ALGORITHM & PROGRAMMING

Project 1

-Create console applications using C language

-Work with File IO (read and write data into file)

-Period: 3 weeks

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Project #1

❑ Employee management

- Write a C program for employee management in a company. An employee has `firstname`, `lastname`, `employee id`, `sex`, `year of birth`, `phone number`, `email`, `started working date`, `position`, `working status`. The working status attribute shows about the status of an employee whether he/she `is working`, `resigned`, `stopped`, `retired`. The program should be able to perform the CRUD operations on the company's database as follows:
  - ✓ Add a new employee
  - ✓ Display information for all employees working in the company
  - ✓ Update the information of an employee by his/her id
  - ✓ Delete an employee when there is someone requested to resign (delete by id)
  - ✓ Display information of a specific employee by his/her id
  - ✓ Show all employees sorted by started working date in descending order
  - ✓ Show all employees sorted by position in ascending order
  - ✓ Display all retired employees

```c
#include <stdio.h>
struct Employee{
    ....
};
struct Employee employees[1000];
int latestEmpolyeeIndex=0;

void addNewEmployee(){

}
.....
int main(){

}
```

CRUD: Create Read Update Delete

Project #1

❑ Employee management

- Be notice that, when the user stops the program, all employees information are written into file.

- When the program runs again, all existing employees will be retrieved back.

- We store information of the employee in the external `.txt` file. The file may look like the following using | for separating data. Or just use a space instead of |

```
No.|Employee id|Firstname|Lastname|Sex|Birth's year|Phone number|Email|Status|Started working date|Position
---------------------------------------------------------------------------------------------------------
1|112|Dara|Sok|M|1990|011020304|dara@gmail.com|working|20-12-2018|Manageer
2|113|Jack|Hen|M|1990|012020304|jack@gmail.com|resigned|10-1-2015|Driver
3|114|Rose|Hok|F|1991|015020304|rose@gmail.com|retired|20-2-2016|Accountant
4|115|Sean|Sen|F|1992|016020304|sean@gmail.com|stopped|1-11-2018|Receptionist
```

An example of the external .txt file for storing the employees information

Project #2

❑ Phonebook management

- Write a C program to do a phonebook management. A phonebook consists of `user's name, phone number, created date`. The program should be able to perform simple Phonebook operations like in your mobile where you can add, display, modify, and search phonebook. The program should be able to perform the CRUD operations on the phonebook's database as follows :

  - ✓ Add new phone book
  - ✓ List all phonebooks
  - ✓ Update a phonebook
  - ✓ Search phonebook by name or by phone number
  - ✓ Delete phonebook

CRUD: Create Read Update Delete

```c
#include <stdio.h>
struct Phonebook{
    ....
};
struct Phonebook pb[1000];
int latestPhoneBookIndex=0;

void addNewPhonebook(){

}
.....
int main(){

}
```

Project #3

❑ Diary note management

▪ Write a C program to store a diary note. The program should be able to perform the CRUD operations on the diary note's database as follows

  ✓ Create diary note

  ✓ Show all diary

  ✓ Show detail of a specific diary by name or created date

  ✓ Update a diary

  ✓ Show all diary from a created date to another created date

  ✓ Delete a diary

CRUD: Create Read Update Delete

Other projects

- Project proposed by students

  - E.g: Arduino IoT projects, ……..

  - ……..

  - If you have any, inform me ASAP within a week.

Project deadline

Important dates

- 3-week project

- Submission Deadline of Program: **TBD**

- Demo and Presentation: **TBD**

- Slide and report submission: During presentation

  - The report may consist of project goal, functionality, task division, completed and uncompleted functionality, difficulty, perspective, conclusion, …etc.

  - It should also include feedback from presentation

Q&A

Progress of Mini-project

Working on project!