

```
1
2 // Time abstract data type (ADT) definition
3 class Time {
4
5 public:
6     Time(int hr=0, int min=0, int sec=0);           // constructor
7     ~Time(void);                                   // destructor
8     void setTime( int, int, int );                 // set hour, minute, second
9     void printTime(void);                           // print military time format
10
11 private:
12     int hour;           // 0 - 23
13     int minute;        // 0 - 59
14     int second;        // 0 - 59
15 };
```

```
1  #include <iostream.h>
2  #include "TimeClass.h"
3
4  // constructor
5  Time::Time(int hr, int min, int sec)
6  {
7      setTime(hr,min,sec);
8  }
9
10 // destructor
11 Time::~Time(void)
12 {
13     cout << " object of TimeClass destroyed. " <<endl;
14 }
15
16 // methods
17 void Time::setTime( int h, int m, int s )
18 {
19     hour = ( h >= 0 && h < 24 ) ? h : 0;
20     minute = ( m >= 0 && m < 60 ) ? m : 0;
21     second = ( s >= 0 && s < 60 ) ? s : 0;
22 }
23
24 void Time::printTime(void)
25 {
26     cout << "Time is : "
27         << ( hour < 10 ? "0" : "" ) << hour << ":"
28         << ( minute < 10 ? "0" : "" ) << minute << ":"
29         << ( second < 10 ? "0" : "" ) << second
30         << endl;
31 }
32 }
33
34
35
```

```
1  #include <iostream.h>
2  #include "TimeClass.h"
3
4  Time willa; // instantiate object t of class Time
5  Time dillian(23,59,59);
6
7  void printMenu()
8  {
9      cout << "a. Set willa Time" <<endl;
10     cout << "b. Print willa Time" <<endl;
11     cout << "c. Set Dillan Time" <<endl;
12     cout << "d. Print Dillan Time" <<endl;
13     cout << "q. Quit" <<endl;
14 }
15
16
17 bool menu()
18 {
19     char choice; // To store the command of user
20     int hr;
21     int min;
22     int sec;
23
24     cout << "Please enter your choice: ";
25     cin >> choice;
26     switch (choice)
27     {
28         case 'a': cout << "hour? : ";
29                   cin >> hr;
30                   cout << "minute? : ";
31                   cin >> min;
32                   cout << "second? : ";
33                   cin >> sec;
34                   willa.setTime(hr,min,sec);
35                   break;
36         case 'b': willa.printTime();
37                   break;
38         case 'c': cout << "hour? : ";
39                   cin >> hr;
40                   cout << "minute? : ";
41                   cin >> min;
42                   cout << "second? : ";
43                   cin >> sec;
44                   dillian.setTime(hr,min,sec);
45                   break;
46         case 'd': dillian.printTime();
47                   break;
48         case 'q': return true; // Shall quit here
49                   break;
50         case '?': printMenu();
51                   break;
52         default : cout << "Wrong input!\n"; break;
53     }
54     return false;
55 }
56
57
58 int main()
59 {
60     bool exitflag = false;
61
62     printMenu();
63
64     while (exitflag == false)
65     {
66         exitflag = menu();
67     }
68     return 0;
69 }
```