

Programming Design Worksheet - Redfield

for CS1310 (programs 2-7) and CS1311 (programs 1-6)

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First name **Davide** Last name **Russillo**

Design for program name **Family Data**

DATA

Variables needed in WORDS for main and globally

GLOBAL:

current date in mm-dd-yyyy format

family structure with name, street, csz, relation, and birthday

MAIN:

input file pointer

output file pointer

C DECLARATIONS for main & global

GLOBAL:

char current_date[10] = "11-19-2024"; (example date)

struct family {

 char name[50];

 char street[50];

 char csz[50];

 char relation[50];

 char birthday[11];

};

struct family people[7];

MAIN:

FILE *infile;

FILE *outfile;

Algorithm to PSEUDOCODE level for each function

(remember to indent under if, switch, while, do-while, for)

main:

infile = fopen("familyin.txt");

outfile = fopen("familyout.txt");

read_data from infile

write_data to outfile

close infile

close outfile

other functions (bold the names): (put them before main in the program!)

```

void fprintf_age(FILE *out, char *birthday)
    declare and set birthday_month to atoi of birthday
    declare and set birthday_day to atoi of birthday+3
    declare and set birthday_year to atoi of birthday+6
    declare and set current_month to atoi of current_date
    declare and set current_day to atoi of current_date+3
    declare and set current_year to atoi of current_date+6

    if current_month is less than birthday_month
        print current_year - birthday_year - 1 to out
    else if current_month is more than birthday_month
        print current_year - birthday_year to out
    else if current_day is less than birthday_day
        print current_year - birthday_year - 1 to out
    else
        print current_year - birthday_year to out

void fprintf_datef(FILE *out, char *date)
    declare and set month to atoi of date
    declare and set day to atoi of date+3
    declare and set year to atoi of date+6

    switch on month
        case its one
            print January to out
        case its two
            print February to out
        case its three
            print March to out
        case its four
            print April to out
        case its five
            print May to out
        case its six
            print June to out
        case its seven
            print July to out
        case its eight
            print August to out
        case its nine
            print September to out
        case its ten
            print October to out
        case its eleven
            print November to out
        case its twelve
            print December to out
        otherwise (default outcome)
            print ERROR: INVALID MONTH VALUE to out
    print day, year to out

```

```

void read_data(FILE *inputfile)
    declare line string
    declare person integer for iteration
    for each person, until the seventh person
        set line to line in inputfile
        set last character in line to \0 to remove newline
        set name of index person in people to line
        set line to line in inputfile
        set last character in line to \0 to remove newline
        set street of index person in people to line
        set line to line in inputfile
        set last character in line to \0 to remove newline
        set csz of index person in people to line
        set line to line in inputfile
        set last character in line to \0 to remove newline
        set relation of index person in people to line
        set line to line in inputfile
        set last character in line to \0 to remove newline
        set birthday of index person in people to line

void write_data(FILE *outputfile)
    declare person integer for iteration
    for each person until the seventh person
        print person's name and relation to stdout
        print person's name and relation to outputfile
        print person's street to stdout
        print person's street to outputfile
        fprintf_date of person's birthday to stdout
        fprintf_date of person's birthday to outputfile
        print newline to stdout
        print newline to outputfile
        print person's csz to stdout
        print person's csz to outputfile
        fprintf_age of person's birthday to stdout
        fprintf_age of person's birthday to outputfile
        print two newlines to stdout
        print two newlines to outputfile

```

OTHER part of the design (see assignment - *input or sample output*)

	name	street	csz	relation	birthday
people[0]	Davide Russillo	1 Camino Santa Maria	San Antonio, Texas, 78228 USA	Self	06-07-2006
people[1]	Serena Manfreda	Goethestrasse 15	Berlin, Berlin, 10625 Germany	Mother	08-21-1978
people[2]	Roberto Russillo	Goethestrasse 15	Berlin, Berlin, 10625 Germany	Father	05-28-1976
people[3]	Dafne Russillo	Goethestrasse 15	Berlin, Berlin, 10625 Germany	Sister	07-14-2016
people[4]	Donato Manfreda	Via I Maggio 25	Picerno, Potenza, 85055 Italy	Grandfather	12-17-1939
people[5]	Lidia Caggiano	Via I Maggio 25	Picerno, Potenza, 85055 Italy	Grandmother	12-12-1951
people[6]	Rossella Manfreda	Corso Umberto I 37	Picerno, Potenza, 85055 Italy	Aunt	04-02-1972

familyin.txt:

Davide Russillo

1 Camino Santa Maria

San Antonio, Texas, 78228 USA

Self

06-07-2006

Serena Manfreda

Goethestrasse 15

Berlin, Berlin, 10625 Germany

Mother

08-21-1978

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Berlin, Berlin, 10625 Germany

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Aunt

04-02-1972