Stadium Creator

My biggest program is the „Stadium Creator" a **console application** designed to help users **manage stadiums, events, performers, and ticket sales**. The program implements numerous classes, so managing them, and making sure that created objects are added to relevant lists, was one of the biggest challenge. Additionally, C# sensitivity to data types makes it complicated to make sure that user inputs are always valid.

Code available on my GitHub:

https://github.com/DominikaBomba/stadiumcreator/blob/main/stadium_creator/Program.cs

Program specifics:

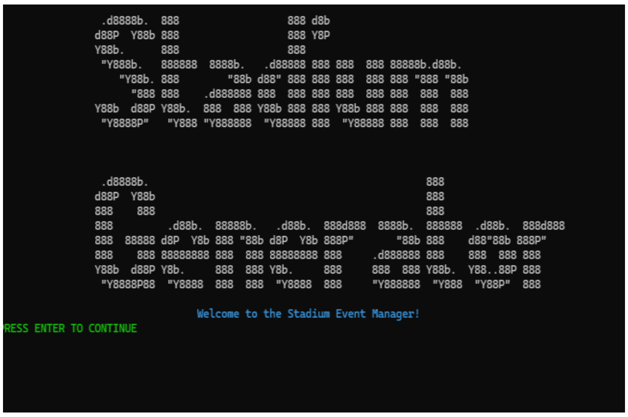
It is programmed in C#(on a .NET platform), using object-oriented programming. It has about 1300 lines of code

It uses:

→ Objects, Classes, Constructors
→ Inheritance, Composition, Polymorphism
→ Interfaces

Program functionality:

→ It has a **menu-driven console** interface that guides users through various options for managing stadiums and events.



```
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 .d8888b.                                              888
d88P  Y88b                                             888
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                 Welcome to the Stadium Event Manager!
RESS ENTER TO CONTINUE
```
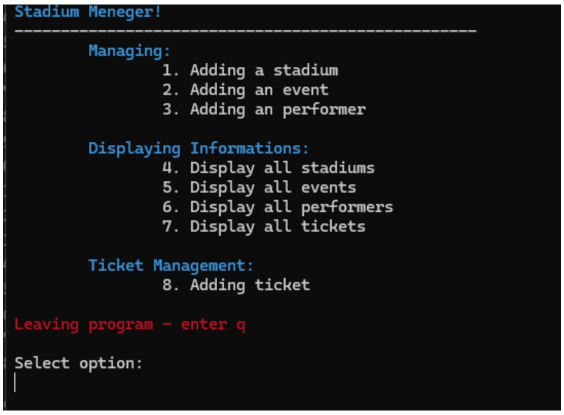
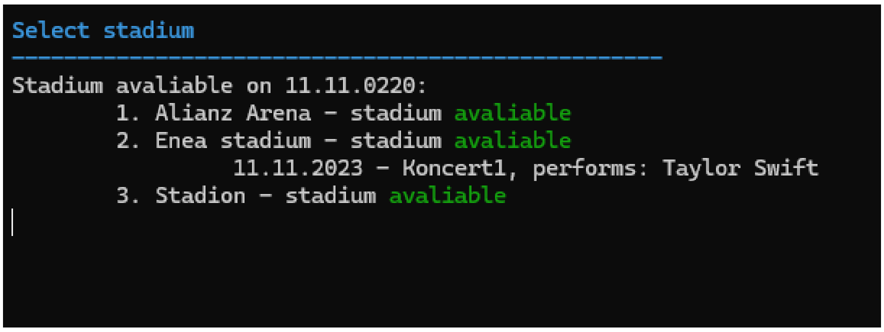



```
Stadium Meneger!
-----------------------------------------------------
        Managing:
                1. Adding a stadium
                2. Adding an event
                3. Adding an performer

        Displaying Informations:
                4. Display all stadiums
                5. Display all events
                6. Display all performers
                7. Display all tickets

        Ticket Management:
                8. Adding ticket

Leaving program - enter q

Select option:
|
```

→ **Adding and Displaying**:

- Users can **add new stadiums** and **view existing ones**.

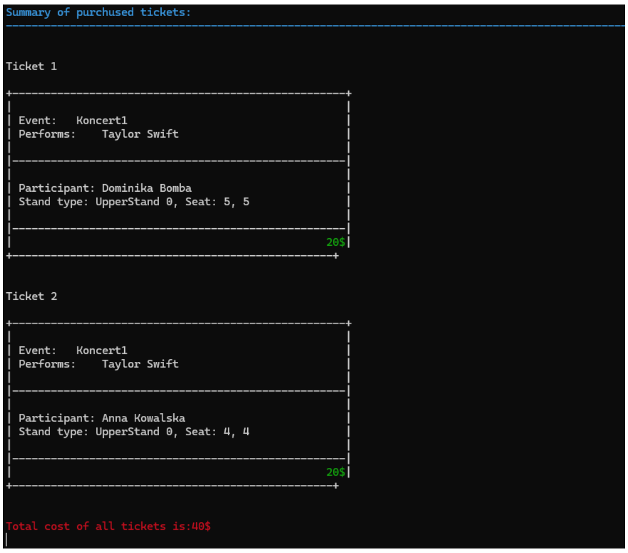
- Users can **add events**, check availability of stadiums, add details like event title, date, and performers.
- Performer Management: Users can **add performers** linked to events.



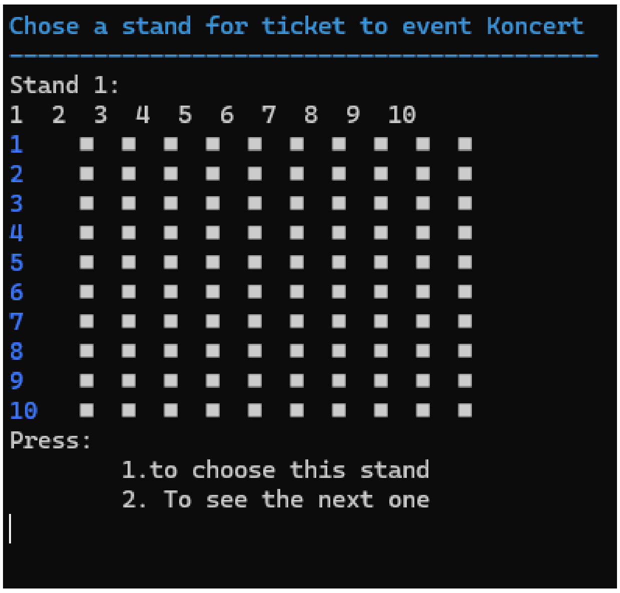
```
Select stadium
--------------------------------------------------
Stadium avaliable on 11.11.0220:
        1. Alianz Arena - stadium avaliable
        2. Enea stadium - stadium avaliable
                 11.11.2023 - Koncert1, performs: Taylor Swift
        3. Stadion - stadium avaliable
```

→ **Ticket Management**:

- Users can select events and **add tickets for those events**.
- The application handles ticket details, including stand type, **seat information**(checking their availability)**,** and participant names.
- **A summary of purchased tickets** is displayed, including event details **and total cost.**



```
Summary of purchused tickets:
------------------------------------------------------------------------------------------------


Ticket 1

+-----------------------------------------------------+
|                                                     |
| Event:   Koncert1                                   |
| Performs:    Taylor Swift                           |
|                                                     |
|-----------------------------------------------------|
|                                                     |
| Participant: Dominika Bomba                         |
| Stand type: UpperStand 0, Seat: 5, 5                |
|                                                     |
|-----------------------------------------------------|
|                                                  20$|
+---------------------------------------------------+


Ticket 2

+-----------------------------------------------------+
|                                                     |
| Event:   Koncert1                                   |
| Performs:    Taylor Swift                           |
|                                                     |
|-----------------------------------------------------|
|                                                     |
| Participant: Anna Kowalska                          |
| Stand type: UpperStand 0, Seat: 4, 4                |
|                                                     |
|-----------------------------------------------------|
|                                                  20$|
+---------------------------------------------------+


Total cost of all tickets is:40$
```



```
Chose a stand for ticket to event Koncert
------------------------------------------
Stand 1:
1  2  3  4  5  6  7  8  9  10
1    ■  ■  ■  ■  ■  ■  ■  ■  ■  ■
2    ■  ■  ■  ■  ■  ■  ■  ■  ■  ■
3    ■  ■  ■  ■  ■  ■  ■  ■  ■  ■
4    ■  ■  ■  ■  ■  ■  ■  ■  ■  ■
5    ■  ■  ■  ■  ■  ■  ■  ■  ■  ■
6    ■  ■  ■  ■  ■  ■  ■  ■  ■  ■
7    ■  ■  ■  ■  ■  ■  ■  ■  ■  ■
8    ■  ■  ■  ■  ■  ■  ■  ■  ■  ■
9    ■  ■  ■  ■  ■  ■  ■  ■  ■  ■
10   ■  ■  ■  ■  ■  ■  ■  ■  ■  ■
Press:
        1.to choose this stand
        2. To see the next one
```

Program Testing and bugs

→ I've created and run some **unit tests using nUnit** framework, to varify the basic functionality of Classes and Constructors.

→ To find bugs I used Console.WriteLine statements to **print variable values** and program states at different points, to see what's happening internally.

→ I've also added various **checks to ensure that user inputs are valid**, prompting users to enter values within acceptable ranges (by using **try-catch** and **TryParse** methods) and providing feedback for invalid inputs. (e.g. The program ensures the year of birth cannot be later than the current year.)