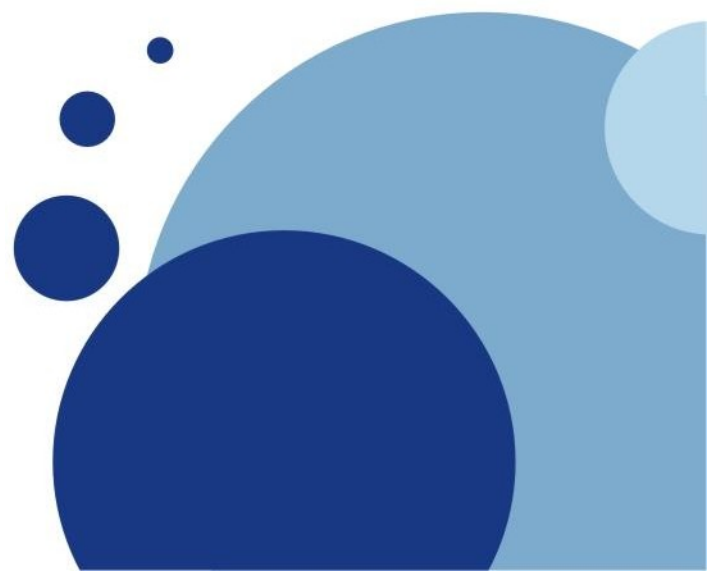


GEOG 178/258
Week 6:

Midterm Practice

mike johnson





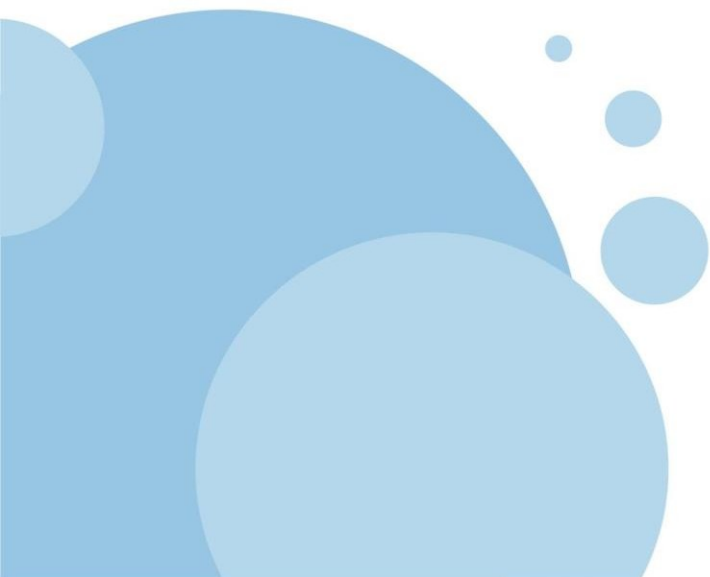
Question 1

Week

6

Sample Answers

**What are the three components
needed for declaring a variable?**

- 1)Type
 - 2)Name
 - 3)Value
- 



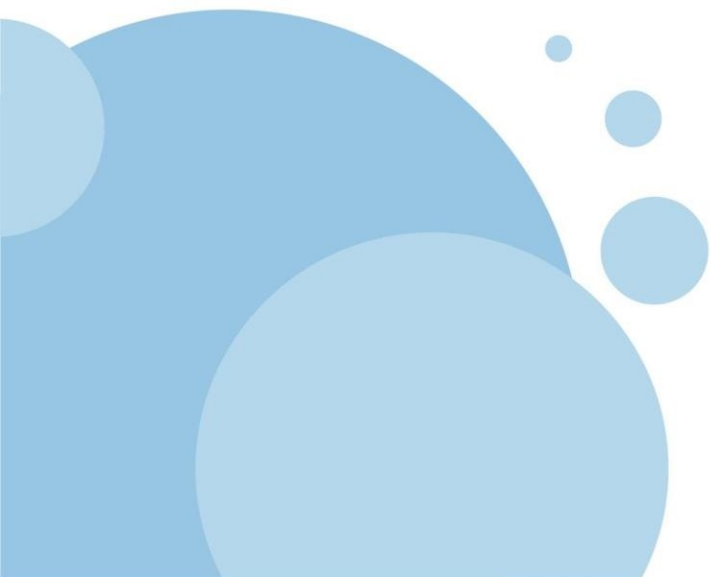
Question 2

Week

6

Sample Answers

List the primitive types of variables in Java:

- 1) Double
 - 2) Int
 - 3) Float
 - 4) Long
 - 5) Boolean
 - 6) Char
 - 7) Short
 - 8) Byte
- 



Question 3

Week

6

Sample Answers

Write a line to create a value `x` that equals 100

```
int x = 100;
```





Question 4

Week

6

Sample Answers

Write a line to create a value y that equals 10.75:

```
double y = 10.75;
```





Question 5

Week

6

Sample Answers

What is the general form of a while loop?

```
While (condition) {  
    statements;  
}
```



Question 6

Week

6

Sample Answers

Create a specific instance of a ‘while loop’ and explain what it does

```
int count = 1;

while (count <= 10) {
    System.out.println("The count is: " + " * ");
    count++;
}
```

When run, this loop will print the statement “The count is “___”.” Count is an integer variable initialized to 1. After each print statement count is increased by one. The loop will terminate once x is not less than or equal to 10.



Question 7

Week

6

Sample Answers

What is the general form of a 'if-else statement:

```
for(initialization; termination; increment) {  
    statements;  
}
```




Question 8

Week

6

Sample Answers

Create a specific instance of a ‘for loop’ and explain what it does?

```
for( int i = 1; i < 11; i++){  
    System.out.println(("The count is: " + i );  
}
```

When run, this loop will print the statement “The count is “_____”.”

i is an integer variable initialized to 1. After each print statement count is increased by one. The loop will terminate once x is not less than 11.



Question 9

Week

6

Sample Answers

What is the general form of a 'if-else' statement

```
if(condition) {statement;}  
else {statement;}
```



Question 10

Week

6

Sample Answers

Create a specific instance of a ‘if-else statement and explain what it does:

```
int rawScore= 76;
char grade;

    if (testscore >= 90) { grade = 'A';}
    else if (rawScore >= 80) {grade = 'B';}
    else if (rawScore >= 70) {grade = 'C';}
    else if (rawScore >= 60) {grade = 'D';}
    else {grade = 'F';}

    System.out.println("Students Grade: " + grade);
}
}
```

This loop takes a integer value and assigns a ‘letter grade’ to that value through a set of conditions. Every integer value can only meet one condition and if no condition is met then the ‘catch all’ grade of ‘F’ will be assigned.



Question 11

Week

6

Sample Answers

Explain public vs. private

Public and private are access modifiers that correspond to the visibility of an object, variable or class. If a member is private it is only accessible within the class it is declared. However if a member is public it is accessible at the class, package, subclass, and world level.



Question 12

Week

6

Sample Answers



What does it mean to define a variable as static?

The static keyword denotes a member variable, or method, that can be accessed without requiring an instantiation of the class to which it belongs.

In simple terms, it means that you can call a method or variable, even if you've never created the object to which it belongs!



Question 13

Week

6

Sample Answers



What does it mean to define a variable as final?

The final keyword in java is used to restrict the modification of a class, method or a variable. A final class can not be extended, a final method cannot be overridden and we cannot change the value of a final variable.

If you make a variable final, you will not be able to change it.



Question 14

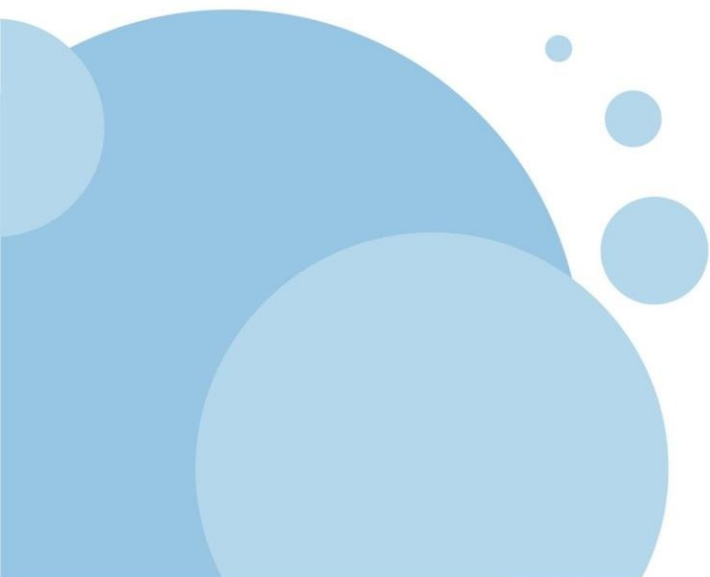
Week



6

Sample Answers

Give three real-life examples of a class and object (example chairs are a class and recliner is an object)

- 1) Ellison hall is an object of class building
 - 2) Granny Smith is an object of class apple
 - 3) Coke is an object of class beverage
 - 4) Robin is an object of class bird
 - 5) ...
- 

Question 15

Week

6

Sample Answers

```
public class E {  
    private final double PI = 3.1459; } (a) +1  
    private double radius;  
  
    public circle () { } (b) +1  
        radius = 0.0; }  
  
    public circle (double r) { } (c) +1  
        radius = r; }  
  
    public void setRadius (double r) { }  
        radius = r; } (EC.1) +.5  
  
    public double getRadius () { }  
        return radius; }  
  
    public double calculateArea () { } (d) +1  
        return PI * radius * radius; }  
}  
  
The method signature for calculateArea() is: } (f) +1  
    calculateArea (double)
```




Question 16

Week



6

Sample Answers



What is the purpose of a default constructor:

A default constructor is a constructor which can be called with no arguments (either defined with an empty parameter list, or with default arguments provided for every parameter).

It can be used to call the super class constructor and initialize all instance variables.



Question 17

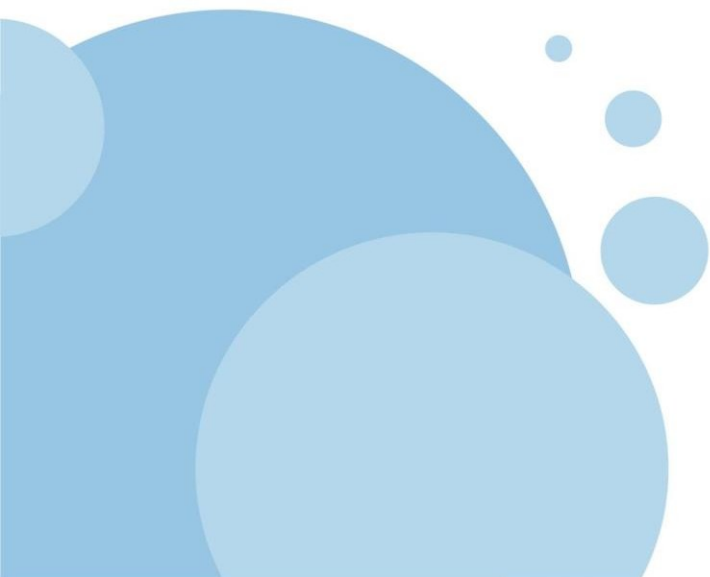
Week

6

Sample Answers

What is meant by inheritance?

Inheritance is a mechanism wherein a new class is derived from an existing class. In Java, classes may inherit or acquire the properties and methods of other classes. A class derived from another class is called a subclass, whereas the class from which a subclass is derived is called a superclass.





Question 18

Week

6

Sample Answers

What does 'this' in Java refer to?

This is a reference variable that refers to the current object. More info can be found here:

<http://www.javatpoint.com/this-keyword>



Question 19

Week

6

Sample Answers



What's the difference between an array and an arrayList?

An array can only hold a fixed number of elements, defined at creation, of a primitive variable type.

An array list can change size after creation and is able to hold non-primitive data types.



Question 20

Week

6

Sample Answers

**Is this statement valid:
boolean isOn = True;**

No, Boolean values in java are define by lowercase true and false





Question 21

Week

6

Sample Answers

Is this statement valid:
`int class = 34;`

No, class is a reserved word in Java





Question 22

Week

6

Sample Answers

Is this statement valid:

```
int[] values = new int[3];  
    values[1] = 34  
    values[2] = 45;  
    values[3] = 78;
```

No, Java is zero-indexed thus this example is trying to fill the 4th (ie non existent portion of the array values).



Question 23

Week

6

Sample Answers

Is this statement valid:

```
char city = "SB";
```

No, char is only able to hold one letter in memory.





Question 24

Week



6

Sample Answers

Is this statement valid:

```
string 1stPlace = "Jack";
```

No, a variable cannot begin with a number.



Question 25

Week

6

Sample Answers

Is this statement valid:

```
int cost = 10000000000;
```

No, the value 10,000,000,000 exceeds the maximum value of int.
(2,147,483,647)