TAITAJA MÄSTARE Espoo 2023 | SkillsFinland

Taitaja2023_206_FI (English)

Web Development final task

Introduction

In Taitaja 2023 final task, you will design, develop, and implement a page related to a new service based on the ideas and requirements given by Oppidoo Oy (https://www.oppidoo.fi/). You will also implement the technical functionalities related to the page according to the given framework.

You will also meet with the client's representative, Mari Laurenius, the founder and entrepreneur of Oppidoo Oy. For Mari, it is close to her heart to help with mathematics education. Her main motto is "Everyone can learn mathematics", which should be reflected on the website. She has helped numerous students overcome learning difficulties in mathematics. With Mari, you will brainstorm new interactive features and website renovation for the new online service.

The website's appearance is also from the time of its establishment, so in addition to functionality and discoverability, the site needs a modern look. The client has a new design created by a graphic designer as a basis for the Oppidoo.fi renovation. Mari is also interested in continuing development work on the site in the future.

The main objective of the website renovation is to improve the page's usability and increase customer engagement on the website. As part of the final task, you are required to create one game for this service. The specifications and technical requirements for the game are outlined in a separate module.

In addition to technical, quantitative, and qualitative criteria, customer collaboration skills are also evaluated in the task.

The client's requirements for the website are as follows:

- Modern appearance
- User-friendliness and responsiveness
- Ease of maintenance and updating.

Customer introduction

Oppidoo Oy is an innovative educational and training company.

They provide multidisciplinary expertise to support the child's growth and development. The target group is children and families, from toddlers to teenagers and adults. They organise private lessons and small group lessons. Their teachers are qualified educational professionals. Each lesson includes an educational goal designed specifically for this child or young adult's future and meaningful adulthood.

They focus on increasing internal motivation, finding one's learning style, meaningful work and rewards.

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Module A
Planning, working with the customer and project management

Competition time used for the task: 2h.

In this module, you prepare to meet the client individually. Use this time to gather ideas and examine the current site to offer suggestions for improvement. The main goal of this module is to prepare an improvement proposal to fix, improve and reorganise the current homepage.

At the beginning of the module, the client presents his company, website, and vision. You can make notes on paper and ask questions if necessary. During the customer presentation, your task is to gather enough information to complete this module successfully.

Site problems:
• the page is outdated and faulty
• poor Search Engine Optimization (SEO)
• ideas are needed on how to make the site more interesting and modern

Make suggestions to correct **each** problem. If you find other problems with the page, please include possible solutions in the proposal.

Suggestions for improvement

The format of the proposal is free, but it must be in .pdf format and added to the GitHub repository of the final task. Name the file as follows: oppidoo_improvements_firstname_surname.pdf. Add your improvement suggestions to GitHub before **11:30 am**.

In this document, you will be presenting your observations and proposed solutions. Specifically, describe how search engine optimisation can enhance the site's findability. Furthermore, your task includes providing a simplified implementation plan for these improvements and advising the customer on addressing any existing issues.

Project management

In this module, you can set up cPanel and create the technical prerequisites to carry out the tasks of the next module. In addition, you need to define a GitHub repository and create a readme file where you collect all the necessary information about the project.

In this module, the improvement proposals and project management will be evaluated.

At the end of the module, you must deliver:

a) GitHub repository where there is initially a README.md file and improvement suggestions for the customer

Marks

A1	Suggestions for improvement	8,50
A2	Projektihallinta	1,50
		10,00

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Module B
Implementation of the web page

Competition time used for the task: 2h.

Your task is to implement a front page and a games page for the customer according to the customer's requirements and wireframe structure. The implemented website must follow the customer's graphic instructions and use the given graphic material. Adhering to the client's corporate look, colours, and styles is essential so that the new website matches the current site. The customer demands that the page is user-friendly, modern, and easy to use on different end devices.

The mandatory parts of the style guideline, which must be taken into account in the implementation, are the logo, colours, fonts and text size, wireframes and images, which must be taken from given assets.

Frontpage

To ensure proper implementation, it is essential to follow the mandatory parts of the style guideline, which include the logo, colours, fonts, text size, wireframes, and given images.

Follow provided wireframes (*frontpage_wireframe_desktop.png* and *frontpage_wireframe_mobile.png*)

Frontpage mandatory parts are:

- **Header**
  - Logo,
  - Menu (Teaching (*empty link*), Blog (*empty link*), Games (*games.html*))

- **Hero-banner**
  - Background image/video for marketing purposes with the short text (*hero.txt*)
  - CTA button.

- **Math is easy / Math is difficult**
  A section which is separated into two parts (Math is easy / Math is difficult)
  - Both have a title, link and background image
  - Use mouseover effects to make this section catchy and attractive

- **Teacher**
  Short introduction of the teacher
  - Image, title, text (*teacher.txt*), button (*empty link*)

- **Feedback from the customers**
  Three feedbacks from satisfied customers (*feedback.txt*)
  - Each feedback has a name, text and image

- **Games page add**
  - Image/video for marketing purposes with the short text (*games-ad.txt*)
  - CTA button linked to games page (*games.html*)

- **Footer** (texts from the original page)
  - Logo
  - Address
  - Y-tunnus
  - Contact us! – icons for WhatsApp, Facebook ja LinkedIn

Games page

Follow provided wireframes (*games_wireframe_desktop.png* ja *games_wireframe_mobile.png*).

Games page mandatory parts are:

- **Header**
  - Logo,
  - Menu (Home (*index.html*), Teaching (*empty link*), Blog (*empty link*), Games (*games.html*))
  - Log-in button

- **Hero-banner**
  - Background image/video for marketing purposes with the short text (*games.txt*)

- **Search**
  - By default, all games are visible
  - Games can be searched by name, and only matching games will be displayed

- **Filtering by categories**
  - By default, all games are visible
  - Filtering options
    - addition and subtraction games (category 1)
    - multiplication and division games (category 2)
    - fraction and decimal games (category 3)
    - geometry games (category 4)
  - Create enough game cards and add different categories for displaying the filtering functionality.

- **Games displaying (*grid view*)**
  Games are displayed as game cards
  - Each card must include
    - Image, title, category, link to the game page
  - By default, six first card is displayed
  - For displaying the pagination functionality, create at least seven game cards

- **Footer** (texts from the original page)
  - Logo
  - Address
  - Y-tunnus

- Contact us! – icons for WhatsApp, Facebook and LinkedIn

The Taitaja 2023 organisation's GitHub Final repository contains all the mentioned files and resources. The elements of the site must work responsively, and the service must be optimised for desktop use.
The resolutions used in the review are:

- Desktop use is evaluated with a resolution of 1280px * 720px.
- Mobile: iPhone SE selected from Google Chrome Developer Tools (375px * 667px).

Ensure your code (HTML and CSS) is written semantically correctly, and validation does not give errors. The check uses the W3C validator. Note that the written code should be optimised and well-organised. Add comments to improve readability.

To check the quality of the code, we also use the Chrome Lighthouse service. Performance, accessibility, and best practices categories are checked in the desktop view.

At the end of the module, you must deliver:

a) a working static responsive website on the server
b) updated GitHub repository (created code from module B included) and updated README.md file

Pisteet

B1	Frontpage	15,50
B2	Games page	13,50
B4	Project management	1,00
		30,00

Module C
Intranet/maintenance tool implementation for the site

Competition time used for the task: 3h.

In this module, an intranet/maintenance tool is implemented for the previously created site, which utilizes the database. The website administrator can add, edit, and delete information that is used to produce the content of the service. All data must come from a database, and you must set up a safe and secure database connection. The intranet must be accessible from **%username%.taitaja2023.louhi.net/intra**

You must create all necessary database tables and keep security in mind, including encryption with e.g. Argon2 algorithm.

When producing the code, it must be considered high quality and suitable for further development. Code must be optimised, clean and contain techniques that make it easy to read, parse, and understand. Ensure you include clear instructions for using the intranet in the readme file.

Please note that this module is done simultaneously with the next module, and the results of this module will be delivered at the end of the competition day.

Logging in

The intranet site can only be accessed via the login page. If the URL of the intranet site is accessed without logging in, the user is redirected to the login page.

Once the user is logged in, the username and logout button will appear in the main menu.

Log in with the following credentials:

- **admin** and password **taitaja2023** and
- **player** and password **taitaja2023**

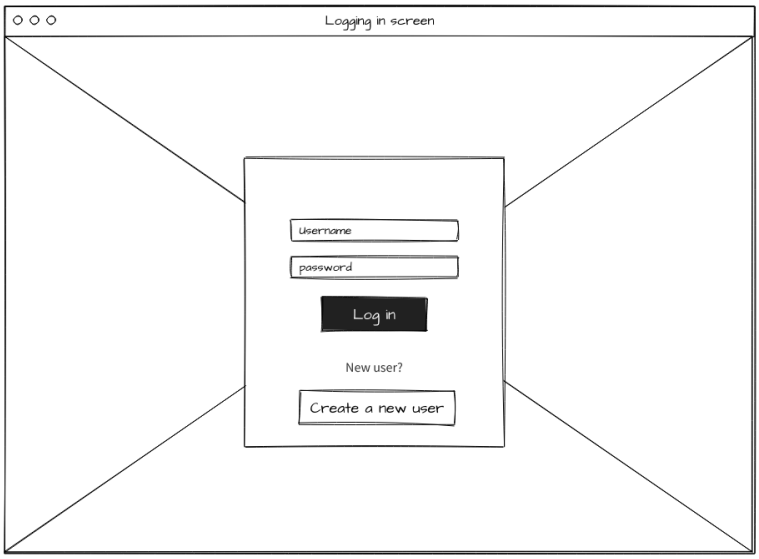

Image 1 – Logging in

Login form:

- Username
- Password
- Login button
- Create a new user button

The information on the login form is checked before sending the form.

Creating a new user

From the login page, new users can create a new user account. Users added from the login page always have a player role as a default role.

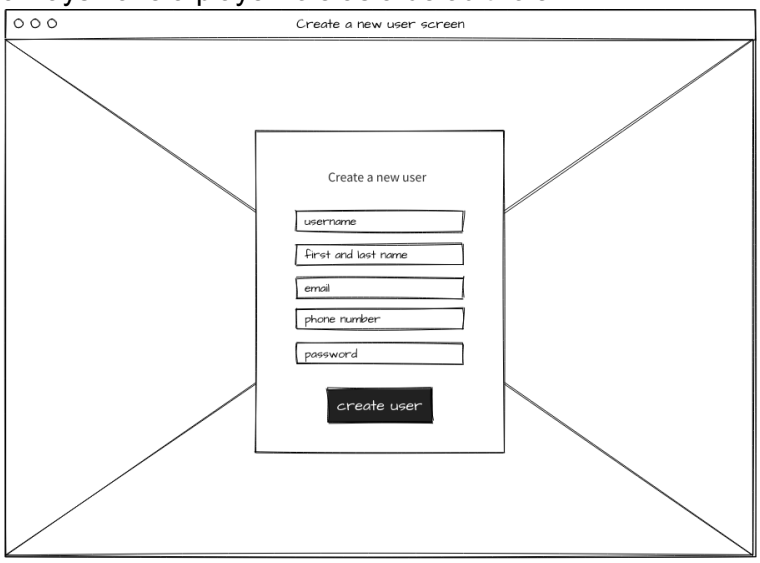

Image 2 – creating a new user

New user creation form:

- Username (required, unique, minimum length 4, maximum length 60)
- First and last name

- Email
- Phone number
- Password (required, minimum length 8, maximum length 2^16, must contain a number)
- Create user button

User roles

There are two types of users: **administrator** and **player**.

Administrator:
Can log in and out of the intranet and use all its functions:

- sees all registered users
- can print the data of registered users as a CSV file
- can ban and delete the player
- can see each game's scoreboard, player names and player scores in that game

Player:
Can log in and out of the intranet and use only limited functions on the intranet:

- can edit own username, e-mail address, phone number
- can see the results of the games played
- can delete own account (soft delete)

Games and results tables

Also create a database table for games and results:

Mandatory fields of the game:

- Id
- Title
- Thumbnail
- Class

Mandatory fields of the results:

- Id
- Game id
- Score
- Time stamp
- User id (zero when the player plays without logging in)

Marks

C1	Loggin in	7,00
C2	Creating a new user	2,50
C3	User roles	8,00
C4	Game and results tables	2,00
C5	Project management	0,50
		20,00

Module D
Interactive module

Competition time used for the task: 4h.

In this module, you will create an interactive math game for children. The game is available from the URL **%username%.taitaja2023.louhi.net/peli_1** or the games page from the game card as a link to an individual game.

Follow the given wireframes and GUI instructions (the files are packed in *game-assets.zip*)
For the game, you get wireframes:

- game welcome screen (*game_welcome.png*)
- game login (*game_login.png*)
- game running screen (*game_ON.png*)
- game closing screen (*game_OFF.png*)

The game can be switched to full-screen mode without seeing the taskbar and browser interface (full-screen mode).

Game welcome screen

The player sees the introductory text (intro.txt) on the welcome screen and the "start game" button.

Image 3 – Game welcome screen

Logging in for the game

A logging-in view will appear if the player is not logged in. The player can ignore the login by clicking the "I don't want to log in" button.

All points are stored in the database. The results of non-logged-in users are stored in the database with user ID 0.

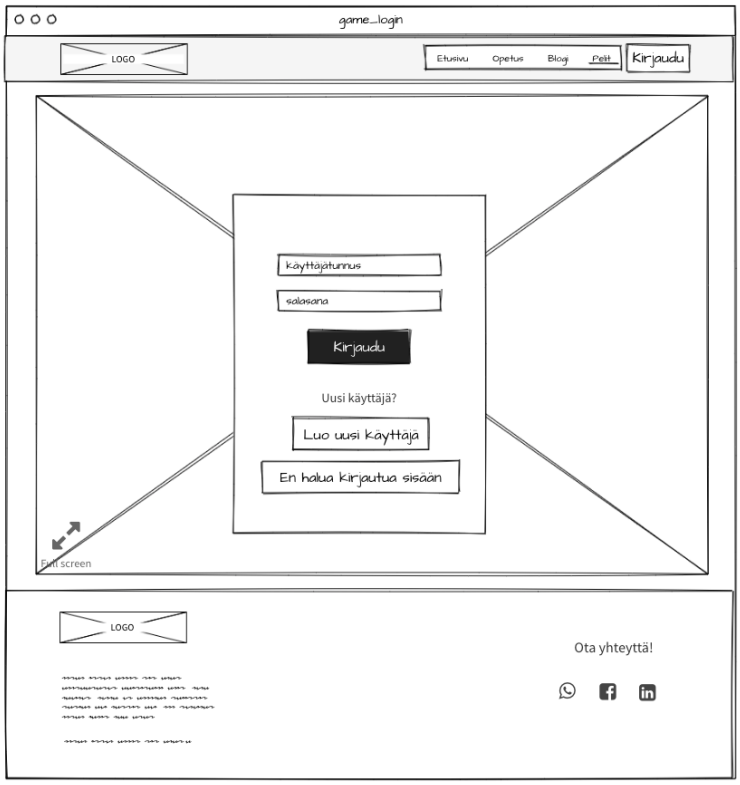

Image 4 – Logging in for the game

Game ON screen

The game is timed, and one session lasts one minute.

The player is presented with any number from one to ten, and the player has to guess the different additions that will give the correct result. On the right side of the game, the player can see all answered variations with indicators for correct and incorrect answers, remaining time and a "stop game" button.

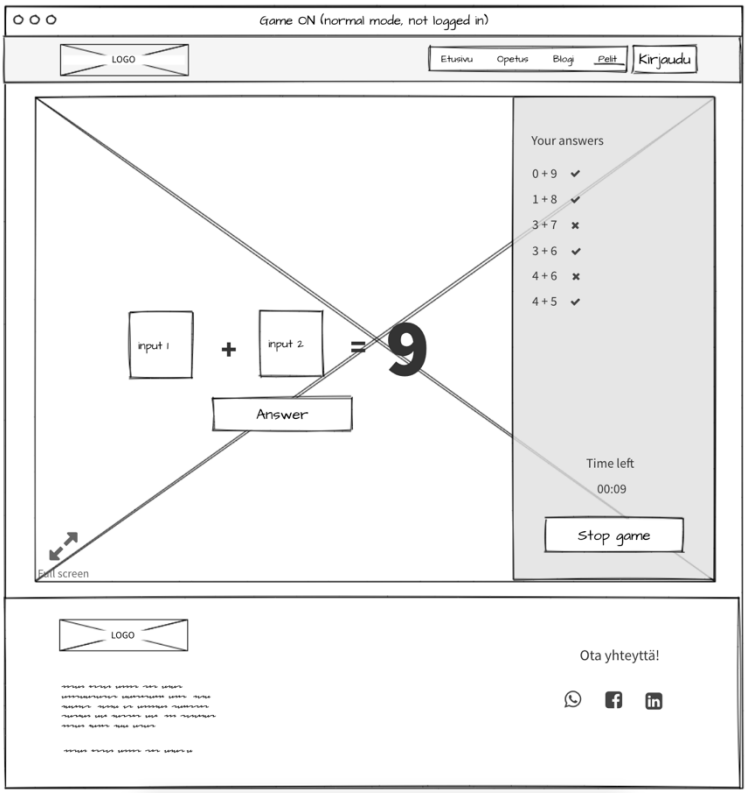

Image 5 – Game ON screen

Game OFF screen

At the end of the game, all possible options are shown, and the accuracy of the answers is calculated as the ratio of correct answers to possible options. For example, if it is possible to make a total of 10 additions and the player guessed 3 of them, the player's accuracy is 70%. Each wrong answer reduces the accuracy by 1%.

The score of the game is calculated by multiplying accuracy and time (by default the game is 60 seconds).

Examples:

- The random number is 7; there are eight possible correct answers in the game (variations of zero are also counted). The player answered correctly five (63%) times and incorrectly three (3%) times and did not cancel the game time (60 s). The player gets 36 points ((63%–3%) * 60).
- The random number is 4; the game has five possible correct answers. The player answered correctly three (60%) times and incorrectly zero (0%) times but interrupted the game time (42s). The player gets 25 points ((60–0) * 42).

In the game area, you can see the top 10 results of this game. If the player is logged in, the player's results are highlighted.

The "Play again" button opens the login module again if the player is not logged in. The "Back to games" button takes the user to the games page.

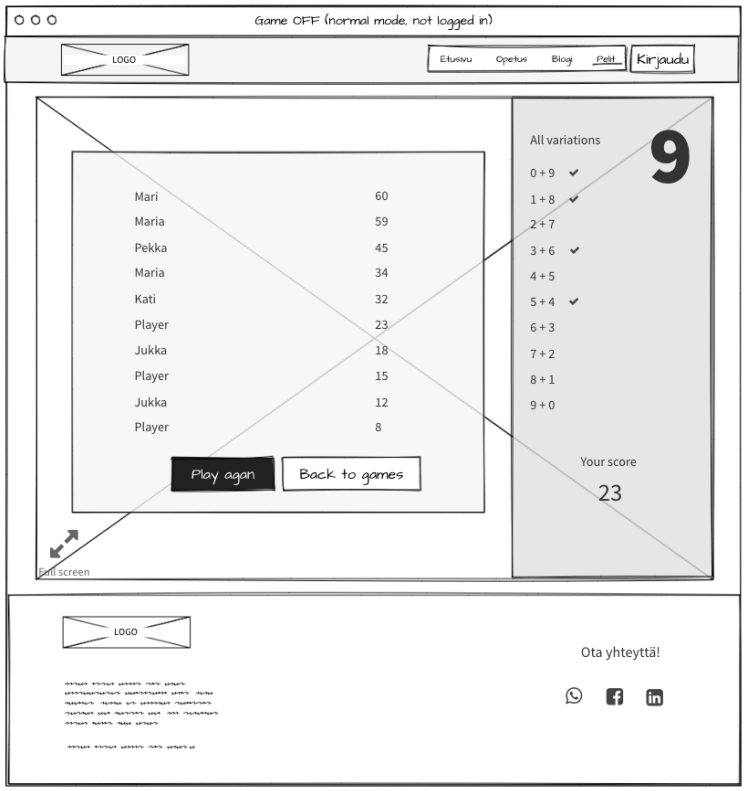

Image 6 – Game OFF screen

At the end of the day, you must submit the C and D modules at the same time:

a) a functioning website that uses a database (login, intranet and game)
b) final Github repository and README.md file

Marks

D1	Game functionality	12,50
D2	Game welcome screen	2,00
D3	Game end screen	3,50
D4	Results table	5,00
D5	Project management	2,00
		25,00

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Module E
Speedtest

You have one hour to solve different HTML, CSS, JavaScript and PHP tasks. Duration of one task approx. 5 min.

At the end of the module, you must deliver:

a) as many tasks as possible from the given tasks

Marks

E1	Speedtest	10,00
		10,00

Module F
Group work

Competition time used for the task: 2h.

You will work with other international competitors to demonstrate their creativity and knowledge in their skills. You have one hour to prepare and work together, and in the last hour, all presentations will be presented.

At the end of the module, you must deliver:

a) Presentation of the results of group work

Group work topic: What new techniques would you recommend for learning mathematics? Find and present examples of AI and/or good sites.

Marks

F1	Group work	5,00
		5,00