********** Cover Page **********

Class: CV
Name: Frank Yournet
Project: Project 0B
Project Name: C++ project submission exercise
Language: C++
Due Date: 9/4/2024 before 12:00PM
Submit Date:

Top Level algorithm steps

Step 0: inFile ← open from argos[1]
outFile ← open from argos[1]

Step 1: numOfRows ← read from inFile

Step 2: Persons people[] ← new Person[numOfRows]; //create an array of persons

Step 3: index ← 0 //set initial counter to 0

Step 4: line ← read one row of data from inFile

Step 5: name, age ← parse the name and age from the line

Step 6: p ← new Person(name, age) //create the Person object

Step 7: people[index++]=p; //save the person

Step 8: repeat steps 4 t0 7 while index < numOfRows

Step 9: For each person in people array, print the person

Step 10: close inFile, outFile

Illustration: None

********** Source Code **********

```
#include <iostream>
#include <fstream>
#include <string>
using namespace std;

class Person{
   private:
      string name;
      int age;
   public:
      Person(string name, int age){
         this->name = name;
         this->age = age;
      }
      void printPerson(ofstream & ofile){
         ofile << name << " is " << age << " years old. \n";
      }//end print
};//end class Person

int main(int argc, char** argv){
   if(argc != 3){
      cout << "Your command line needs to include two parameters: input file and output file \n";
      exit(1);
   }//end if argc

   ifstream inFile(argv[1]);
   if(!inFile.is_open()){
      cout << "Unable to open the input file" << endl;
      exit(1);
   }

   ofstream outFile(argv[2]);
   if(!outFile.is_open()){
      cout << "Unable to open output file" << endl;
      exit(1);
   }

   int numOfPeople;
   inFile >> numOfPeople;
   outFile << "*** There are " << numOfPeople << " people ***" << "\n";
   Person** people = new Person*[numOfPeople];
```

```
    string Tname;
    int Tage;
    int index = 0;
    while(index < numOfPeople){
        inFile >> Tname;
        inFile >> Tage;
        Person* p=new Person(Tname, Tage);
        people[index++] = p;
    }//end while

    for(int index = 0; index < numOfPeople; index++){
        people[index]->printPerson(outFile);
    }//end for

    for(int index = 0; index < numOfPeople; index++){
        delete people[index];
    }

    delete[] people;

    inFile.close();
    outFile.close();
    exit(0);
}//end main
```

********** Program Input **********

```
4
Emily 24
Ben 29
Mark 22
Lisa 17
```

********** Program Output **********

```
*** There are 4 people ***
Emily is 24 years old.
Ben is 29 years old.
Mark is 22 years old.
Lisa is 17 years old.
```