

Student name: .....  
Student number:.....  
Class name:.....

**OPLEIDING : INFORMATICA**  
**SOORT TENTAMEN : Tentamen**  
**VOLTIJD / DEELTIJD : Voltijd**  
**CURSUSCODE : INFDEV04-5**  
**CURSUSNAAM : Development 5**  
**PERIODE : OP1**  
**GROEPEN : INF2A, INF2B, INF2C, INF2D, INF2E, INF2F, Herkansers**  
**TIJDSDUUR IN MINUTEN : 120 minuten**  
**CURSUSBEHEERDER : Mohamed Abbadi, Ahmad Omar**  
**AUTEUR : Mohamed Abbadi**  
**TWEEDE LEZER : Ahmad Omar**

**DIT TENTAMEN BESTAAT UIT :**

**VOORBLAD MET..... GENUMMERDE PAGINA'S**

**13 OPEN VRAGEN**

**TOEGESTANE HULPMIDDELEN: pen, laptop.**

**SCHRIJF DUIDELIJK: wat niet duidelijk leesbaar is, wordt niet beoordeeld.**

**Schrijf je antwoorden en berekeningen: op het uitgereikte tentamen (zoals aangegeven)**

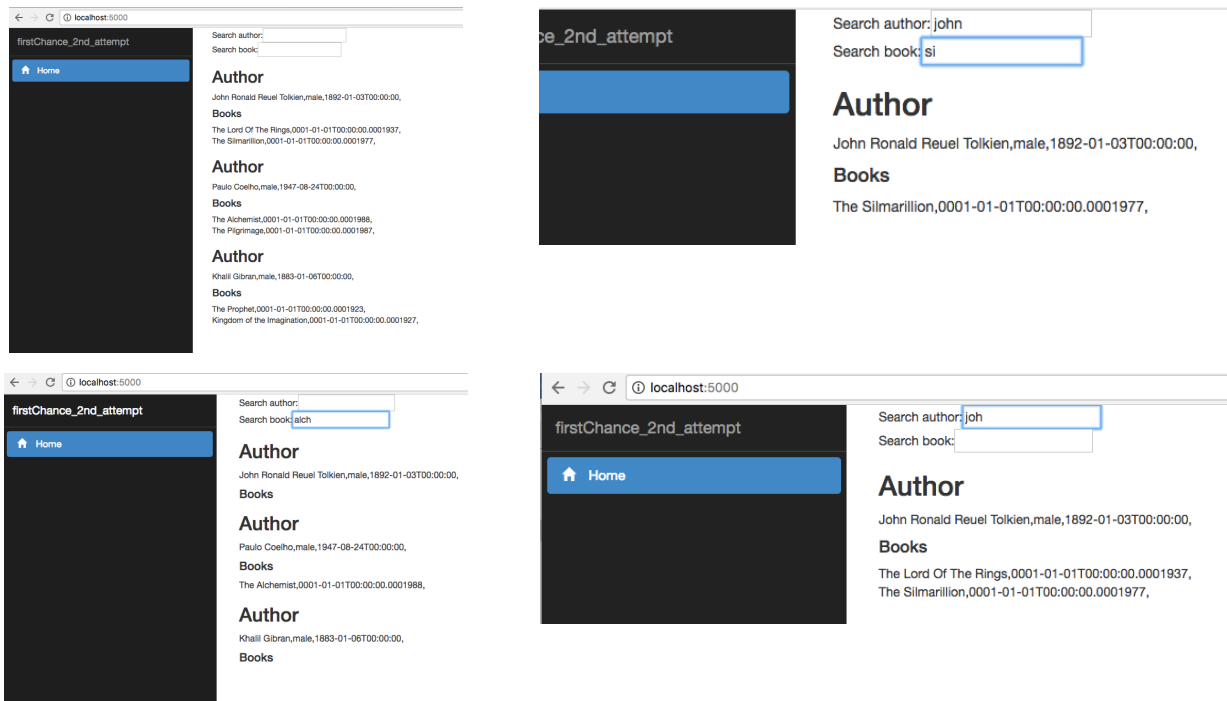
**BIJZONDERHEDEN:**

**Tentamen weer inleveren!**

**Veel succes!**

## Case description:

The provided application for the exam is an Authors/Books application, where a user is able to visit the authors stored in the database and their books (see below figures). In this application authors and books have a Many-to-Many relationship, i.e., an author can write many books and a book can be written by many authors.



We provide you a solution which is missing a series of code blocks. Each code block is mapped to specific points. To get the points for a specific block you need to fill it with valid/correct code. To pass the exam you need to acquire at least 5.5 points. The missing code blocks are marked in the solution by a TODO comment<sup>1</sup>. In a TODO item you will also find the associated points. Note each TODO has a specific number necessary later for the submission (see submission rules in the following page). TODOs are distributed in the solution as follows:

- > Models
  - Models.cs
    - 4 TODOs 4 ptn
  - Startup.cs
    - 1 TODO 0.5 ptn
- > Controllers:
  - LibraryController.cs
    - 1 TODOs 1 ptn
- > Views:
  - Index.cshtml
    - 1 TODO 0.5 ptn
  - SimpleLibrary.tsx
    - 6 TODO 4 ptn

<sup>1</sup> You can find all the TODOs by searching `//TODO` in the search box of your IDE (in case of Visual Studio Code you can find the search box by clicking the magnifier icon on the left side of the IDE)

### Submission form and rules

As you can see below (and in the application) each TODO is identified with a unique number. To accept your solution, you must write below the code you wrote in your application in the respective TODO slot. So for example if you wrote some code for TODO 5 in the application then you must copy it below in the TODO 5 slot. For this exam you do not need to upload the solution on natschool, but give these papers back to the attendant present in the room.

**NB. Unreadable text in a TODO slot will give you 0.**

#### TODO 1 (0.5pt):

---

---

---

---

---

---

---

---

#### TODO 2 (2ptn):

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

#### TODO 3 (1ptn):

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

**TODO 4 (0.5ptn):**

---

---

---

**TODO 5 (0.5ptn):**

---

---

---

---

---

---

**TODO 6 (1ptn):**

---

---

---

---

---

---

---

---

---

---

---

**TODO 7 (0.5ptn):**

---

---

---

---

---

**TODO 8 (0.5ptn):**

---

---

---

---

**TODO 9 (1ptn):**

---

---

---

---

---

---

**TODO 10 (1ptn):**

---

---

---

---

---

---

---

**TODO 11 (0.5ptn):**

---

---

---

---

---

---

---

---

**TODO 12 (0.5ptn):**

---

---

---

---

---

---

---

---

**TODO 13 (0.5ptn):**

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---