

# CMSC388B

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## Web Application Development with JavaScript



## Objects, Operators

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# Extending Built-in classes

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- **Example:** ExtendedArray.html

# Chaining (?) Operator

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- **Chaining (?) operator** - placed after a property is accessed, which prevents access to the next level if the property does not exist
- **Example:** ChainingOp.html

# Revisiting &&, || ?? (Coalescing Operator)

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- **logical and (&&)** - if the first operand evaluates to false, the first operand is returned; otherwise, the second operand is returned
  - Whatever makes it false is the value returned
- **Logical or (||)** - if the first operand evaluates to true, the first operand is returned; otherwise, the second operand is returned
  - Whatever makes it true is the value returned
- **nullish coalescing operator (??)** - returns the value of the second operand if the left operator is **null** or **undefined**. **Example:** x ?? 18
- **Example:** AndOrCoalescing.html

# Nonextensible and Sealed Obj

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- In JavaScript, you can add properties and methods to an object at any time (extensible)
- You can restrict this behavior by using `Object.preventExtensions()`
- What if you don't want properties deleted as well?
  - **Seal the object**
  - By sealing an object, you create the same abstraction we have in Java class definitions, where once a class is defined, the class instance variables and methods are set
- **Example:** ExtensibleSealed.html

# Freeze

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- Strictest protection
- Not extensible, sealed, and data properties can not be modified
  - Constant object
- **Example:** Freeze.html