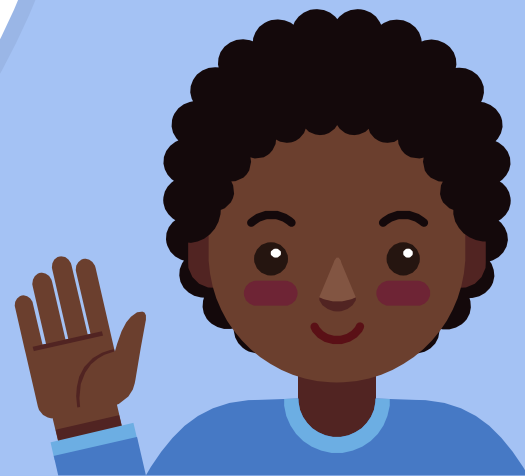


記帳程式

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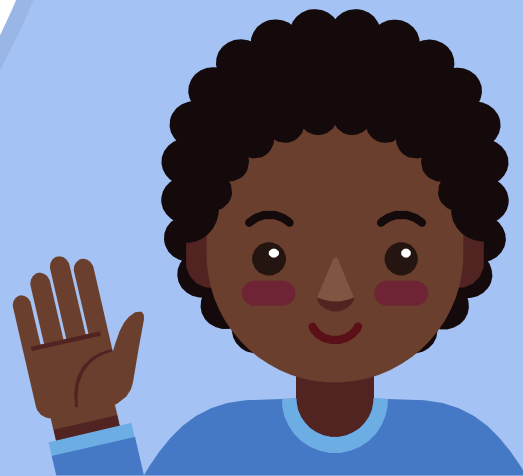
動機



功能

1. 依日期新增帳目

2. 查詢之前每日已計的帳目



程式碼



函式庫

引入函式庫



```
1 #include <iostream>
2 #include <stdlib.h>
3 #include <stdio.h>
4 #include <string.h>
5 #include <vector>
6 #include <time.h>
7 using namespace std;
```



Main function



main function

```
237 int main(){
238     FILE *book;
239     book = fopen("Account.txt","a+");
240     while(1){
241         int select;
242         cout<<"What do you want to do ? "<<endl
243             <<" 1. Update a new record"<<endl
244             <<" 2. Check previous records"<<endl
245             <<" 3. Quit the program"<<endl;
246         cin>>select;
247         if(select==1){
248             system("cls");
249             setDay(book);
250             item(book);
251         }else if(select==2){
252             int range,start,end;
253             system("cls");
254             cout<<"Choose the range of dates : "<<endl
255                 <<"1. All records"<<endl
256                 <<"2. Customized period"<<endl;
257             cin>>range;
```


1) setDay function

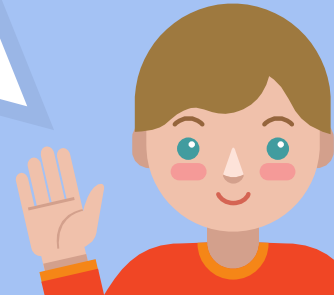


```
100 void setDay( FILE *file ){
101     int today;
102     char tmp[64];
103     time_t t = time(0);
104     strftime( tmp, sizeof(tmp), "%Y%m%d", localtime(&t));
105     today = changeCharToInt(tmp);
106     if( getDate(file) != today ){
107         fprintf( file, "\n-----%d-----", today );
108     }
109 }
```

設定日期至FILE



2) `changeCharToInt` function



```

9 int changeCharToInt( char *s ){
10     int i=0, tmp=0;
11     for( i ; *(s+i) != '\0' ; i++ ){
12         tmp = tmp*10 + *(s+i) - '0';
13     }
14     return tmp;
15 }

```

Dec	Hex	Char
48	30	0
49	31	1
50	32	2
51	33	3
52	34	4
53	35	5
54	36	6
55	37	7
56	38	8
57	39	9

將日期轉換至int模式以利比較



3) getDate function



```
102 int getDate(FILE *file){
103     int date;
104     char s[50];
105     fseek(file,0,SEEK_SET);
106     while(fgets(s,50,file)){
107         if(s[0]=='-')
108             sscanf(s+5,"%d",&date);
109     }
110     return date;
111 }
```

```
-----20170602-----
1Breakfast $80
1Late-night supper $65
2Black tea $30
2Juice $50
-----20170603-----
```

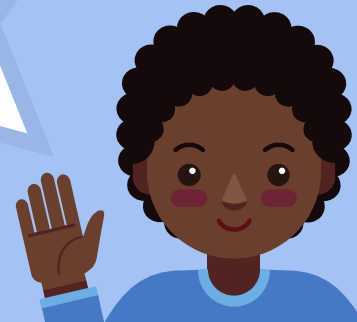
避免在FILE中重複顯示日期



main function

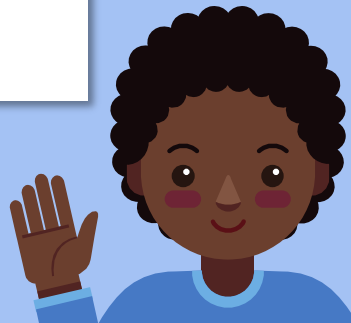
```
237 int main(){
238     FILE *book;
239     book = fopen("Account.txt","a+");
240     while(1){
241         int select;
242         cout<<"What do you want to do ? "<<endl
243             <<" 1. Update a new record"<<endl
244             <<" 2. Check previous records"<<endl
245             <<" 3. Quit the program"<<endl;
246         cin>>select;
247         if(select==1){
248             system("cls");
249             setDay(book);
250             item(book);
251         }else if(select==2){
252             int range,start,end;
253             system("cls");
254             cout<<"Choose the range of dates : "<<endl
255                 <<"1. All records"<<endl
256                 <<"2. Customized period"<<endl;
257             cin>>range;
```

4) item function




```
48 void item( FILE *file ){
49     int choose;
50     printf( "1. Food\n2. Drink\n3. Transport\n4. Shopping\n5. Entertainment\n6. Housing\n7. Digital\n....." );
51     printf( "Category\n" );
52     scanf( "%d", &choose );
53     system( "cls" );
54     switch( choose ){
55         case 1:
56             fprintf( file, "\n1" );
57             label( file, "Food.txt" );
58             break;
59         case 2:
60             fprintf( file, "\n2" );
61             label( file, "Drink.txt" );
62             break;
63         case 3:
64             fprintf( file, "\n3" );
65             label( file, "Transport.txt" );
66             break;
67         case 4:
68             fprintf( file, "\n4" );
69             label( file, "Shopping.txt" );
70             break;
71         case 5:
72             fprintf( file, "\n5" );
73             label( file, "Entertainment.txt" );
74             break;
```

讓使用者輸入所計帳目的類別



```
75     case 6:
76         fprintf( file, "\n6" );
77         label( file, "Housing.txt" );
78         break;
79     case 7:
80         fprintf( file, "\n7" );
81         label( file, "Digital.txt" );
82         break;
83     case 8:
84         fprintf( file, "\n8" );
85         label( file, "Medical.txt" );
86         break;
87     case 9:
88         fprintf( file, "\n9" );
89         label( file, "Income.txt" );
90         break;
91     case 10:
92         fprintf( file, "\n0" );
93         label( file, "Misc.txt" );
94         break;
95 }
96 char a[20];
97 printf( "Your expense : " );
98 scanf( "%s", &a );
99 fprintf( file, " $%s", a );
100 }
```

讓使用者輸入所計帳目的類別



5) Label function

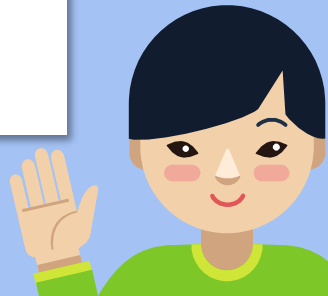


```

17 void label( FILE *file, char *name ){
18     int i=0, thing;
19     char s[64], str[50];
20     vector<string> v;
21     FILE *fptr;
22     fptr = fopen( name, "a+" );
23     printf( "Subcategory\n" );
24     while( fgets( str, 50, fptr ) ){
25         int len = strlen(str);
26         if( str[len-1] == '\n' )
27             str[--len] = '\0';
28         v.push_back(str);
29         cout<<i+1<<" ".<<v[i]<<endl;
30         i++;
31     }
32     printf( "%d. %s\n",i+1,"Other" );
33     printf( "\nChoose a subcategory : " );
34     scanf( "%d", &thing );
35     if( thing != i+1 ){
36         fprintf( file, "\n%s", v[thing-1].c_str() );
37     }else{
38         printf( "Add new subcategory:" );
39         scanf( "%s", s );
40         fprintf( fptr, "\n%s", s );
41         fprintf( file, "\n%s", s );
42     }
43 }

```

輸入所計帳目的名稱



main function

```
257     cin>>range;
258     system("cls");
259     if(range==1){
260         recordFile(book,0,99999999);
261     }else if(range==2){
262         cout<<"Starting time ( ex.20170101 ): ";
263         cin>>start;
264         cout<<"End Time ( ex.20171231 ): ";
265         cin>>end;
266         recordFile(book,start,end);
267     }
268     }else if(select==3){
269         break;
270     }else{
271         cout<<"Input error."<<endl;
272     }
273 }
274
275 system("Pause.");
276 return 0;
277 }
```

6) recordFile function



```

196 void recordFile(FILE *file,int s,int e){
197     int total=0,money=0,date;
198     char str[50],str1[50];
199     fseek(file,0,SEEK_SET);
200     printf("-----record-----\n");
201     while(!feof(file)){
202         fscanf(file,"%s",str);
203         if(str[0]=='-'){
204             sscanf(str+5,"%d",&date);
205             if( date<=e && date>=s ){
206                 if(str[0]=='9'){
207                     sscanf(str+1,"%s",&str1);
208                     printf("%s",str1);
209                     while(str[0]!='$'){
210                         fscanf(file,"%s",str);
211                         printf(" %s",str);
212                     }
213                     puts("");
214                     continue;
215                 }

```

```

-----20170601-----
1Breakfast $50
1Dinner $40
-----20170602-----
1Breakfast $80
1Late-night supper $65
2Black tea $30
2Juice $50
-----20170603-----
1Lunch $75
1apple $140
2Coffee $40
-----20170604-----
1Lunch $75
2Soy milk $30
5KTV $349
-----20170605-----
1Late-night supper $60

```

選擇日期並將帳目列印至FILE



```

218 |         if(str[0]=='$'){
219 |             sscanf(str+1,"%d",&money);
220 |             total+=money;
221 |             printf(" %s",str);
222 |         }
223 |         else if(isdigit(str[0])!=0){
224 |             sscanf(str+1,"%s",&str1);
225 |             printf("%s",str1);
226 |         }else{
227 |             printf(" %s",str);
228 |         }
229 |         if(str[0]=='-' || str[0]=='$')
230 |             puts("");
231 |     }
232 | }
233 | printf("-----");
234 | puts("");
235 | printf("Total expenses : %d\n",total);
236 | printPieChart(file,total,s,e);
237 | printf("-----\n");
238 | }

```

```

-----20170601-----
1Breakfast $50
1Dinner $40
-----20170602-----
1Breakfast $80
1Late-night supper $65
2Black tea $30
2Juice $50
-----20170603-----
1Lunch $75
1apple $140
2Coffee $40
-----20170604-----
1Lunch $75
2Soy milk $30
5KTV $349
-----20170605-----
1Late-night supper $60

```

選擇日期並將帳目列印至FILE



2) printPieChart function

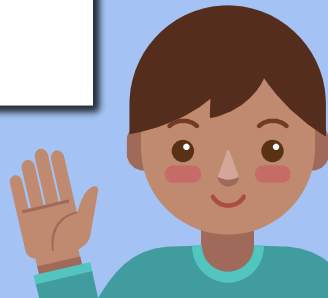


```

172     }else if( str[0] == '0' ){
173         while( str[0] != '$' )
174             fscanf( file, "%s", str );
175         sscanf( str+1, "%d", &money );
176         cost[8] += money;
177     }else if( str[0] == '9' ){
178         while( str[0] != '$' )
179             fscanf( file, "%s", str );
180         sscanf( str+1, "%d", &money );
181         cost[9] += money;
182     }
183 }
184
185 printf( "Total Income : %.0f\n\n", cost[9] );
186 for( int i=0 ; i<9 ; i++ ){
187     printf( "%-15s%5.2f%\t", *(name+i), cost[i]/total*100 );
188     for( int j=1 ; j<=cost[i]/total*100 ; j++ ){
189         cout<<"*";
190     }
191     puts("");
192 }
193 puts("");
194 }

```

將資料轉換為長條圖



執行程式



謝謝！！

