CITC1310 Lab Assignment #3 **30 Points**

Choose **one** of the following programs:

**3a.** A bank in your town updates its customers’ account s at the end of each month. The bank offers two types of accounts: savings and checking. Every customer must maintain a minimum balance. If a customer’s balance falls below the minimum balance, there is a service charge of $10.00 for saving accounts and $25.00 for checking accounts. If the balance at the end of the month is at least the minimum balance, the account receives interest as follows:

1. Saving accounts receive 4% interest
2. Checking accounts with balances of up to $5000 more than minimum balance receive 3% interest; otherwise, the interest is 5%.

Write a program that reads a customer’s account number (int type), account type (char type; s or S for saving, c or C for checking), minimum balance that the account should maintain, and current balance. The program should then output the account number, account type (display saving for s or S, and checking for c or C), current balance, and new balance or appropriate **error** message (for invalid account type). **Use constant for service charges, and interests.**

Test your program by running it five times, using the following data (this is just a test data):

46728 S 1000 2700

87324 C 1500 7689

79873 s 1000 800

89832 C 2000 3000

98322 c 1000 750

**3b.** Write a program that calculates and prints the bill for a cellular telephone company. The company offers two types of service: regular and premium. Rates vary based on the type of service and are computed as follows:

Regular service**:** $10.00 plus first 50 minutes are free. Charges for over 50 minutes are $0.20 per minute.

Premium service**:**  $25.00 plus:

1. For calls made from 6:00 a.m. to 6:00 p.m., the first 75 minutes are free; charges for over 75 minutes are $0.10 per minute.
2. For calls made from 6:00 p.m. to 6:00 a.m., the first 100 minutes are free; charges for over 100 minutes are $0.05 per minute.

Your program should prompt the user to enter an account number, a service code (type char), and the number of minutes the service was used. A service code of r or R means regular service; a service code of p or P means premium service. Treat any other character as an **error**. Your program should output the account number, type of service (display Regular Service for r or R, and Premium Service for p or P), number of minutes the telephone service was used, and the amount due from the user. For the premium service, the customer may be using the service during the day and the night. Therefore, to calculate the bill, you must ask the user to input the number of minutes the service was used during the day and the number of minutes the service was used during the night. Use a Scanner object to get inputs from the keyboard (standard input).**Use constants for service charges,** **free minutes, and rates. For this program you may use switch statement to check for service type (optional).**

Your program should include source, and algorithm. Algorithm may be part of your overall, general comments (after your name and description of the program). Your program must start with a general comment which should include your name as programmer, description of the program, and any other pertinent information. The package will be **lab3**. You should submit your lab in a folder with your name and copy it to **N:\CITC\1310P01Java\HandIn**

The program will be **due**: ?