) and after class when the exercises are ready

ELEVATE YOURSELF

Data and Behavior

- Two aspects: Data and Behavior
  - **Data** that will hold information that our program will store
  - **Behavior** will manipulate that data and transform it into something valuable

Behavior in our application is all about running certain blocks of code in our application depending on what data we have.

Expressions and Statements

- An **expression** is a construct made up of variables, operators, and method invocations, which are constructed according to the syntax of the language, that evaluates to a single value.

Expressions and Statements

- A **statement** forms a complete unit of execution.

Code Blocks

- Code that needs to belong together as a single unit can be written in **blocks**.

```
{
    int length = 10;
    int width = 5;
    int area = 0;
    area = length * width;
}
```

Scope

```
{
    int length;
    int width;
    int area;
    area = length * width;
}
```

A variable's **scope** defines where in the program that the variable exists (i.e. can be referenced). When code execution reaches a point where a variable is no longer referenceable, the variable is said to be *out of scope*.

Rules of Scope

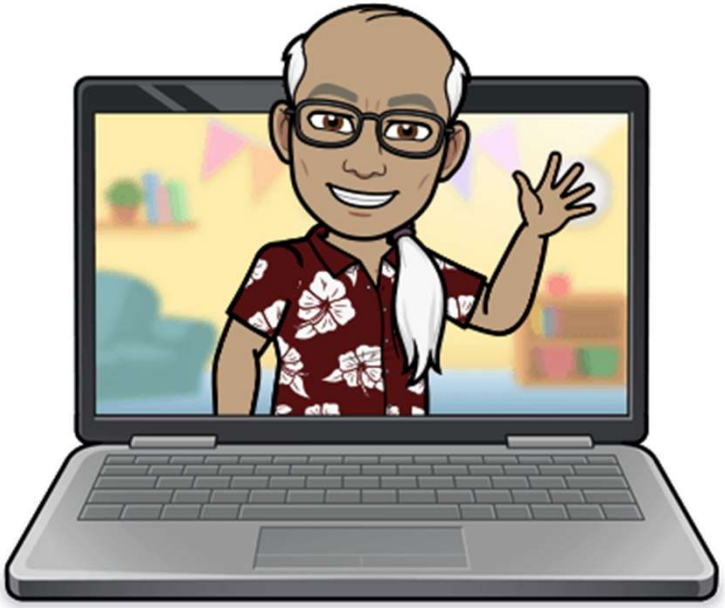
- Variables declared inside of a function or block {..} are local variables and only available within that block. This includes loops.
- Blocks can be nested within other blocks and therefore if a variable is declared outside of a block, it is accessible within the inner block.

Methods

- A **method** is a named block of code. It can take multiple values and **return back a single value**.

Access Modifier Return Type Descriptive Name Parameters

LET’S CODE!



Boolean Expressions

- A **boolean expression** is an expression that produces a boolean value (true or false) when evaluated

Comparison Operators

- A **boolean expression** is an expression that produces a boolean value (true or false) when evaluated

Operator	Meaning
==	Equals To
!=	Not Equal To
>	Greater Than
<	Less Than
>=	Greater Than or Equal To
<=	Less Than or Equal To

Logical Operators

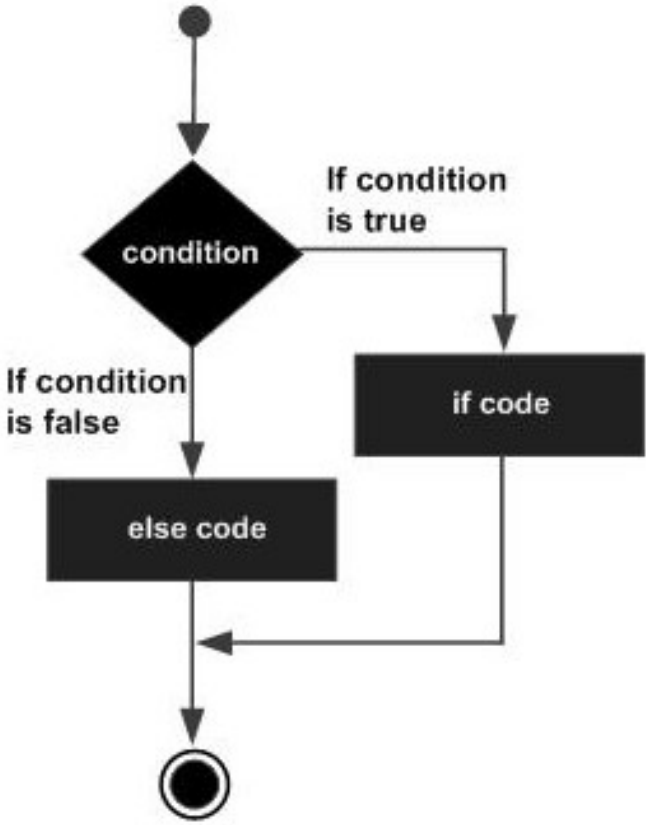
A	B	!A	A && B	A || B	A^B
True	True				
True	False				
False	True				
False	False				

Logical Operators

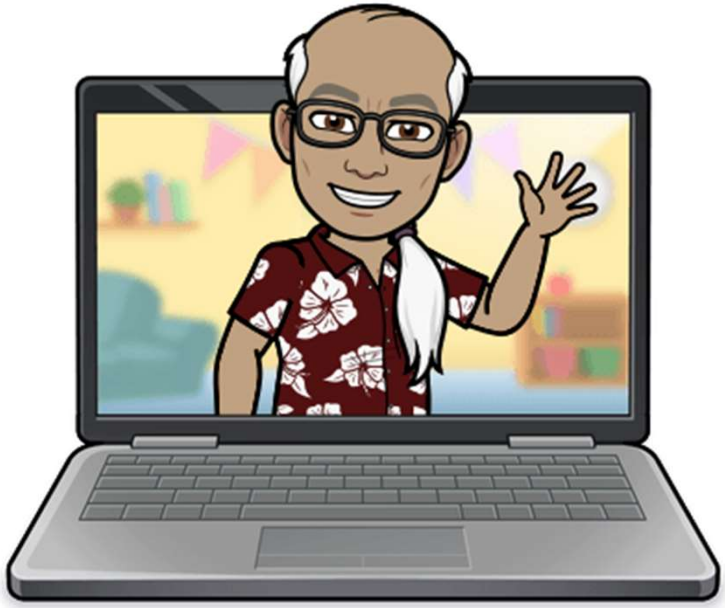
A	B	!A	A && B	A || B	A^B
True	**True**	False	True	True	False
True	**False**	False	False	True	True
False	**True**	True	False	True	True
False	**False**	True	False	False	False

If Statement

```
if (condition){
    <if code>
} else {
    <else code>
}
```



LET’S CODE!



WHAT QUESTIONS DO YOU HAVE?

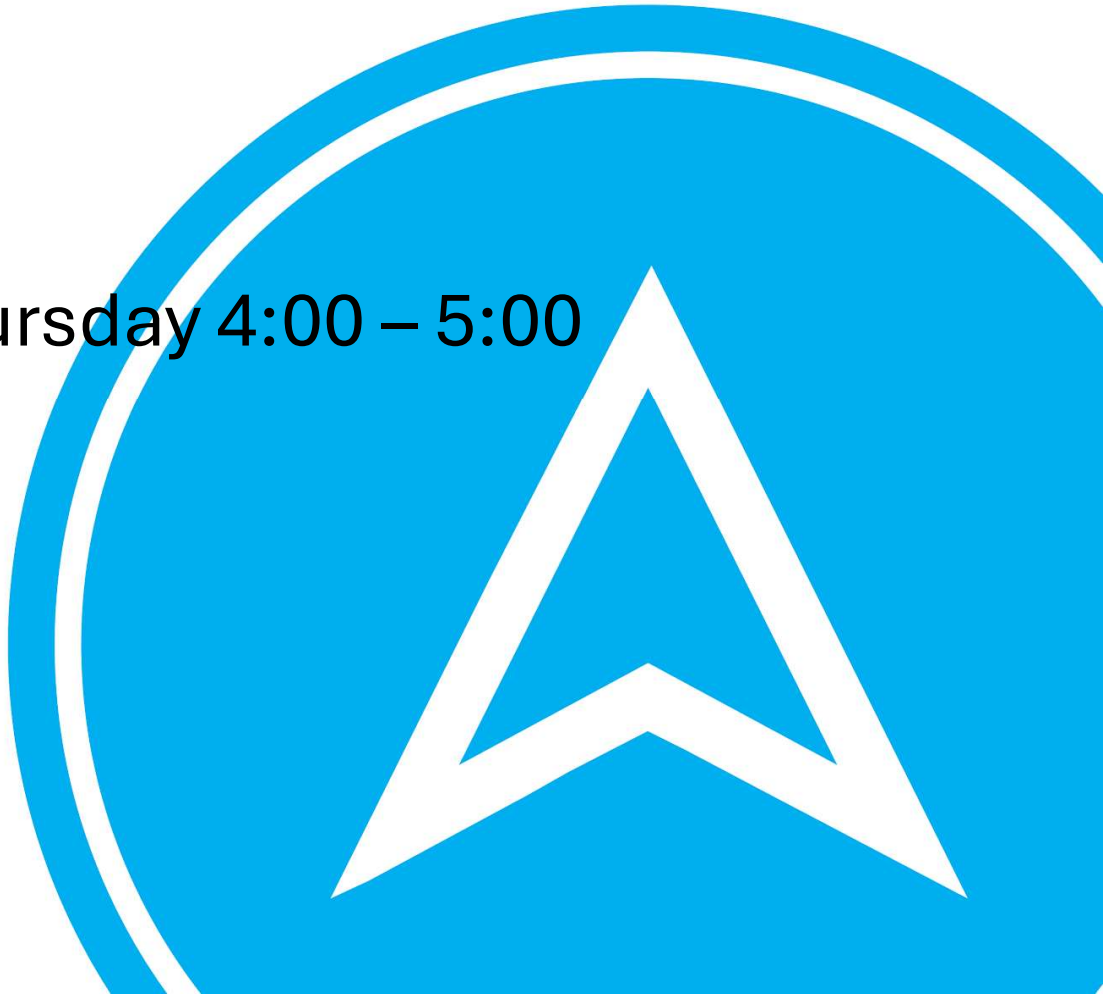
Exercise Study Session

When:

Every* Tuesday and Thursday 4:00 – 5:00

Where:

Blue Classroom



*unless cancelled

Reading for tonight:

Arrays and Loops