**What does UML stand for?**

Unified Modeling Language.

**Describe and explain an example of polymorphism.**

Polymorphism is when there are multiple methods with the same name and the program is able to determine which method to call.

**Describe data encapsulation.**

Data encapsulation is protecting data. An example would be declaring a variable private.

**Is Money and Object? Why or why not?**

Money is an object depending on who you are. If you are a banker, Money is an object. If you are a customer looking to buy an item, money is not an object, but a value.

**How do you write and instance of Mouse of class Mickey?**

Mickey Mouse = new Mickey();

**How would you write and unnamed instance of class Bob?**

new Bob();

**How would you write an instance of desk of an unnamed class?**

Desk.newInstance();

**Write a notation for an attribute, which is a private instance attribute named called, type int, that is originally set to 0, and cannot be negative.**

-int called = 0 {0...∞}

**When is it acceptable for a variable to be declared private?**

When the programmer does not care if the variable can be accessed or changed by anyone.

**What is the notation for a public method?**

+

**What is the notation for a private method?**

-

**Draw a class diagram with at least 2 metods and 3 attributes.**

**Draw and create an example of abstract inheritance and an example of regular (derived ) inheritance.**

**Draw/show an example of method overriding.**

Public class Ryan{

int age

public int getAge(){

return age;

}

Public class Ryan2 extends Ryan{

int age;

@Override

public int getAge(){  
int age = 21;

Return age;

}

**Draw a note ( Any diagram of choice).**

**What are the difference and advantages between the iterative and waterfall process?**

The waterfall process is the lifecycle of a program where all the steps are done in order. In order to move to the next step, the previous step must be completed. The iterative process is where the the project and the subcomponents are split into cycles. The iterative process is advantageous because people are allowed to specialize, there is greater chance for collaboration, and able to deploy product faster which produces money faster. Also, mistakes in the iterative process will only setback that current cycle and loss is minimal, as opposed to the waterfall process, which will setback the entire project, and depending on where the mistake occurs, can cost a great deal of money to correct the mistake.

**Show a use case diagram called “Test value” with one user, two databases, and three use cases (1 includes 2, and 2 is extended by 3).**

**Draw a CRC Card.**

**Class Bank has three methods:**

1. **Void credit(amount:integer)**
2. **Void debit(amount:integer)**
3. **Integer amount()**

**Class Client has three methods**

1. **Integer getPin();**
2. **Void enterBank(Bank)**
3. **Void exitBank(void)**

**Class Client uses methods 1,2,3,5,6.**

**Class Bank uses method 4.**

**Show this in a script.**

**Complete this Relational diagram:**

**What is the Multiplicity of a spouse?**

0..1

**What is the Multiplicity of wheels on a car?**

4

**What is the Multiplicity of an employee of a company?**

**∞**

**Create a relational diagram for the following classes: Teacher, Student, Blackboard Unit, Blackboard, Chalk, Eraser.**

**With the following specifications**

**: Teacher knows about Student, Student knows about teacher.**

**: Teacher knows about BlackboardUnit, but BlackboardUnit does not know abou teacher.**

**: Blackboard, Chalk, Eraser are subcomponents of BlackboardUnit, Chalk and Eraser are easily removed and Blackboard is not.**

**State Machine Diagram:**

**Class Name : CruiseControl**

1. **When car is on, it is off.**
2. **Must be flipped into position to be engaged.**
3. **Hitting setSpeed(currentSpeed) will engage.**
4. **If speed drops too low, car will accelerate.**
5. **If speed is too high car will brake.**
6. **Hitting manual brake will disengage Cruise Control.**

**Activity Diagram**

**Customer enters bar and places an order for a drink. If the drink is alcholic check ID. If ID is invalid or missing, refuse drink. If drink is to be served, recieve payment before making drink. The bartender gives payment to cashier to make change and makes the drink. The change and drink are to be delivered together at the same time. Then the customer is asked if he or she would like another.**

**Is it important to record user actions?**

Yes.

**Justify previous answer.**

It is important to make sure that the user is entering correct data, or the program might crash or discontinue.

**What is integration testing?**

Testing if classes work together as they should. Classes that depend on each other should work as intended.

**What is systems testing?**

Testing your program on different systems. The program should work the same regardless of system(windows,linux, mac, and etc).

**What is stess testing?**

Stress testing is repeatedly creating and destroying an object, searching for memory leaks.

**What is scalability testing?**

Scalability testing is running multiple instances of the program at once to make sure it can handle the load.

**What is regression testing?**

Regression testing is running a previous version test on a newer version to uncover bugs and errors.