# Assignment1: Specification writing

CSCI265

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*Booking time checker specifications:*

## 1. PURPOSE

The goal of this program is to provide the user with a program that checks the validity of an appointment booking time. The program is meant mainly for IT administrators, but can be compiled and run on any compatible system, and can be called as a subroutine by software developers that need a booking time checker in their implementation of another program (Refer to platform and operating environment section for system compatibility).

## 2. SCOPE

The user or program calling it supplies the date, start time, and end time of an appointment, and the program either approves the date/time or generates an appropriate error message back to the user or program.

## 3. ASSUMPTIONS

It is assumed that the user or program requires the validity of a date in the Gregorian calendar and that leap years are considered. Months are to be represented in their numerical equivalence and time is to be represented in the 24-hour clock.

## 4. PLATFORM AND OPERATING ENVIRONMENT

For the program to accomplish its intended function by mainly IT administrators and software developers, the program is to be used in a SSH terminal window/emulator in a Linux or windows environment.

## 5. DEVELOPERS ENVIRONMENT AND STANDARDS

The program is to be developed in C++, run and compiled on a GCC compiler. The program should follow all C++ standards supported by GCC (https://gcc.gnu.org/onlinedocs/gcc/Standards.html).
Program's robustness, flexibility, user-friendliness and long-term compatibility of the system are to be respected relative to the basic complexity of the program.

## 6. BEHAVIOUR AND USER INTERACTION

The program first prints out a message that describes the programs intended function, and how it's to be used. Then, the program enters its run cycle asking for required input, checking its validity and generating the appropriate output as detailed below (refer to limitations on input and error handling sections for non-valid input cases)

The command cycle begins by printing a message to the terminal prompting the user to enter one of three choices as follows,

*Please enter (M or m) for program manual, (V or v) to validate an appointment, or (Q or q) to quit:*

If the user chooses to quit, the program terminates after displaying the following message,

*You chose to terminate the program.. See you later.*

If the user chooses to view the program manual, a detailed description of the program's functions and input options are to be displayed.

Once the program manual is displayed, the command cycle will repeat and the user will be prompted to choose from the options once again.

If the user chooses to validate an appointment the command cycle begins by printing a message to the terminal prompting the user for an input with a brief description of the format required as follows,

*Please enter the date, start time, and end time of the appointment you wish to validate respectively in form (DD/MM/YYYY Hr:Min Hr:Min):*

Once the user enters the date, start time and end time to be validated; the program displays the date, start time, and end time followed by "is valid" or "is not valid", e.g.:

*15/12/2017 12:20 13:00 is valid*

Once the program displays the validity of the appointment, the command cycle will repeat and the user will be prompted to choose from the options once again.

## 7. LIMITATIONS ON INPUT

The full date should be represented in the form DD/MM/YYYY (e.g. 26/12/2017)

Time is to represented in the 24-hour clock in the form Hr:Min (e.g. 23:04 ).

MM, DD, Hr, Min must be represented with two digits and YYYY must be represented with four digits. (e.g 01/05/2017 01:04 03:05 not 1/5/17 1:4 3:5)

Valid integer inputs are as follows:
DD range 1-31
MM range 1-12
YYYY range 2017 - 9999

## 8. ERROR HANDLING

If the user enters an invalid input for the command choice, date or time, an error message will be displayed with a specific explanation of what the program expects for that input and any limitations on the input. The entry is disregarded and the command cycle repeats from the start, prompting the user to choose from the options once again.

## 9. SAMPLE RUN

*(Output is shown in italics and input in bold italics)*

Welcome to Book Time Checker!

This program checks the validity of an appointment booking time, based on the date, start and end time you give it.

*Please enter (M or m) for program manual, (V or v) to validate an appointment, or (Q or q) to quit:* ***V***

*Please enter the date, start time, and end time of the appointment you wish to validate respectively in form (DD/MM/YYYY Hr:Min Hr:Min):* ***1/28/2018 10:30 11:00***

*Sorry, 1 is not valid for DD.*
*DD, Hr, Min must be represented with two digits and YYYY must be represented with four digits. (e.g 01/05/2017 01:04 03:05 not 1/5/17 1:4 3:5)*

*Please enter (M or m) for program manual, (V or v) to validate an appointment, or (Q or q) to quit:* ***m***
*Book Time Checker's manual:*
*It is assumed that the user or program requires the validity of a date in the Gregorian calendar and that leap years are considered. Months are to be represented in their numerical equivalence and time is to be represented in the 24-hour clock.*
*The full date should be represented in the form DD/MM/YYYY (e.g. 26/12/2017)*

*Time is to represented in the 24-hour clock in the form Hr:Min (e.g. 23:04 ).*

*MM, DD, Hr, Min must be represented with two digits and YYYY must be represented with four digits. (e.g 01/05/2017 01:04 03:05 not 1/5/17 1:4 3:5)*

*Valid integer inputs are as follows:*
*DD range 1-31*
*MM range 1-12*
*YYYY range 2017 - 9999*

*Please enter (M or m) for program manual, (V or v) to validate an appointment, or (Q or q) to quit:* ***V***

*Please enter the date, start time, and end time of the appointment you wish to validate respectively in form (DD/MM/YYYY Hr:Min Hr:Min):* ***01/28/2018 10:30 11:00***
*01/28/2018 10:30 11:00 is valid*

*Please enter (M or m) for program manual, (V or v) to validate an appointment, or (Q or q) to quit:* ***q***
*You chose to terminate the program.. See you later.*

## 10. CONTACT INFORMATION AND QUERIES

For any questions regarding the specifications, please contact Sami Al-Qusus, Sami.Qusus@gmail.com