

Final Exam Topics

The final focuses on material from chapters 7, 8, and 9 in the zyBook and modules 7, 8, and 9 on Blackboard.

- Object – what is it?
- Class – what is it and what is it used for?
- Object & class relationship
- What is used to create an object
- Default constructor
- No-arg constructor
- When is default constructor provided automatically?
- How are constructors invoked?
- What are constructors named?
- How many constructors must be defined in a class?
- Does a constructor have a return type?
- `Rectangle rect1 = new Rectangle();` Given the statement, what can be said about `rect1`? – `rect1` is a reference variable that references a `Rectangle` object. `rect1` is NOT the object itself.
- Data fields in a class have default data types. What are the default values for each type?
- Primitive variables vs reference variables and the difference between the types of data stored
- Local variables – what are they and do they have default values?
- Data fields in classes can be of what data type?
- Class data fields are the properties of an object
- Class methods are the behavior of an object
- Accessor methods and mutator methods – what are they and how should they be defined?
- What is encapsulation?
- What is an immutable object?
- Variable definitions – when can duplicate variable names be used?
- Methods defined with the `static` modifier do not need to be called with an instance of the object. For example, `Math.sqrt(9)` returns 3. `Math` is the name of the class and `sqrt` is a method in the class defined with the `static` modifier.
- Java variables may contain primitive data type values and references to objects.
- What is the dot operator?
- What is instantiation?
- Convention for defining a class (i.e. – `public class Circle`)
- Java method return types
- What does reserved word *new* do?
- What is needed to properly define a method parameter?
- A parameter of reference type allows a method to access what?
- Compare & Contrast `ArrayList` and linked list
- `ArrayList` methods and what they do (i.e. `get`, `set`, `add`, `remove`, `size`)
- Javadoc tool does what?
- How does the `insertAfter()` method work in a linked list?
- Memory regions and what they hold (code, static memory, stack, and heap)
- When is an object eligible for garbage collection?
- What is `System.in` and what is it usually associated with?
- What is `System.out` and how is it used?
- `Printf` formatting
- How to read from a `String`
- `Scanner` class `hasNext` method
- Go through all of the participation activities covering file input and output
- How to read from and write to files
- Wrapper classes