IT Software Solutions for Business
WorldSkills 2024 National Competition
HUNGARY

Round 1

Submitted by:
Skills IT

Contents

Introduction

You used to work as a freelance software developer, but now you've applied for a job as a developer at a large software development company. The company's management wants to test your skills, so as part of the recruitment process, they asked you to develop a prototype desktop application for the Ultra Balaton Running Festival. In addition to sharing up-to-date information about the running festival, the future application aims to provide an easy-to-use tool for the running teams to distribute the stages.

The aim of the UB Running Fest is to run around Lake Balaton individually or in a team. Teams of up to 10 people can sign up for the team event. The organizers will specify the stages in advance and team members can allocate them among themselves.

The first 7 km long stage starts from Balatonfüred and goes to Aszófő, so Aszófő is the first possible place to change runners. Any number of stages can be assigned to one runner. A runner's stages can be consecutive, but a runner can also run separate stages several times.

In the prototype, all you need to develop is a login page and a simplified version of the stage calculator. The purpose of the calculator is to ensure that, once the runners' details have been entered, the allocation of stages and the calculation of the times required to run.

Your desktop application needs to communicate with the API, it doesn't have to work in offline conditions, but you should handle such cases.

Description of project and tasks

Your task is divided into three parts.

1. In the first part, you will develop the REST API for UIs.
2. In the second part, you have to create a login for the users.
3. In the third part, you will develop a simplified UI version of the stage calculator.

Database

1. Use the **WS2024_HU_TP_S09_R1.sql** from the assets folder
2. Database: **SessionOne**
3. User: **ws**, Password**: worldskills**

How to submit your work

4. You have to share your work in a private GitHub repo as described in the README file of the test project GitHub repo (https://github.com/skillsit-hu/ws2024-s09-hu-r1).
5. Share a link with us in email (ws2024s09@skillsit.hu) from where we can download the executable files (**API.exe** and **UI.exe**) to test your solutions.

Part 1 – REST API

POST http://localhost:3000/api/v1/login

Authentication

If the request is successful, the endpoint returns HTTP response status code must be **204,** but the data could be empty.

- We just have only one user, which is not stored in a database, hardcoded to code.
- Username: **admin**, Password: **S3cr3t**

If the request is unsuccessful, the endpoint returns the following data structure in JSON format and HTTP response status code must be **401**:

```
{
      error: "Wrong username or password"
}
```

GET http://localhost:3000/api/v1/routes

Get all routes sorted by Location, where the starting Location name is "Rajt". eg.: Rajt-Aszófő, Aszófő-Fövenyes, Fövenyes-Balatonalakli, …

If the request is successful, the endpoint returns the following data structure in JSON format:

```
[
      {
            id: number,
            distance: number,
            startingLocation: string,
            arrivalLocation: string,
            routePartName: string
      }
]
```

To test your solution use our Postman collection, which is in the assets folder.
`WS2024_HU_TP_S09_R1.postman_collection.json`

Part 2 – Login Page

For the login page, you need to create a simple login solution.

- Handle the errors
- Implement the logout functionality

Part 3 – UI: Route Assignment Calculator

In this section, you need to create an interactive tool to help teams allocate each part of the route.

The following parts should appear in the page:

- Team member table
- Route planning table

You need to fetch the basic information for the calculator from the API.

The calculator tool in this prototype version does not need to be responsive, the evaluation is done on a full HD desktop (1920x1080) display.

However, in desktop view, it should be well designed, elegant and easy to use. The look and feel should match the style of the login page.

Team Member Table

The Team member table contains the following fields:

- line number (automatically filled with line numbers 1-10)
- first name
- last name
- speed (estimated time to run one km in MM:SS format)
- total distance (calculated value, number rounded to one decimal place, sum of the distances undertaken by the runner, see later)

The table has a header row with the title of the fields and 10 rows for the data. Any field other than the line number and total distance fields can be freely edited. Initially, the table is empty.

The speed field should have the appropriate input mask (MM:SS), so when the user enters the numbers, they get formatted correctly**.** For example, if the user types 1234 the field should display 12:34.

Route Assignment Table

The Team member table contains the following fields:

- line number
- distance (in km)
- starting point
- arriving point
- name (sponsored name the part of the route)
- runner (name of the runner)
- speed
- time (the time needed for the runner to complete the distance in MM:SS format)
- time in total (HH:MM:SS format)

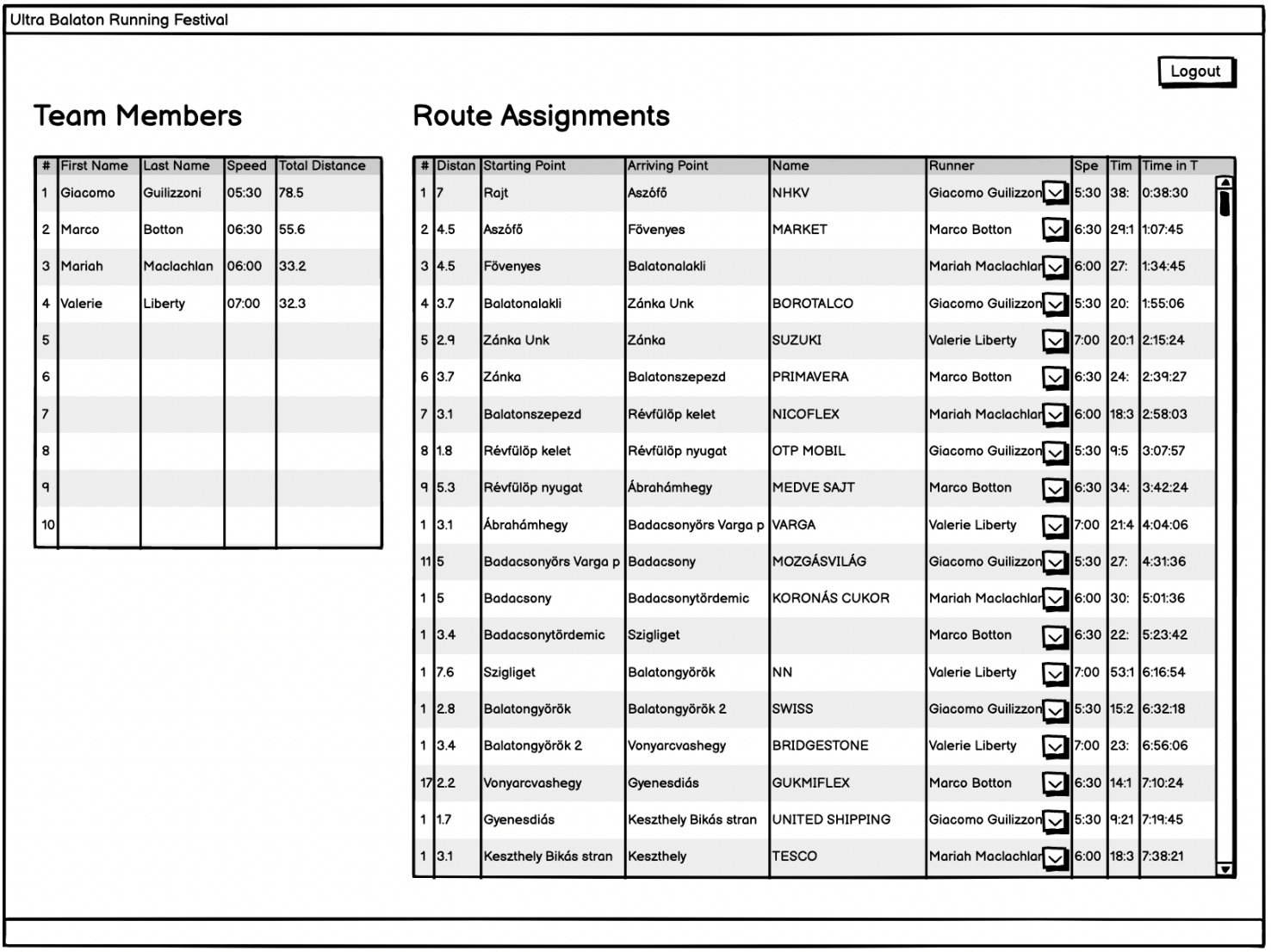
All basic data except the runner and time fields are provided from database:

The runner field allows you to select a runner from a drop-down list. The first item in the list is always "No runner selected". The other items contain the names, in alphabetical order, of the runners who have already been recorded in the Runner table.

If a runner is selected from the dropdown, the time field is automatically calculated based on the distance field and the runner's speed.

At the same time, the total distance field in the selected runner's row in the Runners table is updated (in all cases it should contain the total length of the distance the runner has run).

All of the fields except the runner field are read only, and should not be modifiable by the user.



#	First Name	Last Name	Speed	Total Distance
1	Giacomo	Guilizzoni	05:30	78.5
2	Marco	Botton	06:30	55.6
3	Mariah	Maclachlan	06:00	33.2
4	Valerie	Liberty	07:00	32.3
5				
6				
7				
8				
9				
10				

#	Distan	Starting Point	Arriving Point	Name	Runner	Spe	Tim	Time in T
1	7	Rajt	Aszófő	NHKV	Giacomo Guilizzon	5:30	38:	0:38:30
2	4.5	Aszófő	Fövenyes	MARKET	Marco Botton	6:30	29:1	1:07:45
3	4.5	Fövenyes	Balatonalakli		Mariah Maclachlar	6:00	27:	1:34:45
4	3.7	Balatonalakli	Zánka Unk	BOROTALCO	Giacomo Guilizzon	5:30	20:	1:55:06
5	2.9	Zánka Unk	Zánka	SUZUKI	Valerie Liberty	7:00	20:1	2:15:24
6	3.7	Zánka	Balatonszepezd	PRIMAVERA	Marco Botton	6:30	24:	2:39:27
7	3.1	Balatonszepezd	Révfülöp kelet	NICOFLEX	Mariah Maclachlar	6:00	18:3	2:58:03
8	1.8	Révfülöp kelet	Révfülöp nyugat	OTP MOBIL	Giacomo Guilizzon	5:30	9:5	3:07:57
9	5.3	Révfülöp nyugat	Ábrahámhegy	MEDVE SAJT	Marco Botton	6:30	34:	3:42:24
1	3.1	Ábrahámhegy	Badacsonyörs Varga p	VARGA	Valerie Liberty	7:00	21:4	4:04:06
11	5	Badacsonyörs Varga p	Badacsony	MOZGÁSVILÁG	Giacomo Guilizzon	5:30	27:	4:31:36
1	5	Badacsony	Badacsonytördemic	KORONÁS CUKOR	Mariah Maclachlar	6:00	30:	5:01:36
1	3.4	Badacsonytördemic	Szigliget		Marco Botton	6:30	22:	5:23:42
1	7.6	Szigliget	Balatongyörök	NN	Valerie Liberty	7:00	53:1	6:16:54
1	2.8	Balatongyörök	Balatongyörök 2	SWISS	Giacomo Guilizzon	5:30	15:2	6:32:18
1	3.4	Balatongyörök 2	Vonyarcvashegy	BRIDGESTONE	Valerie Liberty	7:00	23:	6:56:06
17	2.2	Vonyarcvashegy	Gyenesdiás	GUKMIFLEX	Marco Botton	6:30	14:1	7:10:24
1	1.7	Gyenesdiás	Keszthely Bikás stran	UNITED SHIPPING	Giacomo Guilizzon	5:30	9:21	7:19:45
1	3.1	Keszthely Bikás stran	Keszthely	TESCO	Mariah Maclachlar	6:00	18:3	7:38:21

Additional information

- Some media, icons and text have been provided for you in the media files. You are free to use these, but you can also create your own, as long as the application is still fit for purpose. **You should not use any other media files (e.g. downloaded videos, images, icons, etc.)**.
- Clean code and user interface accessibility are also important considerations.
- Do not hardcode API responses other than the user credentials as another database will be used for testing.