Assignment

Case Study: Community Parcel Locker

To enhance the convenient lifestyle of community living, the management of Boulevard Service Apartment decided to use the service of community parcel lockers for its residents. Three blocks of lockers are placed at the guard house to enable apartment residents to collect their parcels at their own convenience. For receiving the PIN code to collect parcel, each apartment unit is required to register to a centralised system with their *apartment unit number*, *owner's full name*, *contact number* and *password* to login to the centralised system.

The community parcel locker system is electronically managed and monitored by the centralised system. When a parcel is delivered to a locker, it will be registered to the recipient based on their *apartment unit number* and a *one-time PIN code* will be generated. Then the courier will inform the recipient for the delivery status.

To retrieve the parcel, the recipient needs to check the *one-time PIN code* in the centralised system and enter the *one-time PIN code* at the locker station.

After analyse the scenario described above, you and your team members have to do the following:

- Design the data structures for the parcel lockers system used in Boulevard Service Apartment; gather data on at least 20 apartment units and prepare them in text file(s). As each record is read, insert it into a list by using ***arrays of structures***.
- Develop the parcel lockers system with a menu-driven application OR multiple application programs using C++ for the residents of Boulevard Service Apartment and courier.

You may give additional assumptions for your application. To make your program more robust and avoid problems at run time, do as much status/error checking as you can in your program. You may also add more features and/or record more details of data in your program for enhancement.

Assessment and Submission

This is a group assignment. Form a group of maximum 5 members. Prepare a report (preferable using word processing software) to answer the questions given above.

Your **REPORT SHOULD CONTAIN** the following:

1. proposed solution to the problem
2. design of the application (structure chart and flowcharts/pseudocode)
3. C++ program
4. sample outputs of your program (test cases for all operations)
5. sample of input data (text file(s))

Do remember to include your group member list (name, ID, programme, lecture group and practical group) and specify group leader in the FIRST PAGE of your report. There is a link created in WBLE subject page for you to submit softcopy of your works (report, C++ source file(s) and input text file(s)). Save your works into a folder and compress the folder into a ZIP file. Name your folder and ZIP file with your group number and group leader's full name (e.g., G1_TinHuiHui.zip). Only group leader is required to upload the soft copy of your works by the deadline. Late submission will not be entertained.

This assignment will contribute 25% of your final mark. Refer to the marking sheet for the mark allocations for the report and C++ program(s). The report will be marked for *correctness*, *completeness*, *presentation style*, and *relevant use of diagrams/tables/graphs*, etc. And the C++ program will be marked for *correctness*, *completeness*, *program style*, *adequate testing* and *documentation/comments*. It's your responsibility to understand the requirements of the tasks and prepare well for your submission.

Plagiarism

It is important that your solutions to the assignment be your own work. It is perfectly acceptable to seek help and advice when completing the assignment, but this must not be taken to the point where what is submitted is in part someone else's work.