1. This project is <mark style="background-color:green">worth **600** points</mark> Due on <mark style="background-color:red">April 15 / 2013</mark>
(10% Deduction per day for late submission).

Select one of the following projects:

1- Lucky Cube Three D (slot machine 4x4x4)

Customers will be bidding ($1-$100) based on the possible winning cases you design such as row, column, diagonal, reverse diagonal, layers or sides, and super diagonal. Your program should carefully maintain the winning cases. We should not lose money for the casino. Using random class to populate the 64 slots make sure to checked for the probability of the winning cases to maintain extra money for the Casio. Alpha Numeric is high encouraged.

2- Product Inventory Project

Create an application which manages an inventory of products. Create a product class which has a price, id, and quantity on hand. Then create an inventory class which keeps track of various products and can sum up the inventory value.

3- Student Grade Book Application

Keep track of students (with a student class that has their name, average, and scores) in a class and their grades. Assign their scores on tests and assignments to the students and figure out their average and grade for the class. For added complexity put the students on a bell curve.

3. A proposal of your project. One page single-spaced TYPED description of your project and computer generated UML class diagrams describing your project is due AT THE BEGINNING OF CLASS ON 2/11. It should outline which project you picked and what is your project will do as fare as features, what is needed as input and what are the outputs. At this time I will let you know whether the project is too simple or too complex for a final project. This does not have to be a final design; you may (and probably will) make design changes. The proposal is worth 50 points.
<mark style="background-color:green">**Subtotal = 50**</mark> **points Due** <mark style="background-color:red">**Feb 28**th</mark>

3. The program must include the following 14 items. Each item is worth 25 points.
   1. Wrapper classes
   2. Relational (==,! =, >, >=, <, <=) and Logical Operators (&&, ||,!)
   3. One or more if-then-else statements
   4. One or more while/for loops
   5. Five classes minimum (One of which MUST be abstract)
   6. Interaction between all classes (interface, information hiding)
   7. Inheritance hierarchy must be implemented (super, extend)
   8. At least one interface must be implemented with student-designed classes.
   9. Polymorphism must be implemented with the student designed classes.
   10. Array List must be used in at least ONE student designed class and it
   11. MUST be traversed through AND accessed via an Iterator.
   12. Comments explaining logic and operation of program at key points
   13. Meaningful variable names
   14. Some kind of String manipulation (upper case, count char..)
   Animation OR Graphical is optional for extra points up to 100 points.

Subtotal = 400 points

4. PowerPoint presentation should be given on your assigned date after the Ap Exam.
The presentation will be Worth 100 points. The presentation shall have,
at minimum, the following slides:

- Title page (name, class, date,..etc)
- Description of program operation
- Demonstration of Program
- UML Diagrams for each class
- Use of classes/objects in project?
- Elaborate on how classes represent physical objects in your program
- Be prepared to justify class names, class data member names, method names)
- Description of class interaction (talk about each class)
- Description of use of an inheritance hierarchy (be prepared to justify them)
- Description of use of an interface (be prepared to justify them)
- Description of use of polymorphism (include a code for a demo)
- The use of polymorphism

Special features implemented in program - elaborate on tricks/special things
Known bugs in program

Citation of second-party code used in program (be able to explain code)
Conclusion - Summary of what you thought of writing the program
1- Difficulty level,
2- Fun level,
3- Your evaluation of the final product,
4- What you learned (be specific)

Subtotal = 500 points

6. Source code and disks should be submitted in a 1 THREE RING BINDER
The items that should be turned in are as follows:
1- A. Printouts with the 14 items marked and clearly visible.
2- Source Code with complete comments and java-docs
3- Computer-generated UML Diagrams
4- PowerPoint presentation slides (print 6 slides per page)
5- Java-docs
6- Computer-generated UML Diagram
7- PowerPoint presentation
8- CD that has the following: codes, UML, PP-presentation, JavaDoc
9- Any deviation from these guidelines will result in a 100 point deduction in points.
Subtotal = 600 points

Point Distribution
1- Project Proposal I 50 points
2- Requirements 1-14= 350 points (disk and printout is required for full credit)
3- PowerPoint Presentation 100 points (disk and printout are required)
4- Progress sheet 50 points (this is a weekly check on your project by me)
5- Neatness and organization is 50 point for the binder

Total points 600 points

Pointers for your final project:

1.

- START EARLY!! Don't wait until the last week to begin your project!!
- Do daily back up to your code on at least two locations
- Make sure you have all printouts on the presentation day!!
- Make sure you have MANY copies of your disk with PowerPoint presentation, source code and executable
- Test your program on the presentation computer before the presentation date.
- Use of block comments (/* */) for commenting large sections of code.
- Using "System.out.println" statements to display values during the debugging
- MAKE BACKUPS OF YOUR WORK!!
- Of course, & HAVE FUN :-)!!