EGN3211 Homework #1 - <u>read all the way till "END OF REQUIREMENTS"</u>

- Use only concepts covered up to (and including) chapter 3.
- Submit one document containing all there parts 1A, 1B and 1C.
- See EGN3211.Homework.Template for details.
- Problems are from the text book : "C How to program 8th Edition"
- Each C program should include comments that includes your name, homework number and the purpose of the program.
- Programs should be indented to clearly show the control structures.

<u>Failure to demostrate the implementation of the program specifically the required input and output will result in serious deduction of points.</u>

<u>Homework details</u>

Homework 1A: Problem # 3.18 (5 points)

3.18 *(Sales Commission Calculator)* One large chemical company pays its salespeople on a commission basis. The salespeople receive $200 per week plus 9% of their gross sales for that week. For example, a salesperson who sells $5000 worth of chemicals in a week receives $200 plus 9% of $5000, or a total of $650. Develop a program that will input each salesperson's gross sales for last week and will calculate and display that salesperson's earnings. Process one salesperson's figures at a time. Here is a sample input/output dialog:

```
Enter sales in dollars (-1 to end): 5000.00
Salary is: $650.00

Enter sales in dollars (-1 to end): 1234.56
Salary is: $311.11

Enter sales in dollars (-1 to end): -1
```

- Your output must include at least the inputs shown above.
- Your program should keep asking for input and perform the necessary calculation continuously until a -1 is entered.

Homework 1B: Problem # 3.19 (5 points)

3.19   *(Interest Calculator)* The simple interest on a loan is calculated by the formula

```
interest = principal * rate * days / 365;
```

The preceding formula assumes that rate is the annual interest rate, and therefore includes the division by 365 (days). Develop a program that will input principal, rate and days for several loans, and will calculate and display the simple interest for each loan, using the preceding formula. Here is a sample input/output dialog:

```
Enter loan principal (-1 to end): 1000.00
Enter interest rate: .1
Enter term of the loan in days: 365
The interest charge is $100.00

Enter loan principal (-1 to end): 1000.00
Enter interest rate: .08375
Enter term of the loan in days: 224
The interest charge is $51.40

Enter loan principal (-1 to end): -1
```

- Your output must include at least the inputs shown above.
- Your program should keep asking for input and perform the necessary calculation continuously until a -1 is entered.

Homework 1C: Problem # 3.33 (5 points)

Note : Do not submit 3.32. It is provided for reference.

3.32 *(Square of Asterisks)* Write a program that reads in the side of a square and then prints that square out of asterisks. Your program should work for squares of all side sizes between 1 and 20. For example, if your program reads a size of 4, it should print

```
****
****
****
****
```

3.33 *(Hollow Square of Asterisks)* Modify the program you wrote in Exercise 3.32 so that it prints a hollow square. For example, if your program reads a size of 5, it should print

```
*****
*   *
*   *
*   *
*****
```

- The minimum square size is 3. Assume the user will enter a number between 3 and 20.

- For the output, execute the program at least 3 times and each time use different sizes to show 3 different hollow squares to demonstrate your code is working fine.

Hints

- Print one "*" and/or one space at a time repeatedly to accomplish the hollow square.

- You likely will need 4 loops.

- Review the multiplication table example in the Chapter 3 slides that uses loop within loop.

END OF REQUIREMENTS