HOMEWORK 1

You will create a phone book management program using both Java and C++. As a parent class, you have to implement the Person class. As child classes, you have to implement Work, Friend and Family. Class Person will have three attributes; first & last names and phone number. It will also have seven functions; those of setting and printing each of attributes, and that of printing all attributes. More information about parent class Person can be found below.

```
Class Person
{
  public:
      Person( string &, string &, int &);
      void setFirstName( string &); //set firstName string
      getFirstName() ; //return firstName
      void setLastName(string &);
      string getLastName() ;
      setPhoneNumber(int &);
      //02-XXXX-XXXX or 010-XXXX-XXXX
      int getPhoneNumber() ;
      void print();
  private:
      String fistName;
      String lastName;
      int phoneNumber;
};
```

Although every child class inherits the attributes from the parent class, each has its unique attributes. You have to implement three child classes; work, friend and family, using the information provided below.

```
Class Work : public Person
   { public:
      Work(string &, string &, int &, string &);
      void setTeam(string); //set team
      string getTeam() ; //return team
      void print() ; //print the work object, using the parent function to get
      the attribute
   private:
      string team; //team that the person is in
};


Class Friend : public Person
   { public:
      Friend(string &, string &, int &, int &);
      void setAge(int); //set age
      int getAge() ; //return age
      void print() ; //print the work object, using the parent function to get
      the attribute
   private:
      int age; //age of friend
};


Class Family : public Person
   { public:
      Family(string &, string &,  int &,  string &);
      void setBirthday(string); //set birthday (YYMMDD) string
      getBirthday() ; //return birthday
      int dDay() ; //calculate the date difference between the birth-
      day and current time
      void print(); //print the work object, using the parent function
      to get the attribute
   private:
      string birthday; //birthday of family
};
```

After you have implemented both the parent and child classes, you must define a data structure to store a phone book, which consists of "Person." In order to ensure dynamic allocation, you must use the vector to store phone book. In java, you must use the ArrayList which also provides dynamic allocation.

```
In C++
  #include <vector>
  vector<Person> phoneBook;

In Java
   import java.util.ArrayList;
  List<Person> phoneBook = new ArrayList<Person>();
```

Since you have defined the classes and the data structure, you have to fill the data structure. In order to receive information which you need to declare each object, you must have an interactive console program. The interactive console program will display appropriate prompts and receive information from the users. Three functionalities that you have to implement are adding a new person, removing a person and printing the phone book. You must follow the same format as attached additional constraint file.

Submission –

Submit zip file(your source code and report) to etl

Deadline : 04-12-2019

★ Caution

- **Over the deadline ;**
  after 04-12-2019 – 20% deduction per day
- **More than 2days late - 0 point**
- **Compile error - 0 point**
- **Check a code copy using Clone checker – related students 0 point**
- **You must follow good programming style which discussed in class**

★ Source Code

Visual, gcc file, both are acceptable.

★ Report

- **Include specific explanation**
- **Include screen shots of the file.**
- **PDF, DOC, HWP file.**