FULL-STACK PROJECT REPORT

On

"TWO-EDGED SOROBAN"

Department of Computer Engineering and Application

Institute of Engineering and Technology

SUBMITTED TO :-

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DECLARATION

We hereby declare that the project entitled –"TWO EDGED SOROBAN" , which is being submitted as Full Stack project of 5th semester in Computer Science and Engineering to GLA University , Mathura ,UP is an authentic record of our genuine work under the supervision of our mentor Mr. Pankaj Kapoor.

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Course: B.Tech (Computer Science and Engineering)

Year: 3rd

Semester: 5th

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CERTIFICATE

This is to certify that the above statements made by the candidates are correct to the best of my/our knowledge and belief.

_____	_____
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Mr. Pankaj Kapoor	Rohit Agrawal
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ACKNOWLEDGEMENT

A task or project cannot be completed alone. It requires the effort of many individuals .On the very outset of this project , we would like to extend our sincere and heartfelt obligations towards all the personages who helped us in this project . Without their active guidance ,help, cooperation and encouragement , we would not have made headway in the project.

It is our privilege to express our sincerest regards to our project mentor, Mr Pankaj Kapoor, for his valuable inputs, able guidance, encouragement, whole-hearted cooperation and constructive criticism throughout the duration of our project.

We are highly grateful to our Head of Department Mr Rohit Agrawal for encouraging us and providing necessary facilities during the course of work .At last but not least , gratitude goes to all faculty members who directly or indirectly helped me in this project.

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ABSTRACT

In our daily lives, we encounter many situations where we need to perform several calculations. Sometimes, this becomes annoying when we need to do even the basic calculations manually. At the same time, to handle such pressures around, we need some entertainment where we find playing games more relaxing these days. Thus, we are providing a platform where user can cope up with both the situations.

ABOUT THE PROJECT

“Two-Edged Soroban” as the name suggests is a type of abacus which means calculations and games . Hence, our website provides several options to work with:-

- Scientific Calculator:- To perform certain mathematical functions and various calculations.
- Currency Convertor:- A tool, that allows for the quick conversion of any currency into any other currency.
- 2048 :- A game , which sharpens your mind.
- Tic-Tac-Toe:- A simple game , which is liked and played by all age group.
- Stopwatch:- A kind of watch that stands out for the accuracy and precision.

REQUIREMENTS

SOFTWARE REQUIREMENTS

Languages used :- HTML, CSS & Javascript

IDE Used: Visual Studio Code

Web Browser: Google Chrome, Microsoft Edge or any other web browser

GitHub

GitHub is a web-based version-control and collaboration platform for software developers. Microsoft, the biggest single contributor to GitHub, initiated an acquisition of GitHub for $7.5 billion in June, 2018. GitHub, which is delivered through a software-as-a-service (SaaS) business model, was started in 2008 and was founded on Git, an open source code management system created by Linus Torvalds to make software builds faster. GitHub Repository: A GitHub repository can be used to store a development project. It can contain folders and any type of files (HTML, CSS, JavaScript, Documents, Data, Images). A GitHub repository should also include a license file and a README file about the project. A GitHub repository can also be used to store ideas, or any resources that you want to share.

Visual Studio Code

Visual Studio Code is a lightweight but powerful source code editor which runs on your desktop and is available for Windows, macOS and Linux. It comes with built-in support for JavaScript, TypeScript and Node.js and has a rich ecosystem of extensions for other languages (such as C++, C#, Java, Python, PHP, Go) and runtimes (such as .NET and Unity). Users can change the theme, keyboard shortcuts, preferences, and install extensions that add additional functionality. Microsoft has released Visual Studio Code's source code on the VS Code repository of GitHub.com, under the permissive MIT License, while the compiled binaries are freeware.

HARDWARE REQUIREMENTS

- Processor Required: Intel i3, i5, i7 or i9
- Operating System: Windows 8/10 , Linux
- RAM: minimum 8GB
- Hardware Devices: Computer System
- Hard Disk: minimum 256GB

INTRODUCTION

Two-Edged Soroban, as the name suggest is a fusion of calculator and games. In tools section, there are further two more sections i.e. scientific calculator and currency convertor, and then in games section there will be two different games as well. We will be providing the user various applications in a single platform that will save their time. Also, we are going to focus more on the user interfaces for better user experiences.

TECHNOLOGIES USED:

HTML

Hypertext Markup Language revision 5 (HTML5) is markup language for the structure and presentation of World Wide Web contents. HTML5 supports the traditional HTML and XHTML-style syntax and other new features in its markup, New APIs, XHTML and error handling.

There are three organizations that are currently in charge of the specification of HTML5:

1.Web Hypertext Application Technology Working Group (WHATWG) created the HTML5 specification and is in charge of the HTML5 development that provides open collaboration of browser vendors and other involved parties.

2.World Wide Web Consortium (W3C) is in charge with delivering the HTML5 specification.

3.Internet Engineering Task Force (IETF) is in charge of the development of HTML5 WebSocket API.

New features of HTML5 include:

•New parsing rules that are not based on SGML but are oriented towards flexible parsing and compatibility.

•Support of use of inline Scalar Vector Graphics (SVG) and Mathematical Markup Language (MathML) in text/html.

•New available elements include article, aside, audio, bdi, canvas, command, datalist, details, embed, figcaption, figure, footer, header, hgroup, keygen, mark, meter, nav, output, progress, rp, rt, ruby, section, source, summary, time, video and wbr.

•New available types of form controls include dates and times, email, url, search, number, range, tel and color.

•New available attributes of charset on meta and async on script.

Global attributes that can be applied for every element that include id, tabindex, hidden, data-* or customer data attributes

CSS3

Cascading Style Sheets (CSS) is a style sheet language used for describing the look and formatting of a document written in a markup language. CSS3 is a latest standard of css earlier versions(CSS2). The main difference between css2 and css3 is follows −

- Media Queries
- Namespaces
- Selectors Level 3
- Color

CSS3 modules

CSS3 is collaboration of CSS2 specifications and new specifications, we can called this collaboration is module. Some of the modules are shown below −

- Selectors
- Box Model
- Backgrounds
- Image Values and Replaced Content
- Text Effects
- 2D Transformations
- 3D Transformations
- Animations
- Multiple Column Layout
- User Interface

Use and Need of CSS3

CSS3 is used with HTML to create and format content structure. It is responsible for colours, font properties, text alignments, background images, graphics, tables, etc. It provides the positioning of various elements with the values being fixed, absolute, and relative.

Javascript

JavaScript was initially created to “make web pages alive”.

The programs in this language are called scripts. They can be written right in a web page’s HTML and run automatically as the page loads.

Scripts are provided and executed as plain text. They don’t need special preparation or compilation to run.

JavaScript is the world's most popular programming language.

JavaScript is the programming language of the Web.

JavaScript is easy to learn.

Today, JavaScript can execute not only in the browser, but also on the server, or actually on any device that has a special program called the JavaScript engine.

The browser has an embedded engine sometimes called a “JavaScript virtual machine”.

Different engines have different “codenames”. For example:

•V8 – in Chrome, Opera and Edge.

•SpiderMonkey – in Firefox.

•There are other codenames like “Chakra” for IE, “JavaScriptCore”, “Nitro” and “SquirrelFish” for Safari, etc.

Modern JavaScript is a “safe” programming language. It does not provide lowlevel access to memory or CPU, because it was initially created for browsers which do not require it.

JavaScript’s capabilities greatly depend on the environment it’s running in. For instance, Node.js supports functions that allow JavaScript to read/write arbitrary files, perform network requests, etc.

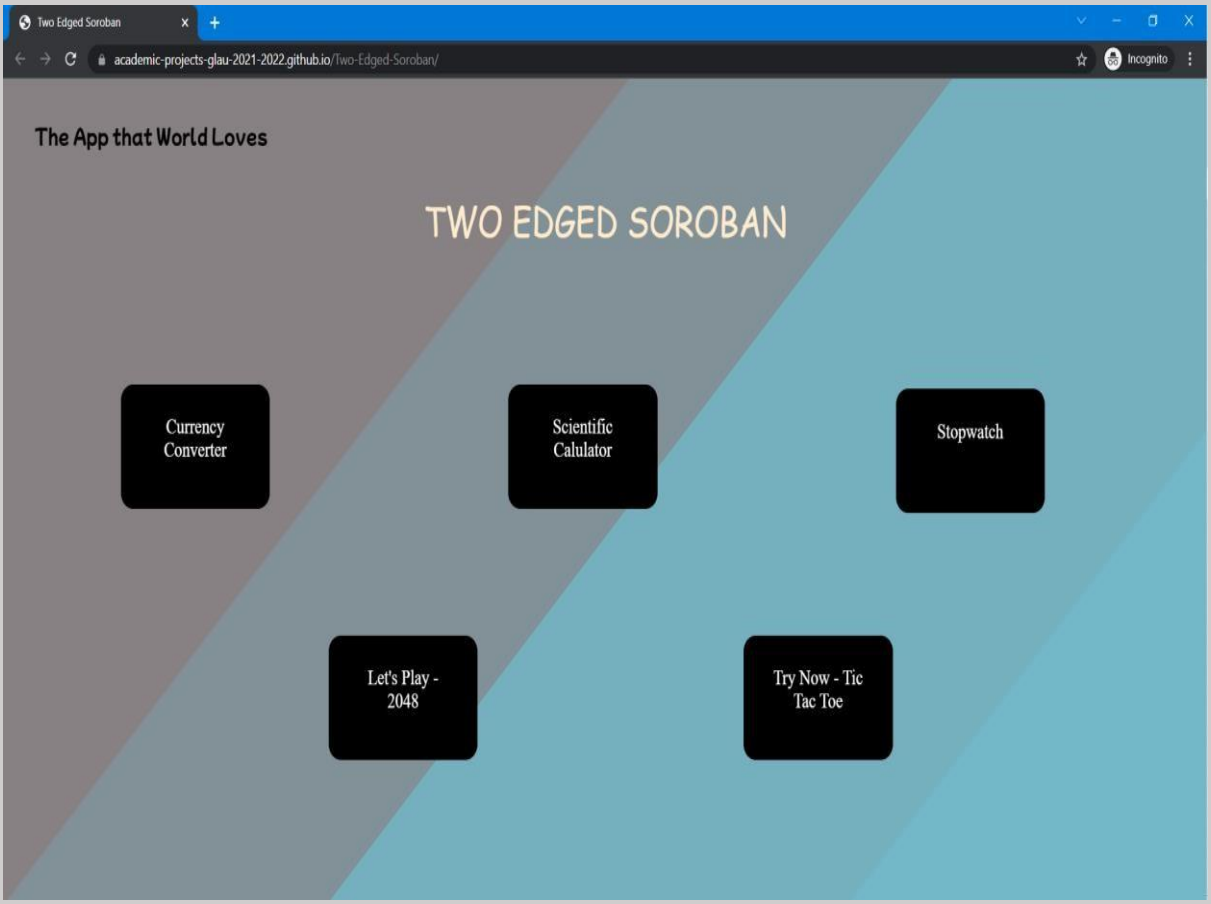
In-browser JavaScript can do everything related to webpage manipulation, interaction with the user, and the webserver.

For instance, in-browser JavaScript is able to:

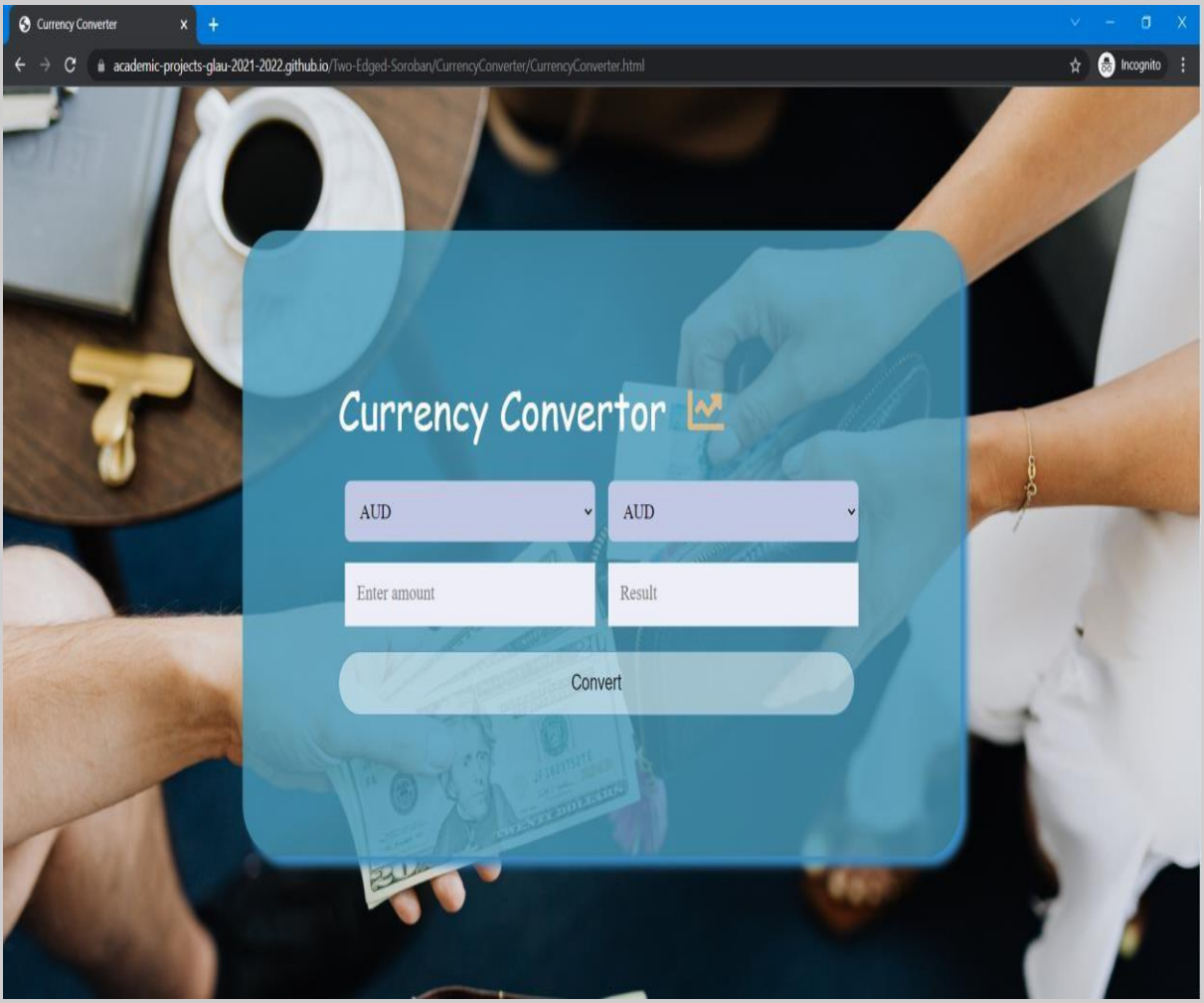
- Add new HTML to the page, change the existing content, modify styles.
- React to user actions, run on mouse clicks, pointer movements, key presses.
- Send requests over the network to remote servers, download and upload files (so-called AJAX and COMET technologies).
- Get and set cookies, ask questions to the visitor, show messages.
- Remember the data on the client-side (“local storage”).

List of Figures

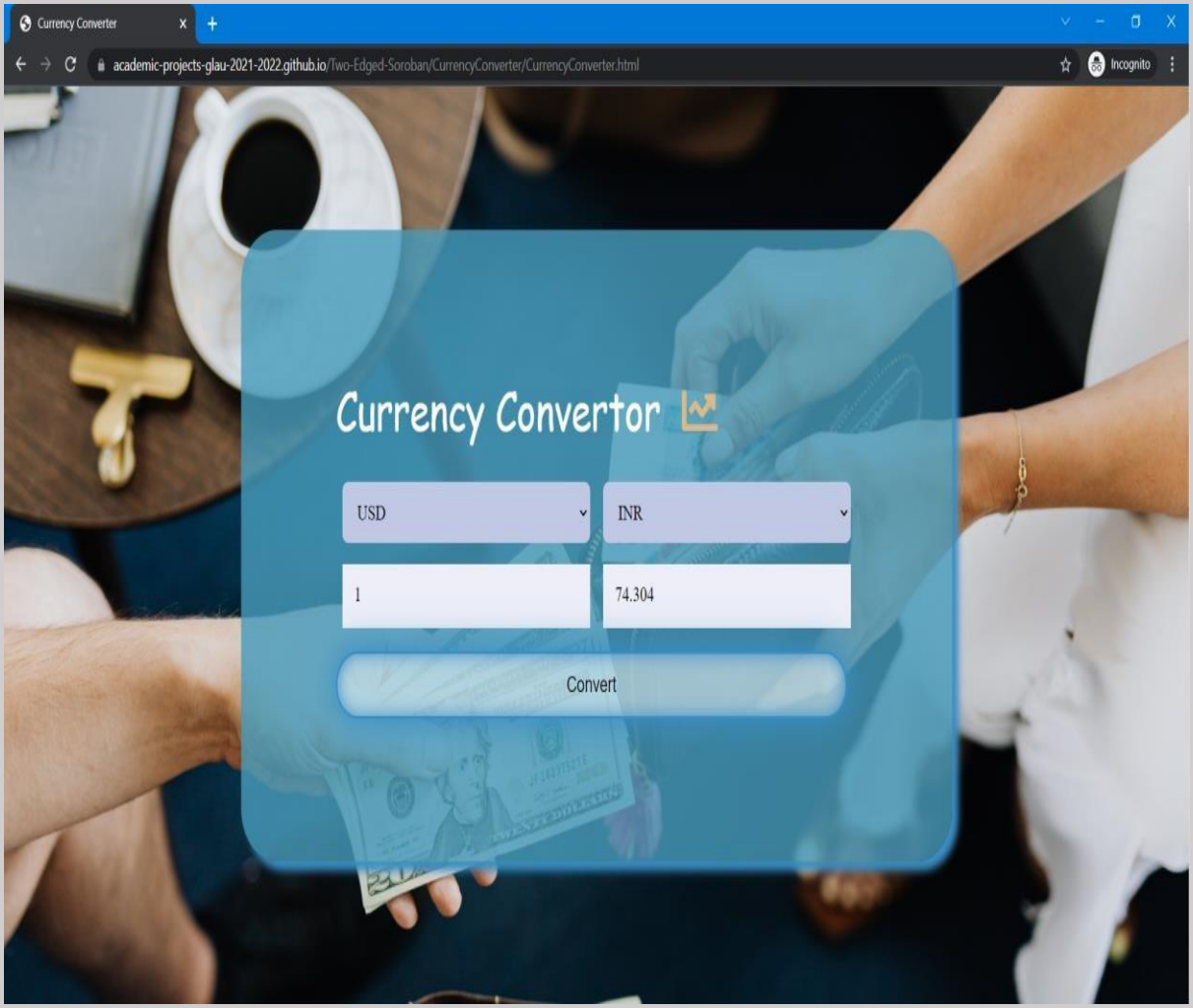
1. Landing Page



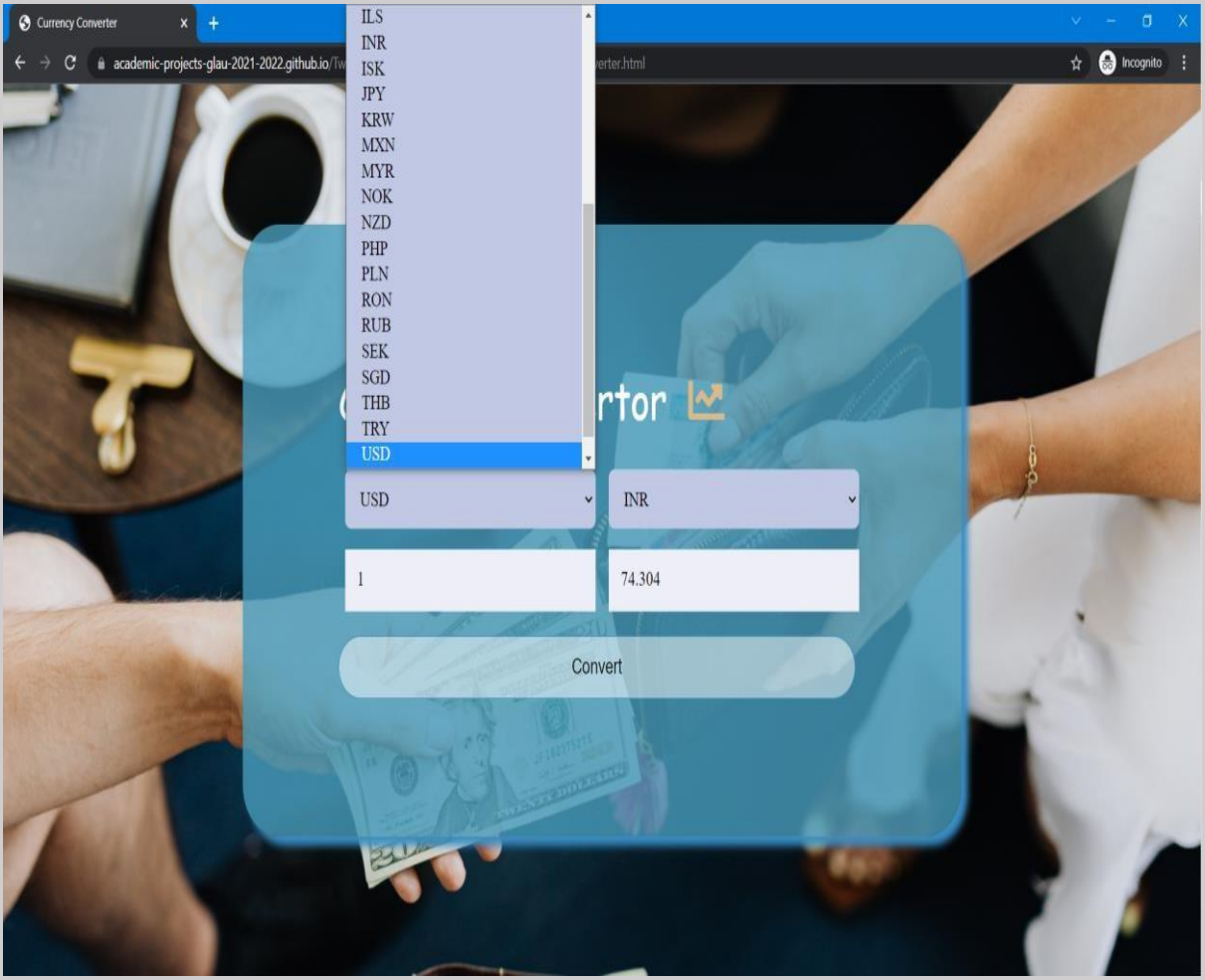
2. Currency Convertor



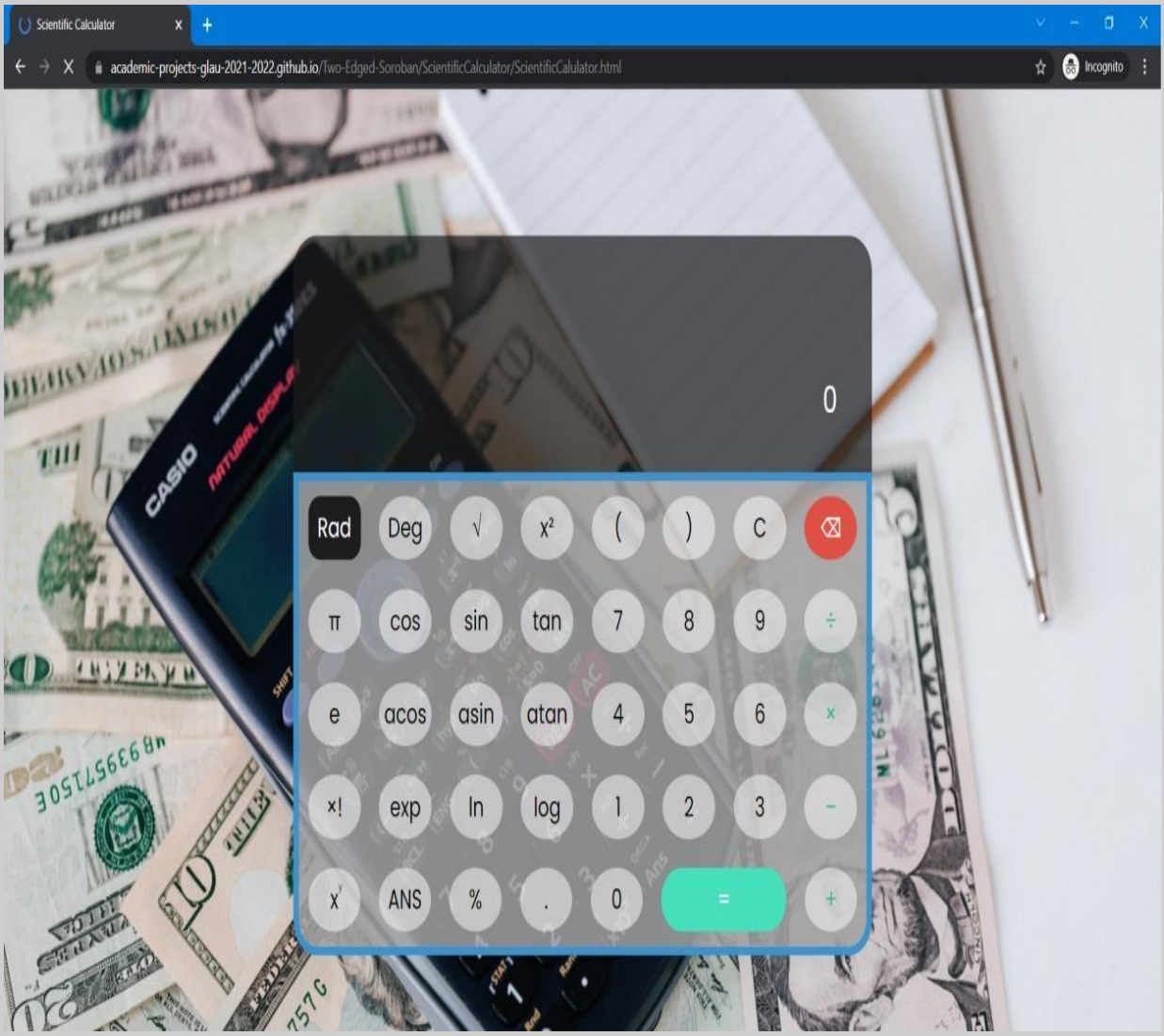
3. Currency Convertor



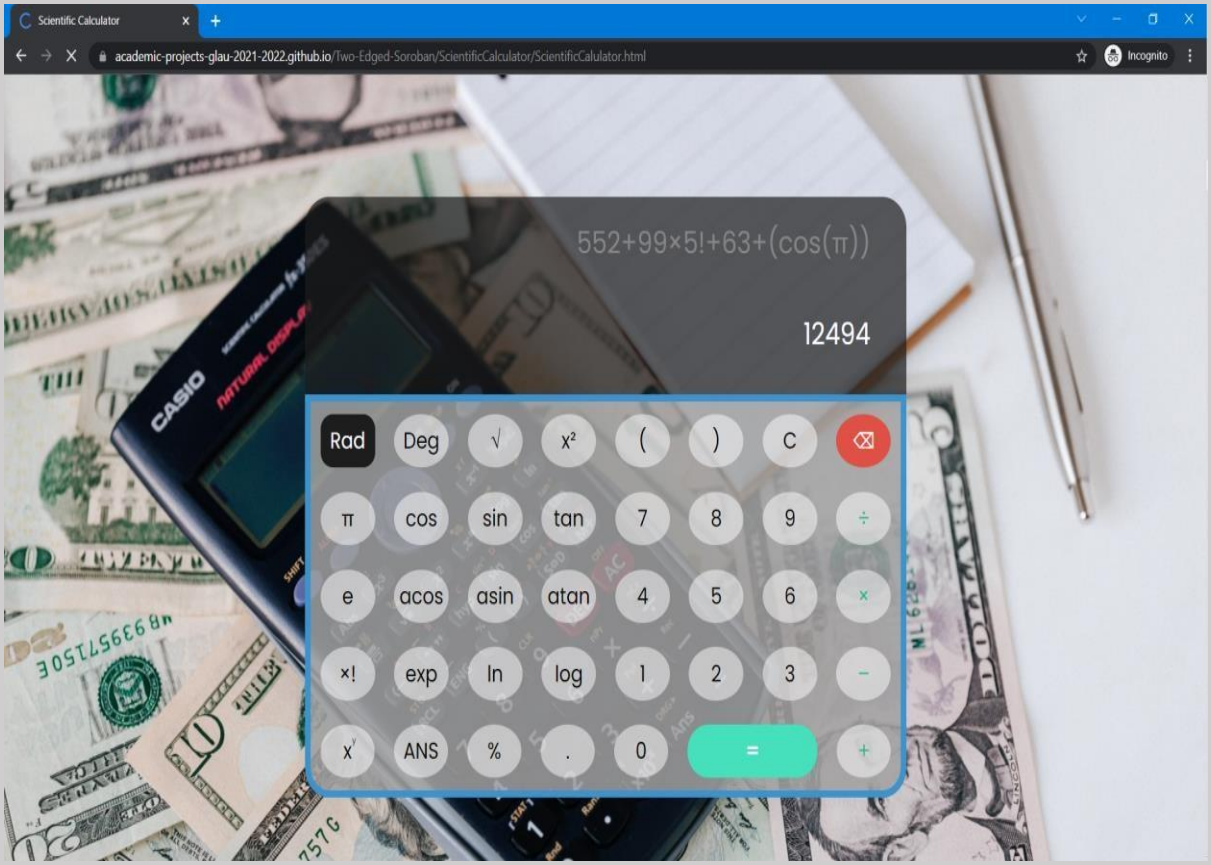
4. Currency Convertor



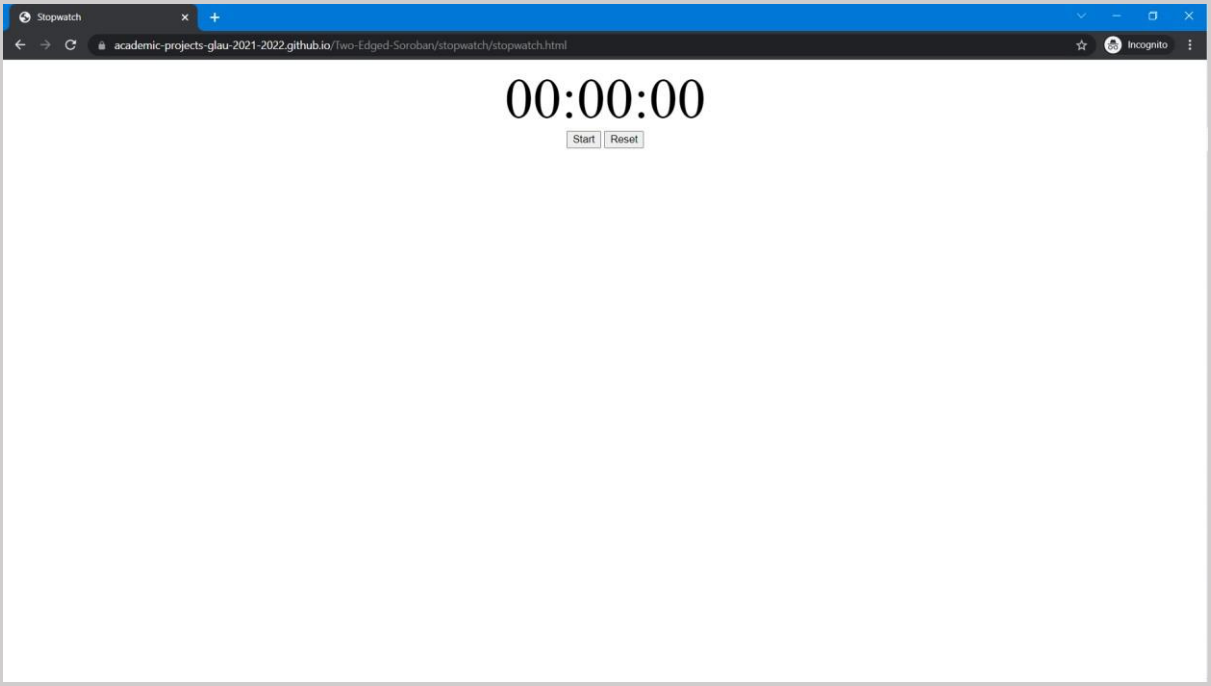
5. Scientific Calculator

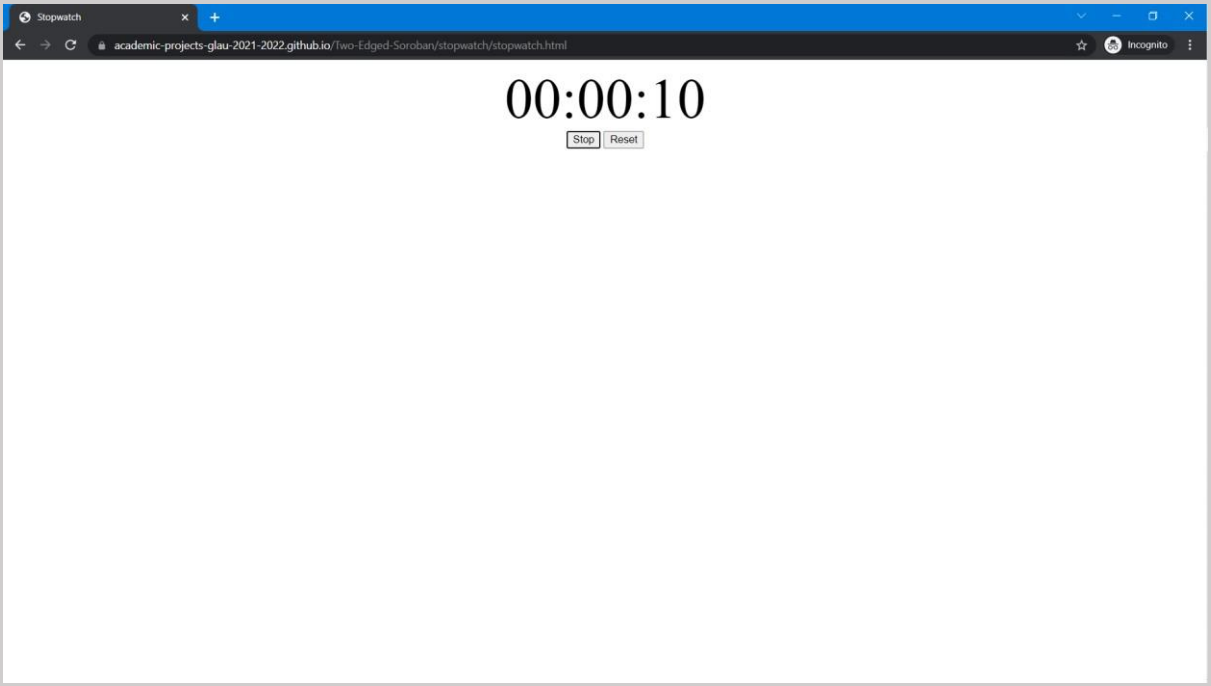


6. Scientific Calculator



7. Stopwatch


Stopwatch
academic-projects-glau-2021-2022.github.io/Two-Edged-Soroban/stopwatch/stopwatch.html
Incognito
00:00:00
Start
Reset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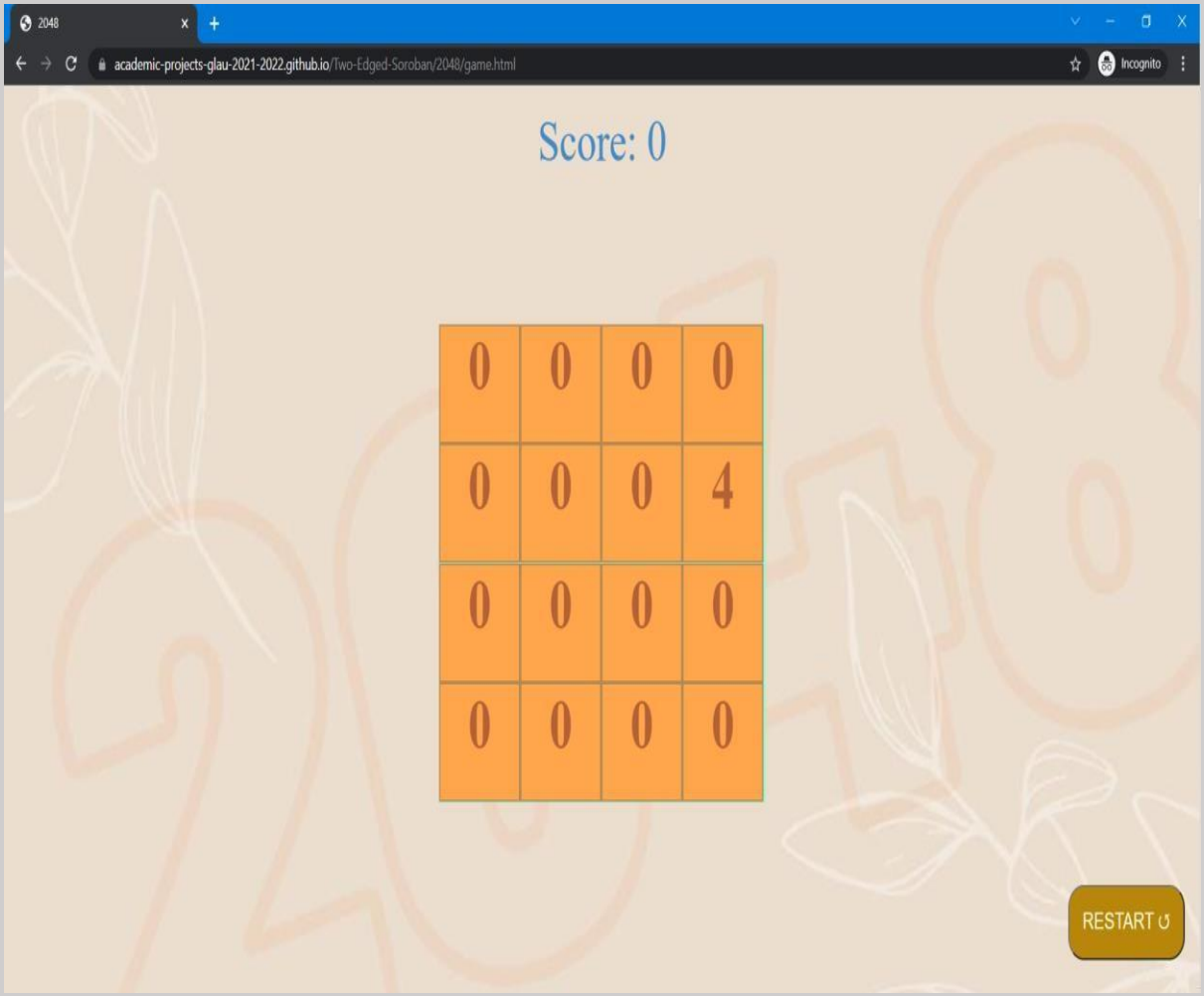
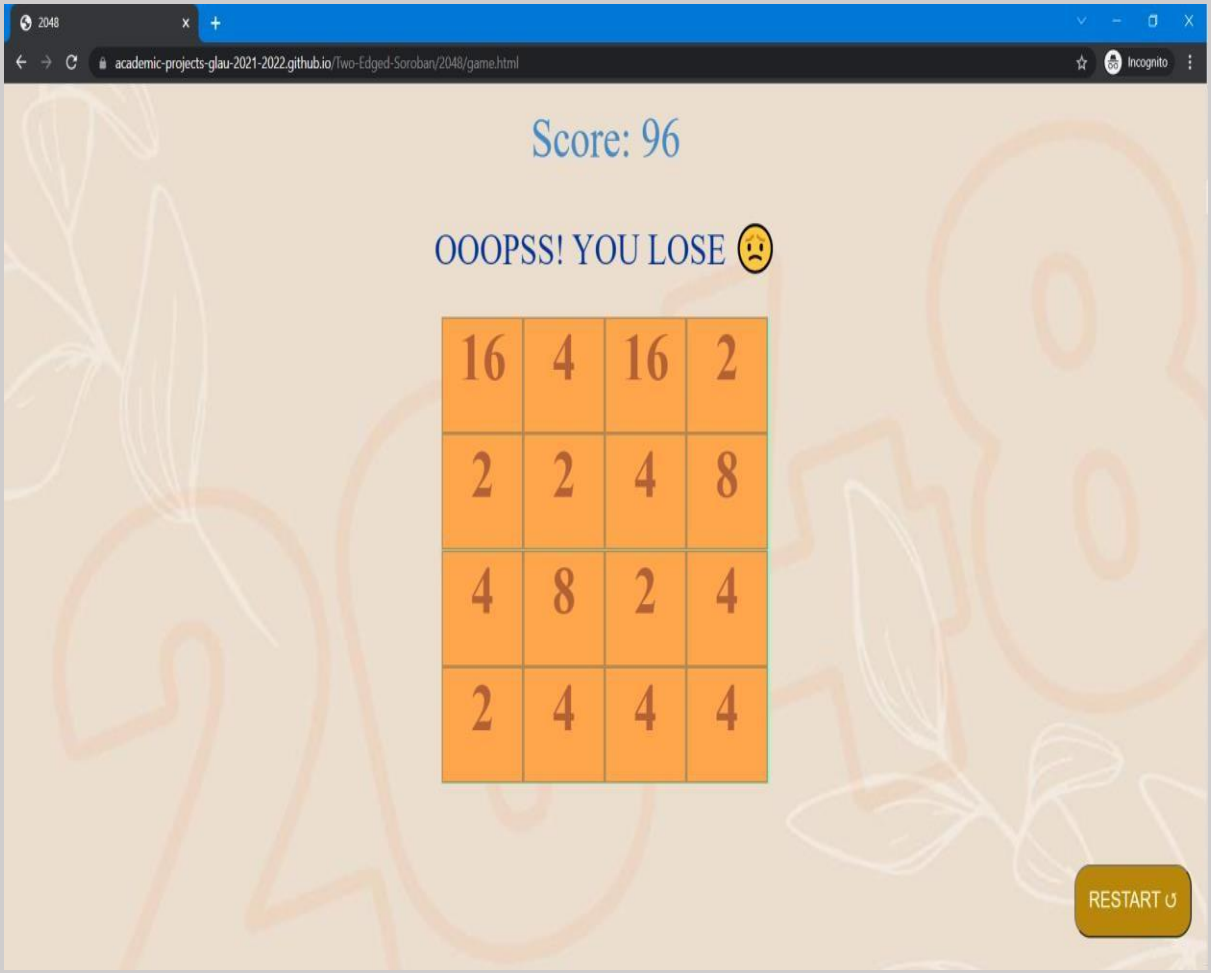
Incognito
00:00:10
Stop
Reset

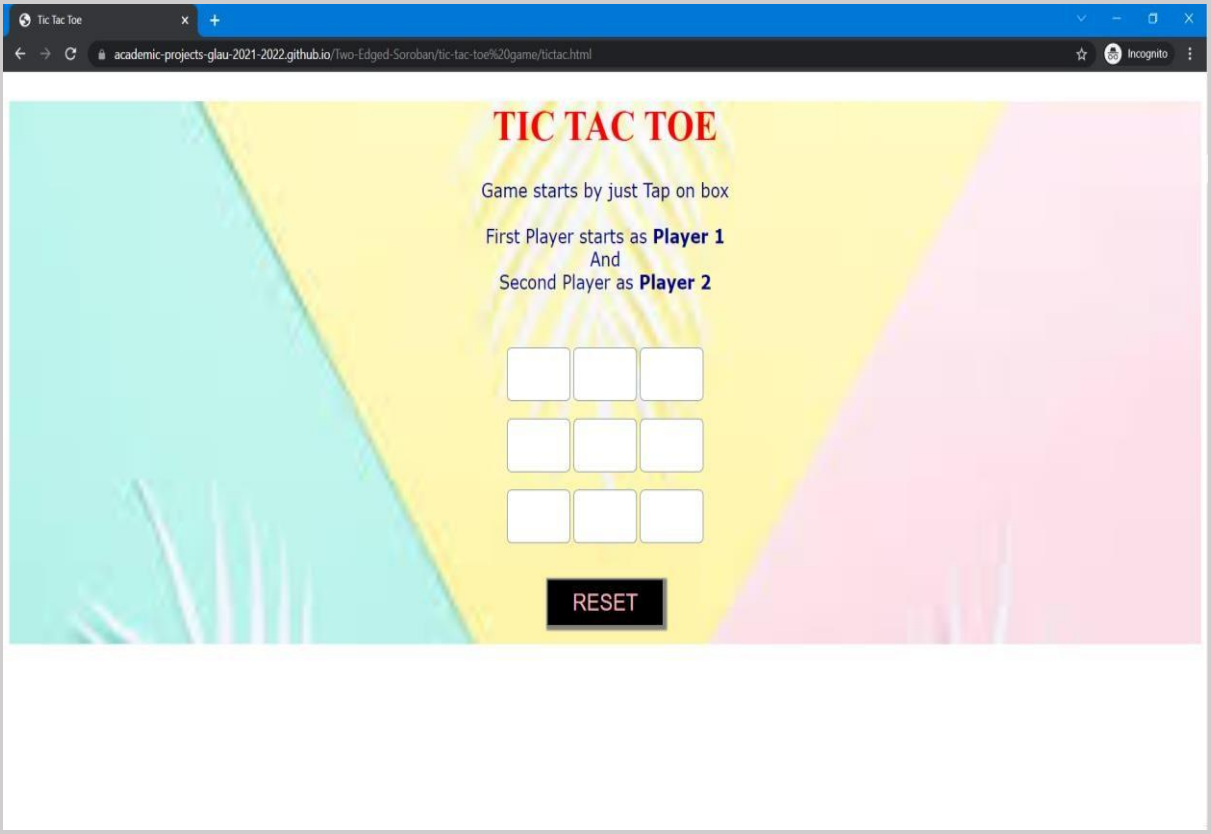
8. 2048 game


2048
academic-projects-glau-2021-2022.github.io/Two-Edged-Soroban/2048/game.html
Incognito
Score: 0
0 0 0 0
0 0 0 4
0 0 0 0
0 0 0 0
RESTART

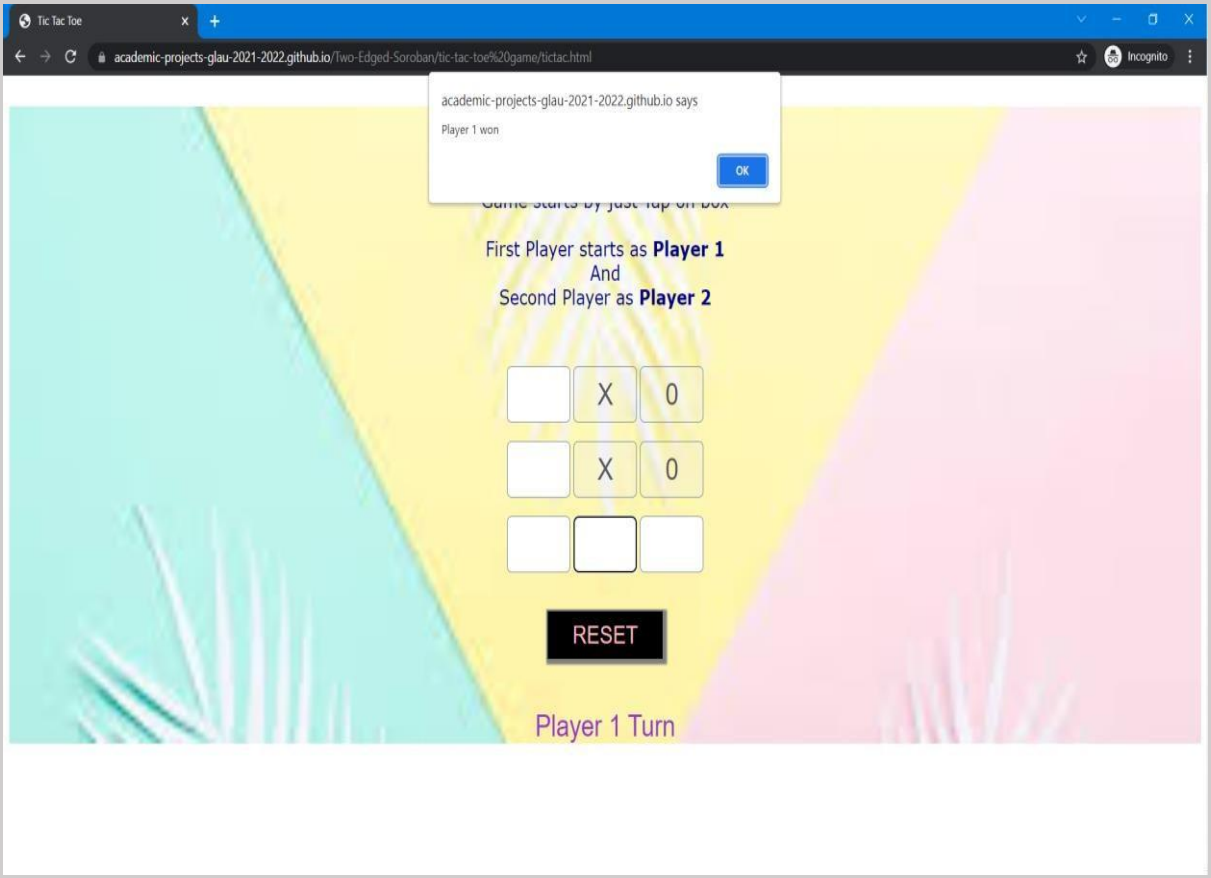
9. *2048 game*


2048
academic-projects-glau-2021-2022.github.io/Two-Edged-Soroban/2048/game.html
Incognito
Score: 96
OOOPSS! YOU LOSE
16 4 16 2
2 2 4 8
4 8 2 4
2 4 4 4
RESTART

10. *Tic -tac-toe*



11. Tic -tac-toe



CONCLUSION

Entertainment and brain exercising games goes hand-in-hand, with calculators, convertors and skilful games. Our system as a whole will prove to be helpful for people who prefer games as a source of improving their thinking skills and concentration levels. Calculations and conversions will be easy with our tools for the people who daily work with numbers and their applications. At the same time our system will help in two way to the people for enhancing their ability to work independently and cooperatively.

Project Repository :-

https://github.com/Academic-Projects-GLAU-2021-2022/Two-EdgedSoroban

BIBLIOGRAPHY

The content for the report has been taken from the following sources.

- www.geeksforgeeks.org
- www.youtube.com
- www.tutorialspoint.com
- www.beta-labs.in
- www.w3schools.com