

```
1  #include <stdlib.h>
2  #include <stdio.h>
3  #define MAX_NAME_LENGTH 100
4  #define MAX_DATA_BASE_LENGTH 100
5
6  // Declaration of person struct
7  typedef struct person
8  {
9      char firstName[MAX_NAME_LENGTH];
10     char lastName[MAX_NAME_LENGTH];
11     unsigned int phoneNumber;
12 } Person;
13
14 // Function declarations
15 void loadScvFile(Person *dataBase[], char *fileName);
16 void addPersonToCsvFile(char *filename);
17 void findPersonFromPhoneNumber(char *fileName);
18
19 int main() {
20     char fileName[MAX_NAME_LENGTH];
21     Person *dataBase[MAX_DATA_BASE_LENGTH];
22
23     puts("*****");
24     puts("Welcome to Assignment 9");
25     puts("*****");
26
27     // Get file name from user
28     printf("\nEnter data base name: ");
29     scanf("%s", fileName);
30
31     // Load SCV file into database
32     loadScvFile(dataBase, fileName);
33
34     while(1) {
35         int controlVar = 0;
36
37         printf("\n1: Add person to %s.\n2: Search %s on Phone Number.\n3:
Close Program.\nPlease choose option: ", fileName, fileName);
38         scanf("%1d", &controlVar);
39         puts("");
40
41         if (controlVar==1)
42         {
43             addPersonToCsvFile(fileName);
44         }
45
46         if (controlVar == 2) {
47             findPersonFromPhoneNumber(fileName);
48         }
49
50         if (controlVar == 3)
51         {
52             break;
53         }
54     }
55
56     puts("Program closing...");
57     return 0;
58 }
59
60 void loadScvFile (Person *dataBase[], char *fileName) {
```

```
61 // Open file
62 FILE *fPtr = fopen(fileName, "r+");
63 // Creat new file is file does not exists.
64 if (fPtr == NULL)
65 {
66     printf("Creating SCV file %s...\n", fileName);
67     fPtr = fopen(fileName, "w+");
68 }
69
70 // Load SCV file into database
71 char *line = NULL;
72 size_t len = 0;
73 size_t counter = 0;
74
75 while ((getline(&line, &len, fPtr)) != -1)
76 {
77     Person person;
78     sscanf(line, "%[^,]%*[, ]%[^,]%*[, ]%u", person.firstName,
person.lastName, &person.phoneNumber);
79     dataBase[counter] = &person;
80     counter++;
81 }
82
83 // Close file
84 free(line);
85 fclose(fPtr);
86 }
87
88 void addPersonToCsvFile (char *filename) {
89     // Open file in append mode
90     FILE *fPtr = fopen(filename, "a+");
91
92     // Creat Person struct
93     Person person;
94
95     // Get first name from user.
96     printf("Enter First Name: ");
97     scanf("%s", person.firstName );
98
99     // Get last name from user.
100    printf("Enter Last Name: ");
101    scanf("%s", person.lastName );
102
103    // Get phone number from user.
104    printf("Enter Phone Number: ");
105    scanf("%d", &person.phoneNumber);
106
107    // Append person to SCV file.
108    fprintf(fPtr, "\n%s, %s, %d", person.firstName, person.lastName,
person.phoneNumber);
109    fclose(fPtr);
110 }
111
112 void findPersonFromPhoneNumber (char *fileName) {
113     // Get phone number to search for from user.
114     unsigned int phoneNumber;
115     printf("Enter Phone Number To Search For: ");
116     scanf("%d", &phoneNumber);
117
118     // open file
119     FILE *fPtr = fopen(fileName, "r");
120
```

```
121 // Search for phoneNumber
122 char *line = NULL;
123 size_t len = 0;
124 char match = 0;
125 Person person;
126
127 while ((getline(&line, &len, fPtr)) != -1)
128 {
129     sscanf(line, "%[^,]%*[, ]%[^,]%*[, ]%u", person.firstName,
person.lastName, &person.phoneNumber);
130     if (phoneNumber == person.phoneNumber) {
131         puts("Match found:");
132         printf("%s, %s, %d\n", person.firstName, person.lastName,
person.phoneNumber);
133         match = 1;
134         break;
135     }
136 }
137 if (match == 0) {
138     puts("No match found.");
139 }
140
141 // Close file
142 free(line);
143 fclose(fPtr);
144 }
```