

**CS201 – Fall 2020-2021**  
**Take-Home Exam 6**  
**– Favorite TV Series –**  
**Due January 10, Sunday, 23:55**

## **Introduction**

The aim of this take-home exam is to practice classes. You will write a C++ program that simulates the add-drop process to your favorite TV Series list.

## **Description**

The program that you will develop will read TV Series information from two files: one file will contain a unique code created for each TV series, the name of the TV series and the actors included in the TV series, and the other file will contain the information of episodes of this TV series that includes the name of the episode, the code of the TV series and schedule (date and time slot that TV series broadcast (morning, noon, evening or night)).

Your program will start with asking the name, surname of the user. Each one of these inputs will be made up only of one single word (i.e. sequence of characters without a space), and you can assume that the first two inputs will be strings. You should convert the name and the last name of the user to upper-case letters. Then, your program will present the user with a menu, which will be further explained in detail below. In this menu, there will be 6 options, and the 6th option is the exit option. Through using the menu, the user will be able to display all TV series, add and drop TV Series to favorite list, display favorite TV series according to the schedule and display favorite actors. Once the user inputs "6", your program should display a message and terminate.

With this take-home exam description document, you are given the header file of a new class, the **FavoriteSeries** class, that you are expected to implement. This new class models a user adding/removing/displaying the information of the user's favorite TV Series in a particular schedule. There are two structs defined in this class. The **series** struct encapsulates a name of TV series (of type **string**), a unique code of TV series (of type **int**), a vector storing the actors of that TV Series and a vector that stores episodes of TV Series. The episode vector's type is **episode** (which is our second struct).

Episode structures will be objects that addresses the episodes of the series, and the information they will contains unique code of the TV series they belong to (type of int), the episodes name (string), date information ( type of Date class (You should use date.h and date.cpp)) and time slot (type of int) for a specific day.

The state of a **FavoriteSeries** object is defined by the name, surname and favorite TV series vector of the user. Here, name and surname are of type **string**, and favorite series is of type **vector of TV series**, where **series** is one of the above-described structs.

The **FavoriteSeries** class has only one constructor, and that constructor is not a default one. When constructing a **FavoriteSeries** object, you need to pass the name, surname of the user to the constructor. Given a **FavoriteSeries** object, you can use the accessor member functions to get/check the values of the private data members, and use the mutator member functions to change their values. We have several member functions implemented in this **FavoriteSeries** class, such as getting some basic information about the user, adding/dropping TV series , and checking for time conflicts.

However, the class needs to implement this functionality to accomplish the tasks given in this take-home exam. Thus, **you will implement** the **FavoriteSeries** class of which the header file **favoriteseries.h** was provided by us. You need to implement all the member functions of the class given in **favoriteseries.h**.

Your take-home exams will be automatically graded using GradeChecker, so it is **very important to satisfy the exact same output given in the sample runs**. You can utilize GradeChecker (<http://learnt.sabanciuniv.edu/GradeChecker/>) to check whether your implementation is working in the expected way. If your code works fine on your computer and does not work on GC, please check <http://learnt.sabanciuniv.edu/GradeChecker/commonerrors.jsp> for common GC compiler incompatibility errors. To be able to use GradeChecker, you should upload all of your files used in the take-home exam (**cpp, header and txt files for this take-home exam**). Additionally, you should submit all of your source (**cpp and header**) files to SUCourse. **Just a reminder, you will see a character ¶ which refers to a newline in your expected output.**

**The name of your main source (cpp) file should be in the expected format:** "SUCourseUsername\_THEnumber.cpp" (all lowercase letters). Please check the submission procedures of the take-home exam, which are listed at the end of this document.

## Files

Your program will read data from two files, and store this data inside a vector. The names of these files will be hardcoded; that is, your program will not ask for their names. The file consisting of the TV series names, codes and actors names will be named as **"series.txt"**, and the file consisting of the episodes and schedule information will be named as **"episodes.txt"**. Your program can open the files directly with these given names.

The **"series.txt"** file will have the information on a TV series' unique code number and its unique name where the code can be any integer value, actors or string names can be 1 or more than 1 word. In each line of series.txt, the first word corresponds to the unique code of the TV Series, then the part up to the first semicolon corresponds to the name of the TV Series. In the remaining part, actor names are separated by commas and there is no limit to the number of actors. Note that you can assume that each series name and code can exist at most once (So there is one line for each unique TV Series), but actors can exist in different TV series. We can also assume that there will not be any duplicate information in this text file.

The **"episodes.txt"** file will have the information on an episode of a TV series that includes the code of the TV series that the episodes belong to, Date, time slot and name of the episode. In each line of **"episodes.txt"** file, the first word corresponds to the unique code of the TV series which episode belongs, second word corresponds date, third word corresponds time slots that can only be one of 4 values "morning", "afternoon", "evening" or "night". Including the 4th word, the remaining part from the 4th word corresponds to the name of that episode.

The word corresponding to the date here has a format of "m / d / yyyy". Remember that month can be either an integer from 1 to 12 and day can be integer from 1 to 31. Therefore, the position of the slashes must be used when removing the month and day. The part before the first slash represents the month, the middle of the two slashes represents the day, and the year from the second slash. With the information extracted here, the "DATE" class object will be created which is supported in "DATE.h" and kept in the episode structure.

There will be no duplication in episodes.txt and the episode name and date pair will not be more than once. So each line will have a unique episode name. Also, please note that there might be any number of spaces or tabs between each word of in boths files, and the file may contain any number of lines. However, you may assume that there will not be any empty lines.

The TV Series information is not in any specific order (i.e. for a TV Series taking place on 10 december 2021 and 11 December 2021, 10 December will not be always written before 11 December etc.). A TV Series will not conflict with itself (a second episode of a TV series will not have a time conflict with another episode of the TV Series).

Everything will be case-insensitive; thus, you **MUST** convert all the words into all upper-case letters.

Please note that a series existing in the series.txt file is guaranteed to also exist in the episodes file.

Please remember that the content of the files will change while we grade your submission, and thus, you should implement the take-home exam accordingly. However, as mentioned before, the names of the files will not change.

## Menu

In a structure of homework continues menu will be displayed until the end of the program, just as previous homework which provides following functionalities:

1. *Print all TV series:* All series and episode names will be printed with their calendars in the following format:

*CODE,SERIES,EPISODE,ACTOR,DATE,SLOT*

*480,MODERN FAMILY,BABY STEPS,November 26 2020,EVENING*

Note: You can see the above example more clearly in the sample runs. The important points here are that all series and episodes should be printed on the console in a certain order. Here, the series should first be sorted by date. Then the series on the same date should be sorted according to the SLOT information. In a single day, morning should be before afternoon, afternoon should be before evening, evening should be before night.

If two different episodes have the same date and same slot, they should be sorted according to the unique series codes. Rankings should always be made from low to high. (early to after if they are dates).

Here you will use the DATE class to switch from (11/26/2020) format to November 26 2020 format.

- 2. Add TV series:** Unique code of a TV Series will be asked and the respective series will be added to the user's favorite series list, if there exists such a TV series in the given dataset and if the user's schedule is suitable and if the user hasn't already added the same TV series. If the given TV series conflicts with another TV series that already exists in the user's favorite series list, or the TV series itself, then the new TV series, whose code is obtained in this phase, should not be added and a warning should be displayed. On the other hand, if no such code exists in the given dataset (txt files), then an error message will be displayed and the user will be returned back to the menu.
- 3. Drop TV series:** Unique code of a TV Series will be asked, and respective TV series will be dropped from the user's favorite series list, if there exists such a TV series in the current favorite series list of the user. If no such code exists in the favorite series list of the user, then an error message will be displayed, and the user will be returned back to the menu.
- 4. Print your favorite series with schedule:** The user's favorite series list will be displayed on a console. Here, the printing format of favorite tv series will be the same as in the first option "print all TV series". If any of the TV series has not been added yet, a warning message should be given to the user. (see the sample runs).
- 5. Print all your favorite actors:** Here, the actors who play in the series that the user added to her favorite should be printed with their scores in the following format:

```
USER_NAME, here is your favorite actors:  
EMILIA CLARKE: 1  
KIT HARINGTON: 1  
MAISIE WILLIAMS: 1  
NIKOLAJ COSTER WALDAU: 1  
PETER DINKLAGE: 1  
SOPHIE TURNER: 1
```

The important point to note here is that if an actor plays in 2 TV series that the user added to his/her favorite list, the score will be 2, and if he plays in 1, the score will be 1. This list should first be sorted in terms of score, and among the same scores list should be sorted according to the name of the actor (the one with the highest score and the alphabetically will be at the top). Ex: "The name starting with the letter A must be above the one starting with the letter B".

If no TV series is added to the favorite series list, it should show a warning message to the user and return to the main menu.

**6. Exit:** The program will be terminated for the user.

## Member Functions

As mentioned before, you will implement all the member functions given in the header file of **FavoriteSeries** class for all functionality. You will also have to use them in your program. Also, remember that you may use the structs **series** and **episode** defined in the **FavoriteSeries** class also in the main program.

We will be checking your codes **manually** to see if you have implemented all the mentioned functions.

You may find the explanations for all of the member functions, written as comments in the **favoriteseries.h** file. Some of these member functions are:

- 1. addSeries:** A member function to add a new TV series to a user's favorite list. This function will get a **series** typed parameter (definition given in **favoriteseries.h**) as its only parameter, and add this series to the related favorite series vector (**favSeries**). Note that, at some point during the execution of your program, the favorite series vector (**favSeries**) should be **sorted**. You can either add the series in a sorted manner; or sort the vector later when you need to display the contents, in the case of which you may require to have some additional member functions for this sorting operation.

Your program will make use of this member function whenever a new TV series is added to the user's favorite list . As a design choice, you may decide to check the conditions of adding a new TV series to the favorite list (i.e. checking for conflicts) within the class or in your main program. Please check the Sample Runs for further clarification.

- 2. dropSeriesSorted:** A member function to remove the TV series from the user's favorite list. This function will get an integer TV series code as its only parameter, and remove this series from the favorite series vector (**favSeries**). Note that, at some point during the execution of your program, the favorite series vector (**favSeries**) should be **sorted**. You can either remove the series in a sorted manner; or sort the vector later when you need to display the contents, in the case of which you may require to have some additional member functions for this sorting operation.

**3. `ifExists`:** A member function that takes no parameters to check if the given TV series is already in the favorite list. It returns true if it is in the list, returns false otherwise.

**4. `isListEmpty`:** A member function to check if there exists any TV series in the favorite TV series list of the user. Since the favorite TV series vector that stores the current favorite series of the user (`favSeries`) is a private data member of the given **`FavoriteSeries`** class. Thus, this function would not require any parameters.

Your program will make use of this member function to check whether the current favorite series list of the user is empty, to produce/display a warning message when applicable. Please check the Sample Runs for further clarification.

**5. `displayFavoriteList`:** A member function to display a student's favorite list in above described format ( *see option 4 in menu*) You can check menu option 4 from "Sample Runs" for clarification.

Your program will make use of this member function to display the favorite series list of the user in the required format. You can check menu option 4 from "Sample Runs" for clarification.

**6. `displayFavoriteActors`:** A member function to extract a user's favorite actors from the user's favorite list and display them sorted first with their number of occurrences in the TV series and second with the actor's full name. You can check menu option 5 from "Sample Runs" for clarification.

**7. `isConflict`:** A member function to check if a given TV series has a time conflict with the user's favorite list schedule. This function takes a **`series`** struct as parameter, and returns true if any of the episodes of this TV series is at the same time slot with any of the user's current favorite list schedule.

**8. `getFullName`:** A member function that returns the full name of the user.

You **must** add all of the member functions listed above to the given **`FavoriteSeries`** class. You can also add additional member functions if you need them. For example, you might need another function to sort the favorite list vector (or you might not need it depending on how you add a new TV series).

### **IMPORTANT!**

If your code does not compile, then you will get **zero**. Please be careful about this and double check your code before submission.

### **VERY IMPORTANT!**

Your programs will be compiled, executed and evaluated automatically; therefore, you should definitely follow the rules for prompts, inputs and outputs. See **Sample Runs** section for some examples.

- **Order of inputs and outputs** must be in the mentioned format.

Following these rules is crucial for grading, otherwise our software will not be able to process your outputs and you will lose some points in the best scenario.

## **Sample Runs**

Below, we provide some sample runs of the program that you will develop. The *italic* and **bold** phrases are inputs taken from the user. You have to display the required information in the same order and with the exact same words and characters as below.

### **Sample Run 1**

Welcome to my favorite TV series schedule program!

Please, enter your name and surname: ***bob Dylan***

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---



Please enter your choice: 1

CODE,SERIES,EPIISODE,ACTOR,DATE,SLOT

480,MODERN FAMILY,BABY STEPS,November 26 2020,EVENING  
1240,BREAKING BAD,GRANITE STATE,November 26 2020,EVENING  
67,QUEENS GAMBIT,EXCHANGE,November 27 2020,MORNING  
8,GAME OF THRONES,THE IRON THRONE,November 28 2020,MORNING  
4029,VIKINGS,VALLHALLA CAN WAIT,November 28 2020,EVENING  
1231,HOW I MET YOUR MOTHER,SUNRISE,November 28 2020,NIGHT  
111,PRISON BREAK,ALLEN,November 29 2020,MORNING  
5084,FRIENDS,THE LAST ONE,November 29 2020,MORNING  
67,QUEENS GAMBIT,OPEINGS,November 29 2020,AFTERNOON  
5084,FRIENDS,THE LAST ONE PART 2,November 29 2020,NIGHT  
8,GAME OF THRONES,THE LAST OF STARKS,November 30 2020,MORNING  
449,BETTER CALL SAUL,SOMETHING UNFORGIVABLE,November 30 2020,EVENING  
10456,THE OFFICE,THE FARM,November 30 2020,EVENING  
102,THE WITCHER,THE END BEGINNING,December 1 2020,AFTERNOON  
1231,HOW I MET YOUR MOTHER,LAST FOREVER,December 1 2020,AFTERNOON  
5892,SEINFELD,THE CLIP SHOW,December 1 2020,EVENING  
102,THE WITCHER,FOUR MARK,December 1 2020,NIGHT  
1231,HOW I MET YOUR MOTHER,LAST FOREVER PART 2,December 1 2020,NIGHT  
449,BETTER CALL SAUL,NAMASTE,December 2 2020,AFTERNOON  
5,THE WALKING DEAD,A CERTAIN DOOM,December 3 2020,AFTERNOON  
449,BETTER CALL SAUL,WINNER,December 3 2020,AFTERNOON  
5892,SEINFELD,THE MAID,January 1 2021,NIGHT

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: 5

BOB DYLAN, you did not add any TV series yet!

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **4**

BOB DYLAN, you did not add any TV series yet!

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **3**

BOB DYLAN, you did not add any TV series yet!

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **2**

Enter code for the TV series you want to add: 123

BOB DYLAN, there is no such TV series in the database!

---

MENU

1. Print all TV series

2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **2**

Enter code for the TV series you want to add: **102**

BOB DYLAN, THE WITCHER added to your schedule.

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **5**

BOB DYLAN, here is your favorite actors:

ANYA CHALOTRA: 1

BASIL EIDENBENZ: 1

BRYAN CRANSTON: 1

FREYA ALLAN: 1

WENTWORTH MILLER: 1

YASEN ATOUR: 1

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **4**

BOB DYLAN, here is your favorite TV series:

CODE,SERIES,EPISODE,ACTOR,DATE,SLOT

102,THE WITCHER,THE END BEGINNING,December 1 2020,AFTERNOON

102,THE WITCHER,FOUR MARK,December 1 2020,NIGHT

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **2**

Enter code for the TV series you want to add: **10456**

BOB DYLAN, THE OFFICE added to your schedule.

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **5**

BOB DYLAN, here is your favorite actors:

BRYAN CRANSTON: 3

ANYA CHALOTRA: 2

WENTWORTH MILLER: 2

YASEN ATOUR: 2

BASIL EIDENBENZ: 1

FREYA ALLAN: 1

LESLIE DAVID BAKER: 1

RAINN WILSON: 1

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **4**

BOB DYLAN, here is your favorite TV series:

CODE,SERIES,EPISODE,ACTOR,DATE,SLOT

10456,THE OFFICE,THE FARM,November 30 2020,EVENING

102,THE WITCHER,THE END BEGINNING,December 1 2020,AFTERNOON

102,THE WITCHER,FOUR MARK,December 1 2020,NIGHT

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **3**

Enter code for the TV series you want to drop: **123**

BOB DYLAN, there is no such TV series in your favorite list!

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **3**

Enter code for the TV series you want to drop: **102**

BOB DYLAN, THE WITCHER has been dropped from your favorite list!

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **5**

BOB DYLAN, here is your favorite actors:

BRYAN CRANSTON: 2

ANYA CHALOTRA: 1

LESLIE DAVID BAKER: 1

RAINN WILSON: 1

WENTWORTH MILLER: 1

YASEN ATOUR: 1

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **4**

BOB DYLAN, here is your favorite TV series:

CODE,SERIES,EPISODE,ACTOR,DATE,SLOT

10456,THE OFFICE,THE FARM,November 30 2020,EVENING

---

MENU

1. Print all TV series
2. Add TV series

3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **3**

Enter code for the TV series you want to drop: **10456**

BOB DYLAN, THE OFFICE has been dropped from your favorite list!

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **5**

BOB DYLAN, you did not add any TV series yet!

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **4**

BOB DYLAN, you did not add any TV series yet!

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule

5. Print all your favorite actors

6. Exit

---

Please enter your choice: 6

Goodbye, BOB DYLAN!

## Sample Run 2

Welcome to my favorite TV series schedule program!

Please, enter your name and surname: anil ozdemir

---

MENU

1. Print all TV series

2. Add TV series

3. Drop TV series

4. Print your favorite series with schedule

5. Print all your favorite actors

6. Exit

---

Please enter your choice: 7

Invalid option!

---

MENU

1. Print all TV series

2. Add TV series

3. Drop TV series

4. Print your favorite series with schedule

5. Print all your favorite actors

6. Exit

---

Please enter your choice: 3

ANIL OZDEMIR, you did not add any TV series yet!



---

#### MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: 2

Enter code for the TV series you want to add: 111

ANIL OZDEMIR, PRISON BREAK added to your schedule.

---

#### MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: 4

ANIL OZDEMIR, here is your favorite TV series:

CODE,SERIES,EPIISODE,ACTOR,DATE,SLOT

111,PRISON BREAK,ALLEN,November 29 2020,MORNING

---

#### MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: 2

Enter code for the TV series you want to add: 5084

ANIL OZDEMIR, you can't add this TV series because of a date/slot conflict!

---

#### MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: 3

Enter code for the TV series you want to drop: 111

ANIL OZDEMIR, PRISON BREAK has been dropped from your favorite list!

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: 3

ANIL OZDEMIR, you did not add any TV series yet!

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: 4

ANIL OZDEMIR, you did not add any TV series yet!

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **2**

Enter code for the TV series you want to add: **5084**

ANIL OZDEMIR, FRIENDS added to your schedule.

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **4**

ANIL OZDEMIR, here is your favorite TV series:

CODE,SERIES,EPIISODE,ACTOR,DATE,SLOT

5084,FRIENDS,THE LAST ONE,November 29 2020,MORNING

5084,FRIENDS,THE LAST ONE PART 2,November 29 2020,NIGHT

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **5**

ANIL OZDEMIR, here is your favorite actors:

COURTENEY COX: 1

JENNIFER ANISTON: 1

LISA KUDROW: 1

WENTWORTH MILLER: 1

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors

6. Exit

---

Please enter your choice: **2**

Enter code for the TV series you want to add: **5892**

ANIL OZDEMIR, SEINFELD added to your schedule.

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **4**

ANIL OZDEMIR, here is your favorite TV series:

CODE,SERIES,EPIISODE,ACTOR,DATE,SLOT

5084,FRIENDS,THE LAST ONE,November 29 2020,MORNING

5084,FRIENDS,THE LAST ONE PART 2,November 29 2020,NIGHT

5892,SEINFELD,THE CLIP SHOW,December 1 2020,EVENING

5892,SEINFELD,THE MAID,January 1 2021,NIGHT

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **2**

Enter code for the TV series you want to add: **111**

ANIL OZDEMIR, you can't add this TV series because of a date/slot conflict!

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule

5. Print all your favorite actors

6. Exit

---

Please enter your choice: **4**

ANIL OZDEMIR, here is your favorite TV series:

CODE,SERIES,EPISODE,ACTOR,DATE,SLOT

5084,FRIENDS,THE LAST ONE,November 29 2020,MORNING

5084,FRIENDS,THE LAST ONE PART 2,November 29 2020,NIGHT

5892,SEINFELD,THE CLIP SHOW,December 1 2020,EVENING

5892,SEINFELD,THE MAID,January 1 2021,NIGHT

---

MENU

1. Print all TV series

2. Add TV series

3. Drop TV series

4. Print your favorite series with schedule

5. Print all your favorite actors

6. Exit

---

Please enter your choice: **2**

Enter code for the TV series you want to add: **102**

ANIL OZDEMIR, THE WITCHER added to your schedule.

---

MENU

1. Print all TV series

2. Add TV series

3. Drop TV series

4. Print your favorite series with schedule

5. Print all your favorite actors

6. Exit

---

Please enter your choice: **4**

ANIL OZDEMIR, here is your favorite TV series:

CODE,SERIES,EPISODE,ACTOR,DATE,SLOT

5084,FRIENDS,THE LAST ONE,November 29 2020,MORNING

5084,FRIENDS,THE LAST ONE PART 2,November 29 2020,NIGHT

102,THE WITCHER,THE END BEGINNING,December 1 2020,AFTERNOON

5892,SEINFELD,THE CLIP SHOW,December 1 2020,EVENING

102,THE WITCHER,FOUR MARK,December 1 2020,NIGHT

5892,SEINFELD,THE MAID,January 1 2021,NIGHT

---

#### MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **5**

ANIL OZDEMIR, here is your favorite actors:

BRYAN CRANSTON: 2

COURTENEY COX: 2

WENTWORTH MILLER: 2

ANYA CHALOTRA: 1

BASIL EIDENBENZ: 1

FREYA ALLAN: 1

JASON ALEXANDER: 1

JENNIFER ANISTON: 1

JERRY SEINFELD: 1

LISA KUDROW: 1

MICHAEL RICHARDS: 1

YASEN ATOUR: 1

---

#### MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **2**

Enter code for the TV series you want to add: **449**

ANIL OZDEMIR, BETTER CALL SAUL added to your schedule.

---

#### MENU

1. Print all TV series
2. Add TV series
3. Drop TV series

4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: 2

Enter code for the TV series you want to add: **449**

ANIL OZDEMIR, you can't add this TV series because you already added it!

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: 5

ANIL OZDEMIR, here is your favorite actors:

BRYAN CRANSTON: 2

COURTENEY COX: 2

WENTWORTH MILLER: 2

YASEN ATOUR: 2

ANYA CHALOTRA: 1

BASIL EIDENBENZ: 1

BOB ODENKIRK: 1

FREYA ALLAN: 1

HARRY MELLING: 1

JASON ALEXANDER: 1

JENNIFER ANISTON: 1

JERRY SEINFELD: 1

JONATHAN BANKS: 1

LISA KUDROW: 1

MICHAEL RICHARDS: 1

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule

5. Print all your favorite actors

6. Exit

---

Please enter your choice: 2

Enter code for the TV series you want to add: **1250**

ANIL OZDEMIR, there is no such TV series in the database!

---

MENU

1. Print all TV series

2. Add TV series

3. Drop TV series

4. Print your favorite series with schedule

5. Print all your favorite actors

6. Exit

---

Please enter your choice: 2

Enter code for the TV series you want to add: **1240**

ANIL OZDEMIR, BREAKING BAD added to your schedule.

---

MENU

1. Print all TV series

2. Add TV series

3. Drop TV series

4. Print your favorite series with schedule

5. Print all your favorite actors

6. Exit

---

Please enter your choice: 4

ANIL OZDEMIR, here is your favorite TV series:

CODE,SERIES,EPISODE,ACTOR,DATE,SLOT

1240,BREAKING BAD,GRANITE STATE,November 26 2020,EVENING

5084,FRIENDS,THE LAST ONE,November 29 2020,MORNING

5084,FRIENDS,THE LAST ONE PART 2,November 29 2020,NIGHT

449,BETTER CALL SAUL,SOMETHING UNFORGIVABLE,November 30 2020,EVENING

102,THE WITCHER,THE END BEGINNING,December 1 2020,AFTERNOON

5892,SEINFELD,THE CLIP SHOW,December 1 2020,EVENING

102,THE WITCHER,FOUR MARK,December 1 2020,NIGHT

449,BETTER CALL SAUL,NAMASTE,December 2 2020,AFTERNOON

449,BETTER CALL SAUL,WINNER,December 3 2020,AFTERNOON

5892,SEINFELD,THE MAID,January 1 2021,NIGHT



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#### MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **5**

ANIL OZDEMIR, here is your favorite actors:

BRYAN CRANSTON: 4

BOB ODENKIRK: 2

COURTENEY COX: 2

JONATHAN BANKS: 2

WENTWORTH MILLER: 2

YASEN ATOUR: 2

AARON PAUL: 1

ANNA GUNN: 1

ANYA CHALOTRA: 1

BASIL EIDENBENZ: 1

DEAN NORRIS: 1

FREYA ALLAN: 1

HARRY MELLING: 1

JASON ALEXANDER: 1

JENNIFER ANISTON: 1

JERRY SEINFELD: 1

LISA KUDROW: 1

MICHAEL RICHARDS: 1

---

#### MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **2**

Enter code for the TV series you want to add: **8**

ANIL OZDEMIR, GAME OF THRONES added to your schedule.

---

#### MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **4**

ANIL OZDEMIR, here is your favorite TV series:

CODE,SERIES,EPIISODE,ACTOR,DATE,SLOT

1240,BREAKING BAD,GRANITE STATE,November 26 2020,EVENING  
8,GAME OF THRONES,THE IRON THRONE,November 28 2020,MORNING  
5084,FRIENDS,THE LAST ONE,November 29 2020,MORNING  
5084,FRIENDS,THE LAST ONE PART 2,November 29 2020,NIGHT  
8,GAME OF THRONES,THE LAST OF STARKS,November 30 2020,MORNING  
449,BETTER CALL SAUL,SOMETHING UNFORGIVABLE,November 30 2020,EVENING  
102,THE WITCHER,THE END BEGINNING,December 1 2020,AFTERNOON  
5892,SEINFELD,THE CLIP SHOW,December 1 2020,EVENING  
102,THE WITCHER,FOUR MARK,December 1 2020,NIGHT  
449,BETTER CALL SAUL,NAMASTE,December 2 2020,AFTERNOON  
449,BETTER CALL SAUL,WINNER,December 3 2020,AFTERNOON  
5892,SEINFELD,THE MAID,January 1 2021,NIGHT

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#### MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **5**

ANIL OZDEMIR, here is your favorite actors:

BRYAN CRANSTON: 4

WENTWORTH MILLER: 3

BOB ODENKIRK: 2

COURTENEY COX: 2

JONATHAN BANKS: 2

YASEN ATOUR: 2  
AARON PAUL: 1  
ANNA GUNN: 1  
ANYA CHALOTRA: 1  
BASIL EIDENBENZ: 1  
DEAN NORRIS: 1  
EMILIA CLARKE: 1  
FREYA ALLAN: 1  
HARRY MELLING: 1  
JASON ALEXANDER: 1  
JENNIFER ANISTON: 1  
JERRY SEINFELD: 1  
KIT HARINGTON: 1  
LISA KUDROW: 1  
MAISIE WILLIAMS: 1  
MICHAEL RICHARDS: 1  
NIKOLAJ COSTER WALDAU: 1  
SOPHIE TURNER: 1

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MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **1231**

Invalid option!

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: **2**

Enter code for the TV series you want to add: **1231**

ANIL OZDEMIR, you can't add this TV series because of a date/slot conflict!

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: 2

Enter code for the TV series you want to add: **4029**

ANIL OZDEMIR, VIKINGS added to your schedule.

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: 4

ANIL OZDEMIR, here is your favorite TV series:

CODE,SERIES,EPIISODE,ACTOR,DATE,SLOT

1240,BREAKING BAD,GRANITE STATE,November 26 2020,EVENING

8,GAME OF THRONES,THE IRON THRONE,November 28 2020,MORNING

4029,VIKINGS,VALLHALLA CAN WAIT,November 28 2020,EVENING

5084,FRIENDS,THE LAST ONE,November 29 2020,MORNING

5084,FRIENDS,THE LAST ONE PART 2,November 29 2020,NIGHT

8,GAME OF THRONES,THE LAST OF STARKS,November 30 2020,MORNING

449,BETTER CALL SAUL,SOMETHING UNFORGIVABLE,November 30 2020,EVENING

102,THE WITCHER,THE END BEGINNING,December 1 2020,AFTERNOON

5892,SEINFELD,THE CLIP SHOW,December 1 2020,EVENING

102,THE WITCHER,FOUR MARK,December 1 2020,NIGHT

449,BETTER CALL SAUL,NAMASTE,December 2 2020,AFTERNOON

449,BETTER CALL SAUL,WINNER,December 3 2020,AFTERNOON

5892,SEINFELD,THE MAID,January 1 2021,NIGHT

---

MENU

1. Print all TV series
2. Add TV series

3. Drop TV series
4. Print your favorite series with schedule
5. Print all your favorite actors
6. Exit

---

Please enter your choice: 5

ANIL OZDEMIR, here is your favorite actors:

BRYAN CRANSTON: 5

WENTWORTH MILLER: 3

BOB ODENKIRK: 2

COURTENEY COX: 2

JONATHAN BANKS: 2

YASEN ATOUR: 2

AARON PAUL: 1

ALEXANDER LUDWIG: 1

ANNA GUNN: 1

ANYA CHALOTRA: 1

BASIL EIDENBENZ: 1

CLIVE STANDEN: 1

DEAN NORRIS: 1

EMILIA CLARKE: 1

FREYA ALLAN: 1

HARRY MELLING: 1

JASON ALEXANDER: 1

JENNIFER ANISTON: 1

JERRY SEINFELD: 1

KATHERYN WINNICK: 1

KIT HARINGTON: 1

LISA KUDROW: 1

MAISIE WILLIAMS: 1

MICHAEL RICHARDS: 1

NIKOLAJ COSTER WALDAU: 1

SOPHIE TURNER: 1

TRAVIS FIMMEL: 1

---

MENU

1. Print all TV series
2. Add TV series
3. Drop TV series
4. Print your favorite series with schedule

5. Print all your favorite actors

6. Exit

---

Please enter your choice: 6

Goodbye, ANIL OZDEMIR!

### **IMPORTANT!**

If your code does not compile, then you will get **zero**. Please be careful about this and double check your code before submission.

### **VERY IMPORTANT!**

Your programs will be compiled, executed and evaluated automatically; therefore, you should definitely follow the rules for prompts, inputs and outputs. See **Sample Runs** section for some examples.

- **Order of inputs and outputs** must be in the mentioned format.

Following these rules is crucial for grading, otherwise our software will not be able to process your outputs and you will lose some points in the best scenario.

## **General Rules and Guidelines about Take-Home Exams**

The following rules and guidelines will be applicable to all take-home exams, unless otherwise noted.

### **How to get help?**

You can use GradeChecker (<http://sky.sabanciuniv.edu:8080/GradeChecker/>) to check your expected grade. Just a reminder, you will see a character ¶ which refers to a newline in your expected output.

You may ask questions to TAs (Teaching Assistants) or LAs (Learning Assistants) of CS201. Office hours of TAs/LAs are at the [course website](#).

## What and Where to Submit

You should prepare (or at least test) your program using MS Visual Studio 2012 C++ (Windows users) or using xcode (macOS users).

It'd be a good idea to write your name and last name in the program (as a comment line of course). Do not use any Turkish characters anywhere in your code (not even in comment parts). If your name and last name is "Gülşen Demiröz", and if you want to write it as comment; then you must type it as follows:

```
// Gulsen Demiroz
```

Submission guidelines are below. Since the grading process will be automatic, students are expected to strictly follow these guidelines. If you do not follow these guidelines, your grade will be 0.

- Name your submission file as follows:
  - Use only English alphabet letters, digits or underscore in the file names. Do not use blank, Turkish characters or any other special symbols or characters.
  - Name your cpp file that contains your program as follows:  
**"SUCourseUsername\_THENumber.cpp"**
  - Your SUCourse user name is actually your SUNet username, which is used for checking sabanciuniv emails. Do **NOT** use any spaces, non-ASCII and Turkish characters in the file name (**use only lowercase letters**). For example, if your SUCourse username is "altop", then the file name should be: **altop\_the6.cpp**.
  - Do not add any other character or phrase to the file name.
- Please make sure that this file is the latest version of your take-home exam program.
- Submit your work **through SUCourse only**! You can use GradeChecker only to see if your program can produce the correct outputs both in the correct order and in the correct format. It will not be considered as the official submission. You must submit your work to SUCourse. You will receive no credits if you submit by any other means (email, paper, etc.).
- If you would like to resubmit your work, you should first remove the existing file(s). This step is very important. If you do not delete the old file(s), we will receive both files and the old one may be graded.

## Grading, Review and Objections

Be careful about the automatic grading: Your programs will be graded using an automated system. Therefore, you should follow the guidelines on the input and output order. Moreover,

you should also use the same text as given in the "Sample Runs" section. Otherwise, the automated grading process will fail for your take-home exam, and you may get a zero, or in the best scenario, you will lose points.

Grading:

- There is NO late submission. You need to submit your take-home exam before the deadline. Please be careful that SUCourse time and your computer time may have 1-2 minutes differences. You need to take this time difference into consideration.
- Successful submission is one of the requirements of the take-home exam. If, for some reason, you cannot successfully submit your take-home exam and we cannot grade it, your grade will be 0.
- If your code does not work because of a syntax error, then we cannot grade it; and thus, your grade will be 0.
- Please submit your **own** work only. It is really easy to find "similar" programs!
- Plagiarism will not be tolerated. Please check our plagiarism policy given in the [Syllabus](#) or on the [course website](#).

## Plagiarism will not be tolerated!

Grade announcements: Grades will be posted in SUCourse, and you will get an Announcement at the same time. You will find the grading policy and test cases in that announcement.

Grade objections: It is your right to object to your grade if you think there is a problem, but before making an objection please try the steps below and if you still think there is a problem, contact the TA that graded your take-home exam from the email address provided in the comment section of your announced take-home exam grade or attend the specified objection hour in your grade announcement.

- Check the comment section in the take-home exam tab to see the problem with your take-home exam.
- Download the file you submitted to SUCourse and try to compile it.
- Check the test cases in the announcement and try them with your code.
- Compare your results with the given results in the announcement.
- ***You have 7 days for any objections after the grades are announced.***

***Good Luck!***

***Anıl Özdemir & Barış Altop & Gülşen Demiröz***