

Question

A Malaysian Identity Card (IC) number has some unique features. Besides its main purpose for personal identification, the number also serves as a mini database which stores information about the card holder. Among the information that can be extracted from the IC number are the date of birth (DOB) and gender.

An IC number consists of twelve digits: the first six digits, which are in the form of *YYMMDD* is the DOB, and the last digit represents the gender. The gender is assumed to be “Female” if the digit is even or “Male” otherwise. For example, an IC with digits of **990618105053** indicates that the DOB is **18 June 1999**, and the gender is “Male”.

Based on the above mentioned information, write a complete C++ program that determines the personal information of a Malaysian. The program should read data from an input file containing a list of IC numbers and names (refer Figures 1 and 2 for examples of input files). For programming design flexibility, a user enters the name of the input file.

Note: Two files named “input1.txt” and “input2.txt” have been provided to be used for testing your program..

The program should then produce several output files that contain the information of persons in the list; *i.e.*, an output file for each person. The information printed in each output file includes the name, gender and age of the person. Furthermore, the name of the created output file is generated from the IC number of the person added with a file extension “.txt”. Figures 3 and 4 show examples of created output files.

Note: As for the calculation of age, assume the current year is 2014 and everyone is born before the year of 2000.

The program should also handle non-existing input files. In such cases, the program will not produce an output file and prompt the user appropriate error messages as shown in Figure 7.

Sample runs of the program are shown in Figure 5 until Figure 7.

970723085884	NUR HIDAYAH ABDUL HALIM
980722065870	SITI AMIRAH ZULKIFLI
930826035804	NUR AMALEENA HARUN
921227036273	RAZALI ABU BAKAR
931117015173	OTHMAN KAMARUL
920305036284	SITI NURHAZILA HUSSAIN
940727145938	NUR FATIHA KAMARUDDIN
951230067835	MUHAMMAD SHAHRUL NIZAM FAZLAN
920908065612	RINA ABDUL SALAM
920802015697	HAMID JALAL
901222055120	NUR HAKIMAH MOHAMAD ZULHISYAM

Figure 1: An example of input file named “input1.txt”

990618105053	ABDUL RAHMAN AKMAL
931010106016	HAMIDAH MUHAMAD
940228145605	ZULKAFI ABDUL MALIK
940612147759	YAHYA MOHAMAD
910905085597	MUHAMMAD ELIAS MUHAMMAD HISYAM

Figure 2: An example of input file named “input2.txt”

NUR HIDAYAH ABDUL HALIM Female 17 years old

Figure 3: An example of output file named “970723085884.txt”

MUHAMMAD ELIAS MUHAMMAD HISYAM Male 23 years old
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Figure 4: An example of output file named “910905085597.txt”

Enter the input file: input1.txt The information of each person has been written into the corresponding file. Please check your folder.
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Figure 5: An example run of the program with a valid input file. The bold text indicates input from the user.

Enter the input file: input2.txt The information of each person has been written into the corresponding file. Please check your folder.
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Figure 6: Another example run of the program with a valid input file. The bold text indicates input from the user.

Enter the input file: input3.txt Error! Unable to open the input file. No output file is created.
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Figure 7: An example run of the program with an invalid input file. The bold text indicates input from the user.