# HOMEWORK 01

NEVER PUT OFF TILL TOMORROW WHAT MAY BE DONE TODAY.

# PROGRAM FOR YOU TO MODIFY

- Header file (.h)

```
#include <string>
using namespace std;
#ifndef TIME_H
#define TIME_H

class Time
{
    public:
        Time();
        void settime(int, int ,int);
        void printnumber(string);
        void printuniversal();
        void printstandard();
    private:
        int hour;
        int minute;
        int second;

};

#endif
```

# PROGRAM FOR YOU TO MODIFY

- Main file (.cpp)

```
1  // Fig. 9.3: fig09_03.cpp
2  // Program to test class Time.
3  // NOTE: This file must be compiled with Time.cpp.
4  #include <iostream>
5  #include "Time.h" // include definition of class Time from Time.h
6  using namespace std;
7
8  int main()
9  {
10    Time t; // instantiate object t of class Time
11
12    // output Time object t's initial values
13    cout << "The initial universal time is ";
14    t.printUniversal(); // 00:00:00
15    cout << "\nThe initial standard time is ";
16    t.printStandard(); // 12:00:00 AM
17
18    t.setTime( 13, 27, 6 ); // change time
19
20    // output Time object t's new values
21    cout << "\n\nUniversal time after setTime is ";
22    t.printUniversal(); // 13:27:06
23    cout << "\nStandard time after setTime is ";
24    t.printStandard(); // 1:27:06 PM
25
26    t.setTime( 99, 99, 99 ); // attempt invalid settings
27
28    // output t's values after specifying invalid values
29    cout << "\n\nAfter attempting invalid settings:"
30       << "\nUniversal time: ";
31    t.printUniversal(); // 00:00:00
32    cout << "\nStandard time: ";
33    t.printStandard(); // 12:00:00 AM
34    cout << endl;
35 } // end main
```

# GOAL 01 (25PT)

Try to modify the above program to read the current time of the computer and convert it to Universal time and Standard time.
You should use #include<ctime> / #include<time.h>

```
The initial universal time is 00 : 00 : 00
The initial standard time is 12 : 00 : 00 AM

Universal time after setTime is 08 : 59 : 20 (Your computer's current time)
Standard time after setTime is 8 : 59 : 20 AM (Your computer's current time)

Process returned 0 ( 0x0 )      execution time  :  13.385  s
Press any key to continue .
```

# GOAL 02 (30PT)

Develop your program such that it can accept an input from the keyboard for a time object (instead of second) as follows:
hour (0~22):minute(0~99):second(0~99)
For example 08:59:20 or 09:69:20
Then you have to convert it to the right time.

```
The initial universal time is 00 : 00 : 00
The initial standard time is 12 : 00 : 00 AM
Current time [ hour ( 0~22 ) : minute ( 0~99 ) : second ( 0~99 ) ] =
9 : 69 : 61

Universal time after setTime is 10 : 10 : 01
Standard time after setTime is 10 : 10 : 01 AM
Process returned 0 ( 0x0 )       execution time  :  13.385  s
Press any key to continue
```

# GOAL 03 (30PT)

When you enter a number, please turn it into Universal time and Standard time .
The output should be like the example .

```
The initial universal time is 00 : 00 : 00
The initial standard time is 12 : 00 : 00 AM
Enter time in seconds counting starting from midnight : 12384

Universal time after setTime is 03 : 26 : 24
Standard time after setTime is 3 : 26 : 24 AM
Process returned 0 ( 0x0 )      execution time  :  4.987  s
Press any key to continue .
```

# THE REQUIREMENTS

- Modified the class and main program in the next page such that
  - There is only one private data member “second” which stores the number of seconds started from midnight.
  - Modify setTime(int, int, int) into setTime(int).
  - The value for argument of setTime should be obtained from keyboard. Before enter the argument value, you should print out the following line “Enter time in seconds counting starting from midnight:”
  - Modify all the member functions such that they still do what they should do.
  - The file must have at least two parts, the headerfile and the main function

  But you can also create more files than that.

# GOAL 04 (15PT)

When you enter a value that does not meet the criteria, program should output a warning and ask the user to re-enter the new value.
This function must be applied to GOAL 02 and GOAL 03.

```
The initial universal time is 00 : 00 : 00
The initial standard time is 12 : 00 : 00 AM
Current time [ hour ( 0~22 ) : minute ( 0~99 ) : second ( 0~99 ) ] =
XYZ

Error!!!
Please enter again :
8 : 59 : 20

Universal time after setTime is 08 : 59 : 20
Standard time after setTime is 8 : 59 : 20 AM
Process returned 0 ( 0x0 )       execution time  :  13.385  s
Press any key to continue
```

# SUPPLEMENT

- When you want to convert a String into a number using.
- Please remember to use the ASCII CODE TABLE.

## The ASCII code

American Standard Code for Information Interchange

### ASCII control characters

| DEC | HEX | Simbolo ASCII | |
|---|---|---|---|
| 00 | 00h | NULL | (carácter nulo) |
| 01 | 01h | SOH | (inicio encabezado) |
| 02 | 02h | STX | (inicio texto) |
| 03 | 03h | ETX | (fin de texto) |
| 04 | 04h | EOT | (fin transmisión) |
| 05 | 05h | ENQ | (enquiry) |
| 06 | 06h | ACK | (acknowledgement) |
| 07 | 07h | BEL | (timbre) |
| 08 | 08h | BS | (retroceso) |
| 09 | 09h | HT | (tab horizontal) |
| 10 | 0Ah | LF | (salto de linea) |
| 11 | 0Bh | VT | (tab vertical) |
| 12 | 0Ch | FF | (form feed) |
| 13 | 0Dh | CR | (retorno de carro) |
| 14 | 0Eh | SO | (shift Out) |
| 15 | 0Fh | SI | (shift In) |
| 16 | 10h | DLE | (data link escape) |
| 17 | 11h | DC1 | (device control 1) |
| 18 | 12h | DC2 | (device control 2) |
| 19 | 13h | DC3 | (device control 3) |
| 20 | 14h | DC4 | (device control 4) |
| 21 | 15h | NAK | (negative acknowle.) |
| 22 | 16h | SYN | (synchronous idle) |
| 23 | 17h | ETB | (end of trans. block) |
| 24 | 18h | CAN | (cancel) |
| 25 | 19h | EM | (end of medium) |
| 26 | 1Ah | SUB | (substitute) |
| 27 | 1Bh | ESC | (escape) |
| 28 | 1Ch | FS | (file separator) |
| 29 | 1Dh | GS | (group separator) |
| 30 | 1Eh | RS | (record separator) |
| 31 | 1Fh | US | (unit separator) |
| 127 | 20h | DEL | (delete) |

### ASCII printable characters

| DEC | HEX | Simbolo | DEC | HEX | Simbolo | DEC | HEX | Simbolo |
|---|---|---|---|---|---|---|---|---|
| 32 | 20h | espacio | 64 | 40h | @ | 96 | 60h | ` |
| 33 | 21h | ! | 65 | 41h | A | 97 | 61h | a |
| 34 | 22h | " | 66 | 42h | B | 98 | 62h | b |
| 35 | 23h | # | 67 | 43h | C | 99 | 63h | c |
| 36 | 24h | $ | 68 | 44h | D | 100 | 64h | d |
| 37 | 25h | % | 69 | 45h | E | 101 | 65h | e |
| 38 | 26h | & | 70 | 46h | F | 102 | 66h | f |
| 39 | 27h | ' | 71 | 47h | G | 103 | 67h | g |
| 40 | 28h | ( | 72 | 48h | H | 104 | 68h | h |
| 41 | 29h | ) | 73 | 49h | I | 105 | 69h | i |
| 42 | 2Ah | * | 74 | 4Ah | J | 106 | 6Ah | j |
| 43 | 2Bh | + | 75 | 4Bh | K | 107 | 6Bh | k |
| 44 | 2Ch | , | 76 | 4Ch | L | 108 | 6Ch | l |
| 45 | 2Dh | - | 77 | 4Dh | M | 109 | 6Dh | m |
| 46 | 2Eh | . | 78 | 4Eh | N | 110 | 6Eh | n |
| 47 | 2Fh | / | 79 | 4Fh | O | 111 | 6Fh | o |
| 48 | 30h | 0 | 80 | 50h | P | 112 | 70h | p |
| 49 | 31h | 1 | 81 | 51h | Q | 113 | 71h | q |
| 50 | 32h | 2 | 82 | 52h | R | 114 | 72h | r |
| 51 | 33h | 3 | 83 | 53h | S | 115 | 73h | s |
| 52 | 34h | 4 | 84 | 54h | T | 116 | 74h | t |
| 53 | 35h | 5 | 85 | 55h | U | 117 | 75h | u |
| 54 | 36h | 6 | 86 | 56h | V | 118 | 76h | v |
| 55 | 37h | 7 | 87 | 57h | W | 119 | 77h | w |
| 56 | 38h | 8 | 88 | 58h | X | 120 | 78h | x |
| 57 | 39h | 9 | 89 | 59h | Y | 121 | 79h | y |
| 58 | 3Ah | : | 90 | 5Ah | Z | 122 | 7Ah | z |
| 59 | 3Bh | ; | 91 | 5Bh | [ | 123 | 7Bh | { |
| 60 | 3Ch | < | 92 | 5Ch | \ | 124 | 7Ch | \| |
| 61 | 3Dh | = | 93 | 5Dh | ] | 125 | 7Dh | } |
| 62 | 3Eh | > | 94 | 5Eh | ^ | 126 | 7Eh | ~ |
| 63 | 3Fh | ? | 95 | 5Fh | _ | | | |

theASCIIcode.com.ar

### Extended ASCII characters

| DEC | HEX | Simbolo | DEC | HEX | Simbolo | DEC | HEX | Simbolo | DEC | HEX | Simbolo |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 128 | 80h | Ç | 160 | A0h | á | 192 | C0h | └ | 224 | E0h | Ó |
| 129 | 81h | ü | 161 | A1h | í | 193 | C1h | ┴ | 225 | E1h | ß |
| 130 | 82h | é | 162 | A2h | ó | 194 | C2h | ┬ | 226 | E2h | Ô |
| 131 | 83h | â | 163 | A3h | ú | 195 | C3h | ├ | 227 | E3h | Ò |
| 132 | 84h | ä | 164 | A4h | ñ | 196 | C4h | ─ | 228 | E4h | õ |
| 133 | 85h | à | 165 | A5h | Ñ | 197 | C5h | ┼ | 229 | E5h | Õ |
| 134 | 86h | å | 166 | A6h | ª | 198 | C6h | ã | 230 | E6h | µ |
| 135 | 87h | ç | 167 | A7h | º | 199 | C7h | Ã | 231 | E7h | þ |
| 136 | 88h | ê | 168 | A8h | ¿ | 200 | C8h | ╚ | 232 | E8h | Þ |
| 137 | 89h | ë | 169 | A9h | ® | 201 | C9h | ╔ | 233 | E9h | Ú |
| 138 | 8Ah | è | 170 | AAh | ¬ | 202 | CAh | ╩ | 234 | EAh | Û |
| 139 | 8Bh | ï | 171 | ABh | ½ | 203 | CBh | ╦ | 235 | EBh | Ù |
| 140 | 8Ch | î | 172 | ACh | ¼ | 204 | CCh | ╠ | 236 | ECh | ý |
| 141 | 8Dh | ì | 173 | ADh | ¡ | 205 | CDh | ═ | 237 | EDh | Ý |
| 142 | 8Eh | Ä | 174 | AEh | « | 206 | CEh | ╬ | 238 | EEh | ¯ |
| 143 | 8Fh | Å | 175 | AFh | » | 207 | CFh | ¤ | 239 | EFh | ´ |
| 144 | 90h | É | 176 | B0h | ░ | 208 | D0h | ð | 240 | F0h |  |
| 145 | 91h | æ | 177 | B1h | ▒ | 209 | D1h | Ð | 241 | F1h | ± |
| 146 | 92h | Æ | 178 | B2h | ▓ | 210 | D2h | Ê | 242 | F2h | ‗ |
| 147 | 93h | ô | 179 | B3h | │ | 211 | D3h | Ë | 243 | F3h | ¾ |
| 148 | 94h | ò | 180 | B4h | ┤ | 212 | D4h | È | 244 | F4h | ¶ |
| 149 | 95h | ò | 181 | B5h | Á | 213 | D5h | ı | 245 | F5h | § |
| 150 | 96h | û | 182 | B6h | Â | 214 | D6h | Í | 246 | F6h | ÷ |
| 151 | 97h | ù | 183 | B7h | À | 215 | D7h | Î | 247 | F7h | ¸ |
| 152 | 98h | ÿ | 184 | B8h | © | 216 | D8h | Ï | 248 | F8h | ° |
| 153 | 99h | Ö | 185 | B9h | ╣ | 217 | D9h | ┘ | 249 | F9h | ¨ |
| 154 | 9Ah | Ü | 186 | BAh | ║ | 218 | DAh | ┌ | 250 | FAh | · |
| 155 | 9Bh | ø | 187 | BBh | ╗ | 219 | DBh | █ | 251 | FBh | ¹ |
| 156 | 9Ch | £ | 188 | BCh | ╝ | 220 | DCh | ▄ | 252 | FCh | ³ |
| 157 | 9Dh | Ø | 189 | BDh | ¢ | 221 | DDh | ¦ | 253 | FDh | ² |
| 158 | 9Eh | × | 190 | BEh | ¥ | 222 | DEh | Ì | 254 | FEh | ■ |
| 159 | 9Fh | ƒ | 191 | BFh | ┐ | 223 | DFh | ▀ | 255 | FFh | |

# SUBMIT YOUR HOMEWORK

- Please make sure again that your code is ready to be compiled.
  - If it can't be compiled, it will not be corrected this time (0 points)
  - TA will try to inform you and ask you to make up for it.
- Please use s1234567_Date.h .cpp、 s1234567_ Container.h .cpp and s1234567_Main.cpp as your file names
  - Replace s1234567 by your own student ID.
  - Pack all the file into a folder named "s1234567_hw1".
  - Zip it and Upload to Portal.
  - Attach a s1234567_hw1.txt if u want to add some additional information to TA.

Warning : 10 points will be deducted if one of them is violated.

# FIGHTING~~~