

Hong Kong Diploma of Secondary Education Examination

Information and Communication Technology

School-based Assessment

Option D: Software Development

Title: Phone Book Directory

School: Cheung Sha Wan Catholic Secondary School

## Content

### **Chapter1 – Introduction**

1.1 Background

2.2 Situation

### **Chapter2 - Design and Implementation**

2.1 Brief description

2.2 Design of the main program

2.3 Design of the sub programs

2.4 User Guide

2.5 Problem on producing the program

### **Chapter3 - Testing**

### **Chapter4 - Conclusion**

4.1 evaluation

4.2 future plans

4.3 Schedule

4.4 Appendix

Source Codes

# **Introduction**

## 1.1 Background

Nowadays, with the number of function of the mobile phone increased a lot, it implies that mobile phone become a part of our life. Phone book directory function is also an important function on the mobile phone, computer. As it makes our life become more convenience and efficient, for example, people do not memorize the phone number of friends, workmates and relatives and the phone book directory help us to keep the data temporally. However, the problems come when they lost their technological product, they may lost all the numbers in the phone book directory. Also, most of the phone book directory do not support search function and do not even have a sort function. Although we remember some letter of the phone numbers, we do not know who he/she is or the phone number correct or not.

## 2.2 Situation

In the past, phonebook just contain the names and phone number. But nowadays technology has becoming more and more complex, people can contact each other via different other ways like email.

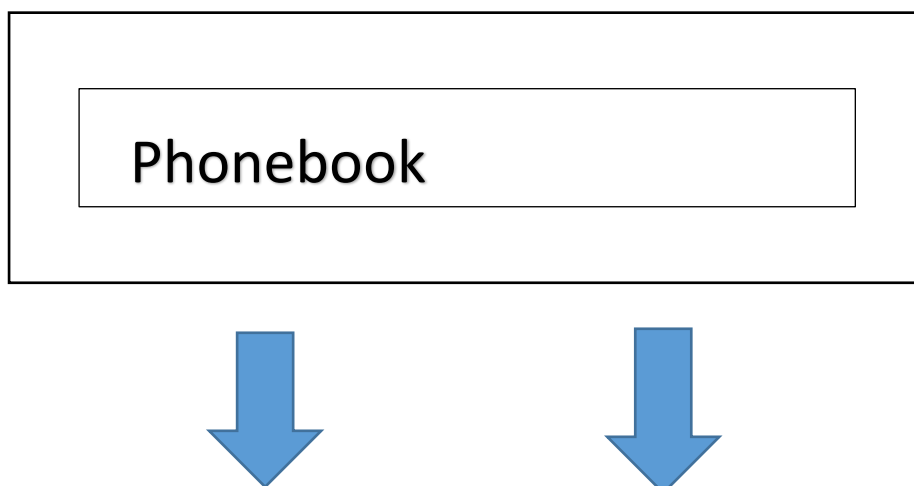
As a student of learning ICT, I am going to set up a phonebook program with different function. It means that in the program, not only are phone number and names, email, instagram user name, wechat ID can also be added. It will become more useful to people nowadays.

## **Design and Implementation**

### **2.1 Brief description**

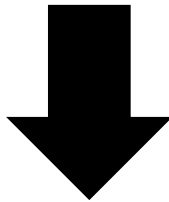
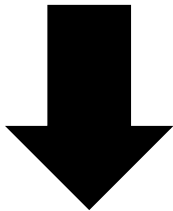
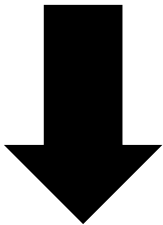
I decided to use Dev-pascal for the phonebook coding. For the phonebook, I have two main objectives. First is it must be user friendly, everyone can know how to use it. If a program just can use by high-knowledge technician, it is a useless program. Second is the data can be input easily and read it easily. For one of the user of many apps in phone or computer, I really dislike that very complex apps.

### **2.2 Design of the main program**



Read record

Open



insert

Searchrecord

List

exitProgram

Delete

Edit

saveRecord

## **2.3 Design of the sub programs**

This program is a phone book. It consists of 5 elements, a person's name, phone number, email address, instagram user name and wechat ID. There are 6 procedures in the main program.

### **1. Insert**

It is used to add a person's data to store in the text file. A procedure write file is used in the main program. You could simply write the person's data you want to added.

### **2. List**

It is used to show all the elements which have successfully saved in the text file. All data will be showed in the program.

### **3. Delete**

4. It is used to delete current data stored on the text file. Users only needs to type the number of the data you want to delete. All of this person will be deleted automatically.

### **5. SearchrRecord**

6. used to search a person's data which have saved in the text file. A new feature is that if the name searched is not found in the text file, you will be

asked if you want to add data. If the answer is yes, it will run the procedure of add data.

7. Edit

8. It is used to let user change the incorrect saved information.

9. SaveRecord

10. used to let user save the information in text file

11.Exitprogram

This is the text file which stores all data for the phone book. For each person, the first column is his/her name, the second column is the phone number and the third column is the email address, the forth column is the instagram user name, the fifth column is wechat ID respectively

## **2.4 User Guide**

Firstly, users may open my phone book. Insert your information all the function in above. After that you can find out the information when you use my phone next times.

## **2.5 Problem on producing the program**

At the very beginning when producing this procedure, I could not search the right person's data when the name typed, it always show all of the people in search procedure.

Then I find that is my input procedure have some error.

Finally I successfully solve the problem. Now the program can run smoothly.

## **Testing**

The first thing I will test is can it successfully create a new phonebook, when I pressed 1 and entered, it showed me successfully created a phonebook and there have a text created in the desktop



This is the page to input the information, you can first insert your friend phone number and name.

After insert your data, you can continue input another people information, or leave the input page to contact page. Such as wechat,. Snapchat, etc.

When you successfully input the data, the number of contact may increase.

the second function of the program, list the contact. This function used to list all your information which you had insert. How many information you insert that you may see how many contact appear.

Next is the delete function, when you press the number of the contact you want to delete, you can delete it very easily.

After you finish your correction it will show you the updated contact.

About the search function, you can search all your contact you had insert yet. Enter the name or other information it will show the information you need successfully

the edit function, you may use edit function to correct your information you want.

This is the processing of edit the data, first choose the contact you want to edit, after that correct the information and enter

We can see the name of first input data has successfully edited.

When you use the program and forget to save, it may notice you when you close the app.

## **Conclusion**

### **4.1 Evaluation**

I think the program has made to be very user friendly and useful in nowadays. There are not much complicated source codes and so amendments could be done more easily to meet every users' requirements.

From the whole process of the program, I have shown positive attitude in learning more about how to improve the function of my programs. I also feel surprised that I have ability to finish the whole program in a given period of time. I feel success after finish this phonebook.

### **4.2 Future Plans**

Using a better software for a better interface

Making more and better functions to improve the quality

Learn more skills in programing

### **4.3 Schedule**

Design of Schedule :      10/9/2016 - 20/9/2016

Program Coding: 21/9/2016 - 31/10/2016  
Testing and Debugging: 24/11/2016 - 31/11/2016  
Writing Report: 7/12/2016 - 31/12/2017

## **4.4 Appendix**

References:

www.hkeaa.edu.hk

www.eclass.cswcss.edu.hk

www.google.com

<http://en.wikipedia.org>

### **Source code**

```
program Phonebook;  
  
uses crt;  
  
type inf=array[1..100] of string;  
  
var name,phone,email,facebook,wechat,data:inf;  
    save,fun,count:integer;  
  
procedure open; {Use for write out your new phone book}  
  
var outfile:text;
```

```

begin

    assign(outfile, '.\int.txt');

    rewrite(outfile);

    close(outfile);

    writeln('Your phonebook is now ready to use. ');

    writeln;

    writeln('Press <ENTER> to start the phone book. ');

    readln;

end;

```

```

procedure changeletter(var change:string); {Use for changing the data
to capital letter}

```

```

var count:integer;

```

```

begin

    for count:=1 to length(change) do

        begin

            if (change[count]>='a') and

(change[count]<='z') then

change[count]:=chr(ord(change[count])-32);

```

end;

end;

procedure writelist; {Use for write out the list}

var forloop:integer;

begin

for forloop:=1 to count do

writeln(forloop,' ',name[forloop],'

',phone[forloop],', ',email[forloop],', ',facebook[forloop],'

',wechat[forloop]);

end;

procedure search(var searchname,searchingname:string;var

middle:integer;var found:boolean);

{Use for search line of data}

var top,bottom:integer;

begin

found:=false;

top:=1;

bottom:=count;

```

changeletter(searchname);
repeat
    middle:=(top+bottom)div 2;
    searchingname:=name[middle];
    changeletter(searchingname);
    if searchname>searchingname then
        top:=middle+1
    else
        if searchname<searchingname then
            bottom:=middle-1
        else
            found:=true;
        until found or (top>bottom);
end;

```

procedure arrange; {Use for arrange the data}

```
var readdata,hold:string;
```

```
time,time2:integer;
```

```
begin
```

```
time:=0;
```

```

time2:=1;

readdata:=data[count]+' ';

repeat

    hold:="";

    time:=time+1;

    while readdata[time2]<>' ' do

        begin

            hold:=hold+readdata[time2];

            time2:=time2+1;

        end;

    time2:=time2+1;

    if time=1 then

        name[count]:=hold;

    if time=2 then

        phone[count]:=hold;

    if time=3 then

        email[count]:=hold;

until time=3;

for time2:=1 to count do

    for time:=1 to count do

```



```

begin
    if name[time2]<name[time] then
        begin
            hold:=name[time2];

name[time2]:=name[time];

            name[time]:=hold;
            hold:=phone[time2];

phone[time2]:=phone[time];

            phone[time]:=hold;
            hold:=email[time2];

email[time2]:=email[time];

            email[time]:=hold;
        end;
    end;
end;

procedure readRecord; {Use for read the old record}

```

```
var outfile:text;

begin

    assign(outfile,'.\int.txt');

    reset(outfile);

    count:=0;

    while eof(outfile)=false do

        begin

            count:=count+1;

            readln(outfile,data[count]);

            arrange;

        end;

    close(outfile);

end;
```

procedure edit; {Use for edit the data}

```
var want:integer;

    want2,want3:string;

    anymore:char;

begin

    repeat
```

```
writeln('Here is the contact list:');  
  
writeln;  
  
writelst;  
  
writeln;  
  
write('Which record you want to edit? ');  
  
readln(want);  
  
write('Which one you want to edit? ');  
  
readln(want2);  
  
write('What is the new data? ');  
  
readln(want3);  
  
writeln;  
  
changeletter(want2);  
  
if want2='NAME' then  
    name[want]:=want3;  
  
if want2='PHONE' then  
    phone[want]:=want3;  
  
if want2='EMAIL' then  
    email[want]:=want3;  
  
write('Anymore you want to edit? (Y/N) ');  
  
readln(anymore);
```

```
        writeln;

        until (anymore='N') or (anymore='n');

        writeln('Press <ENTER> to go back. ');

        readln;

    end;
```

```
procedure insert; {Use for insert the new data}

var anymore:char;

    begin

        repeat

            count:=count+1;

            write('Enter the name, phone, email,

facebook and wechat : ');

            readln(data[count]);

            arrange;

            write('Anymore? (Y/N) ');

            readln(anymore);

            writeln;

        until (anymore='N') or (anymore='n');

        writeln('Press <ENTER> to go back. ');
```

```
        readln;

        save:=0;

    end;
```

```
procedure list; {Use to list out the phone book}
```

```
    begin

        writeln('Here is the contact list:');

        writeln;

        writelist;

        writeln;

        writeln('Press <ENTER> to go back.');
```

```
        readln;

    end;
```

```
procedure delete; {Use for delete the data}
```

```
var want, i:integer;    {i is use for forloop}
```

```
    more:char;
```

```
    begin

        writeln('Here is the contact list:');

        writeln;
```

```

writelst;

writeln;

repeat

    write('Which record you want to delete? ');

    readln(want);

    writeln;

    for i:=1 to count do

        if i>=want then

            begin

                name[i]:=name[i+1];

                phone[i]:=phone[i+1];

                email[i]:=email[i+1];

            end;

    count:=count-1;

    writeln('Here is the updated contact list:');

    writeln;

    writelst;

    writeln;

    write('Anymore record to be deleted? (Y/N)

');

```

```
        readln(more);

        writeln;

        until (more='N') or (more='n');

        writeln('Press <ENTER> to go back. ');

        readln;

        save:=0;

    end;
```

```
procedure searchRecord; {Use for search the data by name}
```

```
var searchname,searchingname:string;
```

```
    bingo:integer;
```

```
    found:boolean;
```

```
    anymore:char;
```

```
    begin
```

```
        repeat
```

```
            write('Enter the name that you want to
```

```
search: ');
```

```
            readln(searchname);
```

```
search(searchname,searchingname,bingo,found);
```

```

        writeln;

        if found then

            begin

                writeln('Here is the information

you required:');

                writeln;

                writeln('Name            Phone

Email            facebook            wechat');

                writeln('=====

=====');

                for bingo:=1 to count do

                    begin

                        searchingname:=name[bingo];

                        changeletter(searchingname);

                        if

searchingname=searchname then

                            writeln(name[bingo],phone[bingo]:19,email[bingo]:23);

```



```

end;

end

else

    writeln('The record cannot be found!');

    writeln;

    write('Any more you want to search? (Y/N)

');

    readln(anymore);

    writeln;

    until (anymore='N') or (anymore='n');

    writeln('Press <ENTER> to go back. ');

    readln;

end;

```

```

procedure saveRecord; {Use for saving the data}

var outfile:text;

begin

    assign(outfile,'G:\Pascal\int.txt');

    rewrite(outfile);

    for count:=1 to count do

```

```
begin

    write(outfile,name[count],' ');

    write(outfile,phone[count],' ');

    writeln(outfile,email[count],' ');

end;

close(outfile);

writeln('Your data had been saved. ');

writeln;

writeln('Press <ENTER> to go back. ');

readln;

save:=1;

end;
```

```
procedure exitProgram; {Use for exit the program}
```

```
var finish:char;
```

```
begin

    if save=0 then

        begin

            write('Your data had not been saved, do

you want to save it now? (Y/N)');
```

```

        readln(finish);

        if (finish='Y') or (finish='y') then

            saveRecord;

        end;

    clrscr;

    writeln('Thank you for using the phonebook!');

    writeln;

    writeln('Press <ENTER> to go back. ');

    readln;

end;

begin

    count:=0;

    save:=0;

    writeln('Welcome to our phone book!');

    writeln;

    writeln('1. Open a new phone book');

    writeln('2. Read the original phone book');

    write('Which function you want to use? ');

    readln(fun);

    clrscr;

```

case fun of

1:open;

2:readRecord;

end;

repeat {Start to use the phonebook}

clrscr;

textcolor(lightgreen);

writeln('Welcome to our phonebook!');

writeln('Number of contact = ',count);

writeln;

writeln('1. Add Contact');

writeln('2. List Contact');

writeln('3. Delete Contact');

writeln('4. Search Contact');

writeln('5. Edit Contact');

writeln('6. Save Record');

writeln('7. Exit');

write('Which function you want to use? ');

readln(fun);

clrscr;

case fun of

1:insert;

2:list;

3:delete;

4:searchRecord;

5:edit;

6:saveRecord;

7:exitProgram;

end;

until fun=7;

end.