Version: 1

COURSE WEBSITE

http://www.steveguynes.com/bcis3630/bcis3630/default.html

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and by Email and by appointment

Email: Dipakkumar.Pravin@unt.edu

For email: Use Subject Prefix 3630-001

For Text (for urgent situation): Prefix 3630:<your name>

TEXTBOOK: UNT Bookstore or Amazon if UNT Bookstore is out

Starting Out with JAVA - CONTROL STRUCTURES THRU OBJECTS
7th Edition, by Tony Gaddis ISBN-13: 978-0134802817 loose leaf

DO NOT get the Mylab edition - it costs more

COURSE OBJECTIVES:

This course is an introduction to business computer programming and design in a corporate environment. The primary focus is on the information systems function in support of corporate activities. Students will learn business problem solving using JAVA PROGRAMMING in both a microcomputer environment and on an IBM System Z Mainframe.

JAVA TOPICS COVERED

JAVA program types, creating an application, syntax, variables, literals and identifiers, methods, expressions, print, println. primitive data types, arithmetic operators, final, string class, dialog boxes, joptionpane, scope, scanner class methods, decision structures, if-else, relational operators, nested ifs, logical operators, precedence, switch and the case structure, printf method, selection, exception handling, try/catch, repetition, formatting, loops, while loop, nested loop, methods, passing arguments, local variables, classes, instance fields, constructors, overloading methods and constructors, scope of instance fields, packages, import statements, iteration, instance, string arrays, arrays of objects, arrays, loops, external classes, table/arrays, arraylist class

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3630 CLASS RULES

During lecture:

- 1. all laptops,
- 2. all cellphones,
- 3. all IPads.
- 4. all PDAs,

must be turned off and put away.
They cannot be on the desktop,
and absolutely no texting is allowed during class.

Bring paper and pencil to take notes on.

We will break every 50 minutes, so that you can catch up on texting and phone calls.

During Exams:

I will probably assign seats for the exams.

During the exams you can have:

NO CALCULATORS,

NO PHONES.

NO 'APPLE-TYPE' WATCHS, ETC.

NOTHING in your ears--your ears must be visible

YOU WILL HOVER OVER YOUR EXAM AND KEEP IT COVERED SO THAT NO ONE CAN SEE ANY OF YOUR ANSWERS. ALSO NO LOOKING AROUND.

THE NEXT TIME I CATCH SOMEONE SHOWING SOMEONE AN ANSWER, I WILL FLUNK BOTH OF THEM.

This is for your own good, as I curve the high grade on each exam to 200 and someone cheating could reduce the number of points YOU get from the curve. If you see someone cheating, turn them in and help the entire class!!!

Do not miss class any of the first 3 weeks or you will be 'HOPELESSLY LOST'.

Version: 1

Hints for PC installation of JAVA

[if you have a MAC, install as you normally install software]

Be CERTAIN to install JAVA in:

C:\Program Files\Java

Do not install it anywhere else !!!

If you mess up - uninstall it - and reinstall it.

CLICK BELOW TO DOWNLOAD AND INSTALL JAVA

https://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html

YOU MUST REGISTER WITH ORACLE TO GET JAVA

REMEMBER - BE CERTAIN THAT YOU download and install Java ONLY in:

C:\Program Files\Java

*You may use ANY jdk1.8.0_??? . INSTEAD OF jdk1.8.0_231

NEXT set the "Path"

Open Control Panel on your Windows Computer - [Start--->Control Panel]

Click the "System"

Click the "advanced system settings"

Click the "Environment Variables" button near the bottom of the box

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In the "System variables" window, look for a variable named "Path"

Path tells software programs such as JGrasp where to find the "JAVA" executable file. Path variables are separated by a '; '.

Click on the "Path" variable under "System variables" and click Edit

Scroll to the bottom of the window and type the following:

";C:\Program Files\Java\jdk1.8.0_231\bin; "

Please be very careful that you add the text to the End of the existing information that you see, and be sure that you type the ";" along with the rest of the information stated above.

Click OK

Next - set the CLASSPATH.

IF the "CLASSPATH" variable ALREADY EXISTS do the following:

Click on the "CLASSPATH" [as you did with Path] and click Edit

Scroll to the bottom of the window and type the following:

";C:\Program Files\Java\jdk1.8.0_231\lib; "

Please be very careful that you add the text to the end of the existing information that you see, and be sure that you type the ";" along with the rest of the information stated above.

Click OK

IF the "CLASSPATH" variable DOES NOT EXIST do the following:

Click the New button below the "System variables" dialog box

Type "CLASSPATH" in the Variable name field

Type the following in the Variable value field:

" C:\Program Files\Java\jdk1.8.0_231\lib; "

Click OK, OK, OK

Version: 1

For PC or MAC

CLICK THE LINK BELOW TO DOWNLOAD AND INSTALL THE **JGRASP IDE** program WHICH WE WILL USE TO RUN ALL OF OUR JAVA PROGRAMS:

http://www.jgrasp.org/

JGRASP software basics

- 1. Open the .java file you want to compile, so you can run it or debug it for logic errors.
- 2. Click the 'Toggle line numbers' ICON to turn on line numbering.
- 3. Click the 'Compile file' ICON to check for syntax errors. [fix any errors you find]
- 4. When you have NO syntax errors, click the 'Run application for current file' ICON.
- 5. If you still have a LOGIC error, set a breakpoint on the line where you want to start debugging and then click the Run debugger on current file ICON.

Version: 1 **SCHEDULE**

JAN 13 THIS IS A CRITICAL FULL 3 HOUR LECTURE -

DO NOT MISS THIS CLASS OR YOU WILL BE VERY LOST

- 1. Installing TN3270 for mainframe Sys Z
- 2. Installing FTP for mainframe Sys Z
- 3. Gaddis JAVA textbook
- 4. Downloading and installing JAVA JDK
- 5. Setting PATH and CLASSPATH variables for JAVA
- 6. INSTALLING JGRASP FOR DEBUGING JAVA
- 7. MAINFRAME PROBLEMS ONE & TWO -" Logging in and editing on Sys Z"

JAN 27 Lecture over Gaddis chapter 2 AND

MAINFRAME PROBLEMS THREE & FOUR

- "Running JAVA programs on the Sys Z"

MF Problem ONE due Not accepted after WED 1 - 29

FEB 3 Lecture over Gaddis chapter 3

MF Problem TWO due Not accepted after WED 2 - 5

10 Lecture over Gaddis chapter 4

MF Problem THREE and
JAVA PROBLEM ONE DUE
Not accepted after WED 2 - 12

17 Q and A on Gaddis chapter 4
Lecture over Web Session A
HINTS FOR GADDIS CH 1, 2, 3 FOR EXAM
Review for EXAM ONE
Look at exam hints on website

MF Problem FOUR and JAVA PROBLEM TWO DUE Not accepted after WED 2 - 19

FEB-24 EXAM ONE ON GADDIS CH1, CH 2 AND CH 3

40 multiple choice worth 5 points each = 200 points

Version: 1

5 from chapter 1, 17 from chapter 2 and 18 from chapter 3

Version: 1

MAR 2	START I	Lecture ov	ver (Gadd	is c	hapt	er 5

9 SPRING BREAK

16 FINISH Lecture over Gaddis chapter 5

JAVA PROBLEM THREE DUE
Not accepted after WED 4 - 16

23 START Lecture over Gaddis chapter 6
Lecture over Web Sessions B and C
HINTS FOR GADDIS CHs 4 and 5 FOR EXAM
Review for EXAM TWO
Look at exam hints on website

Mar 30 EXAM TWO ON GADDIS CH 4 AND CH 5

40 multiple choice worth 5 points each = 200 points 19 from chapter 4, and 21 from chapter 5

JAVA PROBLEM FOUR DUE Not accepted after WED 4 - 1

APRIL 6 FINISH Lecture over Gaddis chapter 6

Version: 1

13 Start Lecture over Gaddis chapter 7

JAVA PROBLEM FIVE DUE **Not accepted after WED 4 - 15**

20 Finish Lecture over Gaddis chapter 7
Lecture over Web Sessions D and E
HINTS FOR GADDIS CHAPTERS 6 AND 7 FOR EXAM
Review for EXAM THREE
Look at exam hints on website

JAVA PROBLEM SIX DUE

Not accepted after WED 4 - 22

April 27 EXAM THREE ON GADDIS CH 6 AND CH 7

40 multiple choice worth 5 points each = **200** points 23 from chapter **6**, and **17** from chapter **7**

Version: 1

HOMEWORK ASSIGNMENTS

Point Distribution for Assignments

MF PROBONE - login/basics	SYS Z		10
MF PROBTWO - more editing	SYS Z		05
MF PROBTHREE - JAVA/FTP	SYS Z		15
MF PROBFOUR - JAVA/JCL	SYS Z		05
JAVA PROBONE	Gaddis	ch 2	05
JAVA PROBTWO	Gaddis	ch 3	10
JAVA PROBTHREE	Gaddis	ch 4	10
JAVA PROBFOUR	Gaddis	ch 5	15
JAVA PROBFIVE	Gaddis	ch 6	15
JAVA PROBSIX	Gaddis	ch 7	10
TOTAL			100

MAINFRAME PROBLEMS ONE, TWO, THREE & FOUR GRADED ON THE SYSTEM Z. EMAIL DIPAK WHEN READY TO BE GRADED ON THE Z.

ALL JAVA PROBLEMS TO BE EMAILED TO THE 3630 STUDENT GRADER ON OR BEFORE THE DUE DATE. Save a copy of all emails sent to DIPAK or to the grader.

Version: 1

Grading System

EXAM ONE EXAM TWO EXAM THREE	200 points	in class exam in class exam in class exam
<u>HOMEWORK</u>	100 points	

TOTAL	700 p	oints

490 TO 559 POINTS = C 420 TO 489 POINTS = D 0 TO 419 POINTS = F	630 TO 700 POINTS = A 560 TO 629 POINTS = B	
120 10 100 101110 2	490 TO 559 POINTS = C	

FEB 24 EXAM ONE ON GADDIS CH1, CH 2 AND CH 3
MAR 30 EXAM TWO ON GADDIS CH 4 AND CH 5
APRIL 27 EXAM THREE ON GADDIS CH 6 AND CH 7

If for any reason, you leave the classroom, I will grade only what you have done to that point. You cannot come back and finish the exam.

Again, please take care of personal business before an exam starts

NO MAKE-UP EXAMS WILL BE GIVEN IN THIS COURSE

The official UNT exceptions do apply but ONLY IF YOU NOTIFY ME AT THE BEGINNING OF THE SEMESTER. You must give me signed documentation from the university at the beginning of the semester. If I am not notified at the beginning of the semester - you will not be allowed a make-up exam.

For the rest of the class, if you miss an exam, I will give you a grade of 75% of the lower grade you make on the other 2 exams.

If you make a 180 and a 160 on the 2 exams you do take, I will give you 75% of the lower grade of 160 for a grade of 120 points.

Version: 1

BE SMART AND SHOW UP FOR ALL 3 EXAMS OR YOU WILL BE PENALIZED

Version: 1

JAVA ASSIGNMENTS FOR BCIS 3630

JAVA ONE - 5 points From Gaddis chapter 2: [4 exercises]

- 1. Write a java program that prints on separate lines, your first name, your favorite hobby, your favorite car, your favorite book, and your favorite movie. Be sure to label each line so that the information is understandable. Enter the information for the 5 fields in the program itself.
- 2. Write a java program that asks you to enter your last name, your country of origin, your age, and your expected graduation year.

After you enter them, write out each answer on a separate line. You must use Scanner to input the 4 fields, and println to output the 4 fields separately.

- 3. Write a java program that asks you to enter the cost of an item, how many of the items are available in inventory, the expiration month of the item. After you enter them, display each answer with JOptionPane with a separate dialog box. You must use JOptionPane to enter the 3 fields
- 4. Write a java program that asks the user to enter the length of a room in feet and to enter the width of a room in feet [you may use either Scanner or JOptionPane]. Assuming that the carpet they plan to use is \$20.00 a square yard, compute how much it is going to cost to carpet the room.

Print out on 3 separate lines: The number of square feet, The number of square yards, The cost to carpet the room.

Version: 1

JAVA TWO - 10 points From Gaddis chapter 3: [4 exercises]

1. **USING THE IF STATEMENT** - Write a java program that asks the store manager to input the number of video cards she wants to buy on this order. The full non-discounted price for one video card is \$45.00.

If she buys 1 to 10 she pays full price
If she buys 11 to 25 she receives a 10% discount
If she buys 26 to 50 she receives a 25% discount

For testing purposes enter `any quantity between 12 and 48

Print out how many she bought
Print out the amount she saved with the discount
Print out the total of how much she spent

2. **USING THE SWITCH STATEMENT** - Write a java program that asks the user to enter the number of their favorite month of the year obviously, that would be 1 12. Use ANY number

Write a switch statement that takes the number and converts it to the fully spelled out name.

[For example only: if the user entered 3; the word MARCH would be printed] .

Be sure to build in an error message to catch any invalid data entries such as 0 or 13 etc.

Print out the number that was entered and the name that resulted.

Version: 1

3. **USING THE IF STATEMENT** & Scanner for input and println for output - Write a java program where the user enters a temperature as a whole number from input, and outputs a most likely season [either SUMMER, SPRING, FALL or WINTER] depending on the temperature entered.

SUMMER would be 90 or higher SPRING would be 70 to less than 90 FALL would be 50 to less than 70 WINTER would be less than 50

Consider it an error if the user ever accidentally enters a value of less than 0, or greater than 110.

4 USING THE SWITCH STATEMENT & JOptionPane for input and output - Write a java program where the user enters a temperature as a whole number from input, and outputs a "most likely" season [either SUMMER, SPRING, FALL or WINTER] depending on the temperature entered.

Either enter 40 or 60 or 80 or 100

SUMMER would be 100

SPRING would be 80

FALL would be 60

WINTER would be 40

Consider it an error if the user ever accidentally enters any other value.

Version: 1

JAVA THREE - 10 points From Gaddis chapter 4: [4 exercises]

1. Write a simple java program that uses loops. You may use 'WHILE' or 'FOR' or 'DO-WHILE' – you decide. The program should use a loop to compute the semester average for up to 5 students. In the loop the user will ask for a student name and their 3 test scores and add them up and divide the total by 3 giving the semester average.

You will print out the student name and semester average for each student you process

2. Write a java program that makes use of the 'DO WHILE ' loop.

The program asks a user to enter information about several of their friends. The information is their last name, the state they live in, their age, and their expected graduation year.

After you enter one friend, write out each individually. You must use JOptionPane to input the 4 fields, and to output the 4 fields.

Refer to the textbook Code Listing 4-6 to see how to use 'char repeat' to terminate the do while loop.

Version: 1

3. Write a java program that makes use of the 'FOR' loop.

Assume that a user has a 5 room apartment and is going to put down new floor covering in all 5 rooms. The program must ask the user to enter the length of each room in feet and to enter the width of each room in feet [you may use either Scanner or JOptionPane].

Assume that the flooring they plan to use is \$10.00 a square yard, compute how much it is going to cost to cover each room.

At the end print out how much it will cost to cover all 5 rooms in the apartment.

Print out on separate lines:

The number of square feet per room,

The number of square yards per room,

The cost to cover each room.

The number of square feet in the apartment,

The number of square yards in the apartment,

The cost to cover the 5 room apartment.

Version: 1

4 Assume that you own a small office-building complex containing several different buildings. Write a java program that uses the 'WHILE' loop which does the following.

It should ask the user to enter the total number of buildings in the complex.

Then, set up a loop so that you can process each building one at a time within the loop. The loop should ask the user for the number of offices in a given building, and the number of them that are rented. The program must be certain to keep track of the number of offices in a building and the number that are rented, because after the loop quits, the program must print out:

the total number of offices that the entire complex has the total number of offices that are rented the total number of offices that are empty the percentage of offices rented.

Version: 1

JAVA FOUR - 15 points From Gaddis chapter 5: [4 exercises]

#1 Write a java program which calculates the area of either a Triangle or a Rectangle.

Use Scanner to take an input field to tell you if the area to be calculated is for a Triangle or is for a Rectangle.

Depending on that input - the program must call either the Triangle method or the Rectangle method.

Each of those methods must receive 2 input fields from the user - one for base and one for height in order to calculate the area and then to print that area and the height and base from inside the method.

#2 Write a java program making use of methods that finds the smallest of any three numbers that the user inputs. You must use JoptionPane to input the three numbers.

A first method must be called and used to develop logic to find the smallest of the three numbers.

Α	second	method	must be us	ed to print	out that s	mallest n	umber fo	ound.	

#3 Write a java program which uses methods for calculating the sum of any 5 nonzero integer digits that are input. The program must use scanner for input of the 5 digits.

Two Methods must be used, one for calculating the sum of the 5 digits & the other for printing the sum of the digits. [remember a digit is a single character 1 thru 9]

#4 Write a java program to calculate employee pay using methods. There must be an overtime pay method and a straight pay method and a print method.

Using either scanner or JoptionPane, input the employee number, the hours worked, and the hourly pay for an employee.

If the employee worked over 40 hours, call the overtime method, if not call the straight time method. Calculate the pay amount in one of the 2 methods.

Call a third method to print the employee number and the pay amount.

Version: 1

JAVA FIVE - 15 points From Gaddis chapter 6: [4 exercises]

1) Book Class

Write a class named *Book* that has fields to hold the following data:

- Title
- Author
- Year published
- ISBN number

In the Book class, also include

- A mutator method for each field to set the value for the field
- An accessor method for each field to get the value for the field

Write a separate demo program that Utilizies the class by creating three instances of the class.

2) ShoppingCartItem class

Write a class named *ShoppingCartItem* that has fields to hold the following data:

- Name
- ID number
- Quantity
- Price

In the ShoppingCartItem class, also include

- A constructor that accepts arguments for the name and ID number and assigns them to their respective fields. Initialize the quantity and price fields as well.
- A mutator method for each field to set the value for the field
- An accessor method for each field to get the value for the field
- A method that returns the total price of the item calculated as quantity times price

Write a separate demo program that Utilizies the class by creating a *ShoppingCartItem* object and asking the user to enter the data for each of the object's fields.

The program should display the total price at the end with a label.

Version: 1

3) GroceryItem Class

Write a class named *GroceryItem* that holds data on an item in a grocery store. Include the following fields:

- description a String that holds the description of the item
- brand a String that holds the brand of the item
- *inventory* an int that holds the number of units in the inventory
- price a double that holds the item's price

Also implement:

- A constructor that accepts an argument for each field and assigns them to their respective fields
- A default constructor that set the description to an empty string (""), inventory to 0, and price to 0.0
- A mutator method for each field to set the value for the field
- An accessor method for each field to get the value for the field

Once the class is complete, Write a separate demo program that utilizes the Groceryltem class.

The program should create two *GroceryItem* objects with the following data:

	Description	Inventory	Price
Item #1	Bananas	100	\$0.35
Item #2	Brisket	20	\$45.99

Be sure to:

Create one *GroceryItem* object using the constructor

Create the another GroceryItem object using the default constructor and mutator methods

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4) Student Class

Write a class called *Student* to hold data on a student. Include the following fields:

- name a string that holds the student's name
- *idNumber* an int that holds the student's ID number
- *major* a string that holds the name of the student's major
- classification a string that holds the classification of the student. (Freshman, Sophomore, etc.)

Include the following in the Student class:

- A constructor that accepts arguments for each field and assigns them to their respective fields
- A constructor that accepts only the name and ID number and assigns them to their respective fields. Major and classification should be set to an empty string ("")
- A default constructor that assigns empty strings ("") to the string fields and 0 to the idNumber field.
- A mutator method for each field to set the value for the field
- An accessor method for each field to get the value for the field

Write a separate demo program that creates three student objects with the following data:

Name	ID Number	Major	Classification
George Smith	581375	BCIS	Senior
Sam Davis	914685	ACCT	Freshman
Sarah Brown	248234	FINA	Junior

The program should also:

- Utilize each constructor in the class
- Print the data for each student to the screen with labels.

Version: 1

JAVA SIX - 10 points From Gaddis chapter 7: [2 exercises]

#1 Write a java program that use the ArrayList command

The program should initially create a list of 10 countries that you would like to visit. DO NOT include Russia or Peru in your initial list as you will be using them later in the exercise.

Have the program retrieve the 10 names and print them to the screen using println.

The program should then retrieve and print only what is stored at index 4.

The program should then remove what is stored at index 9.

The program should then Add Russia at index 2.

The program should then Replace what is stored at index 7 with Peru.

The program should then print the size of the ArrayList

The program should then print all of the items in the ArrayList and their index Using println

Version: 1

#2 Write a java program that use multiple arrays

This is a simple array program which **does not use** an "external class & demo program" If you wish, you may break it down into methods, but that is not required.

a. Set up 4 arra	ys which hold data about 6 items you want to sell: [make them up]
int[] ite	emnum
int[] q	uantity
double[] p	rice
double[] sa	ales

- b. Set up loops to load the itemnum, quantity and price arrays
- c. Set up another loop to calculate values for the sales array. [= price * quantity]
- d. Set up another loop to print the item number and sales amount for each transaction
- . e. Set up another loop to calculate the total sales of all 6 items
- f. print the total sales amount

Version: 1

OFFICIAL UNT SYLLABUS STATEMENTS

<u>Academic Integrity Standards and Consequences.</u> According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University.

<u>ADA Accommodation Statement</u>. UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that **students must obtain a new letter of accommodation for every semester** and must meet with each faculty member prior to implementation in each class.

Emergency Evacuation Procedures for Business Leadership Building:

- Severe Weather In the event of severe weather, all building occupants should immediately seek shelter in the designated shelter-in-place area in the building. If unable to safely move to the designated shelter-in-place area, seek shelter in a windowless interior room or hallway on the lowest floor of the building. All building occupants should take shelter in rooms 055, 077, 090, and the restrooms on the basement level. In rooms 170, 155, and the restrooms on the first floor.
- Bomb Threat/Fire In the event of a bomb threat or fire in the building, all building occupants should immediately evacuate the building using the nearest exit. Once outside, proceed to the designated assembly area. If unable to safely move to the designated assembly area, contact one or more members of your department or unit to let them know you are safe and inform them of your whereabouts. Persons with mobility impairments who are unable to safely exit the building should move to a designated area of refuge and await assistance from emergency responders. All building occupants should immediately evacuate the building and proceed to the south side of Crumley Hall in the grassy area, west of parking lot 24.

Acceptable Student Behavior. Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT.

Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The University's expectations for student conduct apply to all instructional forums, including University and electronic classroom, labs, discussion groups, field trips, etc.