```c
#include <stdio.h>
#include <stdlib.h>
#include <conio.h>
#include <string.h>
#include <math.h>
#include <stdlib.h>
#include <ctype.h>



typedef struct year{
int yr;
char * mnth[12];
int day[366];
char * wkdy[366];
}year;


void clearBuffer();
void valid(int ** a, int ** b, int ** c);

int main()
{


char * dyofwk[7] = {"Monday", "Tuesday","Wednesday","Thursday","Friday","Saturday","Sunday"};
char * month[12] = {"January","February","March","April","May","June","July","August","September","October"
,"November","December"};
int dys[31]= {1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31};
int num;
int feb = 28;
int leap = 29;
int thirty = 30;
int rest = 31;
num = rest;




int * usdy = calloc(2, sizeof(int));
int * usm = calloc(2, sizeof(int));
int * usy = calloc(2, sizeof(int));
int ** userday =&usdy;
int ** usermonth = &usm;
int ** useryear = &usy;
int * rng = calloc(1, sizeof(int));
int * tdyd = calloc(2, sizeof(int));
int * tdym = calloc(2, sizeof(int));
int * tdyy = calloc(2, sizeof(int));
int ** todayday = &tdyd;
int ** todaymonth = &tdym;
int ** todayyr = &tdyy;
int rngmp = 12;
int * rngm = &rngmp;
double countm = 0;
double countd = 0;
int bookrng;
int bookyear = 1900;
int bookdays = 0;
char * bookdow = calloc(10, sizeof(char));
int bdc = 0; //number of days to your birthdate from 01.01 that year

printf("Welcome to the most accurate calendar. This calender will output every date including day of week
between any date of\nyour choosing and the current date. It will also give you information on age in days,
weeks, months and years including \nwhat day of the week you were born.\n\n");
printf("Please note this program can process dates starting from 1st January 1901 onwards.\nSelection of
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date before will cause program to not execute.");
 64  printf("\n\nPlease enter today's date in format dd mm yyyy. Press return key after each entry.\n");
 65
 66  scanf("%d", *todayday);
 67  clearBuffer();
 68  scanf("%d", *todaymonth);
 69  clearBuffer();
 70  scanf("%d", *todayyr);
 71  clearBuffer();
 72
 73
 74  valid(todayday, todaymonth, todayyr);
 75
 76  printf("Please enter a date of birth in format dd mm yyyy. Press return key after each entry.\n");
 77
 78  scanf("%d", *userday);
 79  clearBuffer();
 80  scanf("%d", *usermonth);
 81  clearBuffer();
 82  scanf("%d", *useryear);
 83  clearBuffer();
 84
 85  valid(userday, usermonth, useryear);
 86
 87  *rng = (**todayyr) - (**useryear);
 88
 89  bookrng = **useryear - bookyear;
 90  for(int u =0; u < bookrng ; u++){
 91
 92      if(bookyear % 4 != 0){bookdays+= 365;}
 93      if(bookyear % 4 == 0){bookdays+=366;}
 94      bookyear++;
 95  }
 96  /*int nm=rest;
 97  for(int u = 0; u < usermonth -1; u++){
 98
 99      for(int y =0; y<nm; y++){
100          bookdays++;
101
102
103      if(u ==1){nm=feb;}
104      if(u== 3 || u == 5 || u ==8 || u == 10){nm = thirty;}
105      if(u== 0 || u == 2 || u ==4 || u == 6 || u == 7 || u==9 || u==11){nm = rest;}}
106  }
107  bookdays+=userday;
108  */
109  //printf("%d", bookdays);
110  int n = 0;
111  int dn;
112  for(int q = 0; q<bookdays; q++){
113        if(n==7){n=0;}
114      strcpy(bookdow, dyofwk[n]);
115      if(q == bookdays -1){dn = n;}
116      n++;
117
118  }
119  //printf(" %d %s", dn, bookdow);
120
121
122  year * range = calloc(*rng + 10, sizeof(year));
123
124  for (int q = 0; q <= *rng; q++){
125      range[q].yr = **useryear +q;
126  printf("\n\n");
127  printf("*********************************************\n");
128  printf("          Year of %d\n", range[q].yr);
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```
129  printf("*********************************************\n");
130  int dc=0;  //daycount
131     for(int i = 0; i <*rngm; i++){
132
133  range[q].mnth[i] =  month[i];
134  printf("\n%s ", range[q].mnth[i]);
135  printf("%d ", range[q].yr);
136  printf("\n\n");
137  for(int x = 0; x<7; x++){
138      printf("%s ", dyofwk[x]);
139  }
140  printf("\n");
141  if(range[q].yr == **todayyr){*rngm = **todaymonth;}
142      countm++;
143      if(range[q].yr == **useryear && (strcmp(range[q].mnth[i], month[**usermonth-1])==0)){countm = 0;}
144
145
146  for(int j = 0; j<num ; j++){
147          countd++;
148      range[q].day[dc] = dys[j];
149
150      range[q].wkdy[dc] = dyofwk[dn];
151
152      dn++;
153      if(dn ==7){dn=0;}
154      if((range[q].day[dc] == 1 && (strcmp(range[q].wkdy[dc], "Monday")!=0))){for(int e=0; e <dn-1; e++){for(
int r = 0; r < sizeof(range[q].wkdy[e]); r++){printf(" ");}}}
155      if((range[q].day[dc] == 1 && (strcmp(range[q].wkdy[dc], "Sunday") ==0))){for(int e=0; e <6; e++){for(
int r = 0; r < sizeof(range[q].wkdy[e]); r++){printf(" ");}}}
156
157      //printf("%s ", range[q].wkdy[dc]);
158      if(range[q].day[dc] < 10) {printf(" ");}
159      printf("   %d   ", range[q].day[dc]);
160
161      if(strcmp(range[q].wkdy[dc], dyofwk[6])==0){printf("\n");}
162
163      if(range[q].yr == **todayyr && (strcmp(range[q].mnth[i], month[**todaymonth-1])==0)){num = **todayday;}
164      if(range[q].yr == **useryear && (strcmp(range[q].mnth[i], month[**usermonth-1])==0) && range[q].day[dc
]==**userday){countd = 0; bdc=dc;}
165
166      dc++;
167
168  }
169
170   if(i == 0){num = feb;}
171   if(i == 0 && (range[q].yr % 4) ==0){num = leap;}
172     if(i == 7 || i == 2 || i == 4 || i == 9){num = thirty;}
173     if(i == 1 || i == 8 || i == 3 || i == 5 || i == 10){num = rest;}
174  printf("\n");
175  }
176
177  printf("\n");
178  }
179
180
181
182
183  double age = countd/365;
184  //printf("%d", bdc);
185  printf("Day of your birth is %s\n", range[0].wkdy[bdc]);
186  printf("Number of months since birth is %.f\n", countm);
187  printf("Number of days since birth is %.f\n", countd);
188  printf("Age is %.2f years", age);
189  printf("\nCalendar print completed\n");
190
191  free(range);
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192
193
194 int endprog;
195 printf("\nPlease press 0 to end program\n");
196 scanf("%d", &endprog);
197 if(endprog == 0){
198     return 0;}
199 }
200
201 void valid(int ** a, int ** b, int ** c){
202
203 if(**a == 0 || **b == 0 || **c == 0){
204          free(*a);
205         free(*b);
206         free(*c);
207         *a = calloc(2,sizeof(int));
208         *b = calloc(2,sizeof(int));
209         *c = calloc(2,sizeof(int));
210       printf("You did not enter a numeric value. Please try again.\n");
211     scanf("%d", *a);
212     clearBuffer();
213     scanf("%d", *b);
214     clearBuffer();
215     scanf("%d", *c);
216     clearBuffer();
217     valid (a, b, c);}
218
219
220 if(**a > 31 && (**b == 1 || **b== 3 || **b == 5 ||  **b ==7 || **b== 8 || **b == 10 || **b == 12)){
221   free(*a);
222         free(*b);
223         free(*c);
224         *a = calloc(2,sizeof(int));
225         *b = calloc(2,sizeof(int));
226         *c = calloc(2,sizeof(int));
227     printf("You did not enter a valid number of days for the month you entered. Please try again.\n");
228     scanf("%d", *a);
229     clearBuffer();
230     scanf("%d", *b);
231     clearBuffer();
232     scanf("%d", *c);
233     clearBuffer();
234
235     valid (a, b, c);}
236
237 if(**a > 30 && (**b == 4 || **b== 6 || **b == 9 ||  **b ==11)){
238   free(*a);
239         free(*b);
240         free(*c);
241         *a = calloc(2,sizeof(int));
242         *b = calloc(2,sizeof(int));
243         *c = calloc(2,sizeof(int));
244     printf("You did not enter a valid number of days for the month you entered. Please try again.\n");
245     scanf("%d", *a);
246     clearBuffer();
247     scanf("%d", *b);
248     clearBuffer();
249     scanf("%d", *c);
250     clearBuffer();
251
252     valid (a, b, c);}
253
254 if(** a > 28 && **b == 2 && (**c % 4 != 0)){
255   free(*a);
256         free(*b);
257         free(*c);
```

```
258         *a = calloc(2,sizeof(int));
259         *b = calloc(2,sizeof(int));
260         *c = calloc(2,sizeof(int));
261     printf("You did not enter a valid number of days for the month you entered. Please try again.\n");
262     scanf("%d", *a);
263     clearBuffer();
264     scanf("%d", *b);
265     clearBuffer();
266     scanf("%d", *c);
267     clearBuffer();
268 
269     valid (a, b, c);}
270 
271 if(** a > 29 && **b == 2 && (**c % 4 == 0)){
272       free(*a);
273         free(*b);
274         free(*c);
275         *a = calloc(2,sizeof(int));
276         *b = calloc(2,sizeof(int));
277         *c = calloc(2,sizeof(int));
278     printf("You did not enter a valid number of days for the month you entered. Please try again.\n");
279     scanf("%d", *a);
280     clearBuffer();
281     scanf("%d", *b);
282     clearBuffer();
283     scanf("%d", *c);
284     clearBuffer();
285 
286     valid (a, b, c);}
287 
288 if(** c < 1901){
289       free(*a);
290         free(*b);
291         free(*c);
292         *a = calloc(2,sizeof(int));
293         *b = calloc(2,sizeof(int));
294         *c = calloc(2,sizeof(int));
295     printf("You entered a year before 01/01/1901. Please try again.\n");
296     scanf("%d", *a);
297     clearBuffer();
298     scanf("%d", *b);
299     clearBuffer();
300     scanf("%d", *c);
301     clearBuffer();
302 
303     valid (a, b, c);}
304 
305 else{
306 //printf("%d %d %d ", **a,**b,**c);
307 return; }
308 }
309 
310 void clearBuffer() {
311     char c;
312     do {
313         c = getchar();
314     } while (c != '\n' && c != EOF);
315 }
316 
317 
318 
319 
```