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(Deemed to be University)

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By
Richa Sharma
REG. NO. 39120095



DEPARTMENT OF INFORMATION TECHNOLOGY
SCHOOL OF COMPUTING
SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY
JEPPIAAR NAGAR, RAJIV GANDHI SALAI,
CHENNAI – 600119, TAMIL NADU

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SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY

(DEEMED TO BE UNIVERSITY)

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JEPPIAAR NAGAR, RAJIV GANDHI SALAI

CHENNAI- 600119

www.sathyabama.ac.in

DEPARTMENT OF INFORMATION TECHNOLOGY

BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bona-fide work of **Richa Sharma (Reg. No: 39120095)** who carried out the project entitled "**Word with Friends**" under my supervision from Dec 2022 to May 2022

Internal Guide

Dr. Jeberson Retna Raj, M.E., Ph.D.,

Head of the Department

Dr. R.SUBHASHINI, M.E., Ph.D.,

Submitted for Viva voce Examination held on

Internal Examiner

External Examiner

DECLARATION

I, **Richa Sharma** hereby declare that the project report entitled **Word with Friends** done by me under the guidance of **Mr. Jeberson Retna Raj, M.E., Ph.D.**, submitted in partial fulfillment of the requirements for the award of Bachelor of Engineering Degree in Information Technology.

DATE:

Richa Sharma

PLACE:

SIGNATURE OF THE CANDIDATE

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TRAINING CERTIFICATE

ABSTRACT

In this project, we developed a Web-based Two Player Game that is very much like Antakshari. Antakshari is a popular parlor game played in India.

For those who don't know about Antakshari it is a game where one team starts with a song and the opposite team has to sing a song with the ending letter of the previous song. A team loses a point if they are not able to sing from that word.

Many word games are similar to antakshari. One such game is Wordakshari or Word with Friends. The game can be played by two people. The first player has to recite a word. The last letter of the word is then used by the next player to recite another word starting with that letter. The winner or winning team is decided by a process of elimination. The person or the team that cannot come up with a word with the right consonant is eliminated.

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CHAPTER 1

INTRODUCTION

Word games are generally spoken or board games often designed to test ability with language or to explore its properties. Word games are generally engaged as a source of entertainment, but have been found to serve an educational purpose as well. For instance, young children can find enjoyment playing modestly competitive games such as Word with Friends, while naturally developing important language skills like spelling. Solving crossword puzzles, which requires familiarity with a larger vocabulary, is a pastime that mature adults have long credited with keeping their minds sharp. There are popular televised word games with valuable monetary prizes for the winning contestants. Many word games enjoy international popularity across a multitude of languages, whilst some are unique to English-speakers. So here in our game, we used the concept of ANTAKSHARI, so we called it WORDAKSHARI, which we are playing with WORDS in place of SONGS.

Thus, these games can help to improve language skills not only by teaching new vocabulary but also by improving the players' spelling skills overall.

Wordakshari can serve as a training ground to practice one's concentration skills. The more they play, the more players are able to ignore external distractions and control any sense of restlessness.

It is not solely about constructing words with the given letters on the rack, an activity that is already demanding for the brain.

The following rules need to be followed while playing this game:

- i. All other words have to begin with the last letter of the previous word
- ii. No words can be repeated.
- iii. Each player will get 30 seconds to come up with a word.
- iv. Words should be meaningful/ present in dictionary.

CHAPTER – 2

AIM AND SCOPE OF PRESENT INVESTIGATION

2.1 AIM

Word games are generally used as a source of entertainment, but can additionally serve an educational purpose. Young children can enjoy playing games such as Hangman, while naturally developing important language skills like spelling. Researchers have found that adults who regularly solved crossword puzzles, which require familiarity with a larger vocabulary, had better brain function later in life.

2.2 SCOPE

Even without taking into account how much fun and entertaining they are, the benefits of playing word games are quite notable. Yes, they are an amusing hobby and a great way to pass time, but they are also educational and a tool for self-improvement.

One of the main benefits of playing word games is the fact that exposes players to new vocabulary that they might, otherwise, never get to know. This learning is helpful to increase one's game performance with time, but there are more important and practical advantages to it.

The richer one's vocabulary is, the easier it becomes to organize and express thoughts and opinions as well as interpreting and understanding what others are saying and the world in general. These type of games can help improve one's vocabulary through different learning processes. Notably, learning can be active or passive in these games.

Words with Friends, for instance, are examples of games that prompt an active learning process as the players need to study and enrich their vocabulary on their own time to succeed at these challenges. Through an online Scrabble Word Finder or a Word Unscramble tool, they can input several combinations of letters to find less-known words that can be made with them, and then learn them by heart.

Other games such as Crosswords or Word Search trigger a passive learning process. The players do not actively seek to learn a new word, but rather slowly take in those used in these games. Either by learning them through clues (Crosswords) or semantic groups (Word Search), new terms become engraved in the players' minds and enrich their vocabulary.

2.3 ACCESSIBILITY

As technology enables us to move towards creating more interactive and user friendly web application, we risk widening the gap between the users who really needed access to sites like music store and those artist who have talents but unable to showcase their talents due to lack of platform.

Accessibility in Word Game doesn't mean just providing a Word or PDF version of a course. We can do so much more to create innovative e-learning material with accessibility at the heart of it and one format of content that will cater to all requirements.

Innovation and accessibility are not mutually exclusive. We can make this music store more enjoyable for everyone - regardless of whether or not they have time to be on big queue.

Creating accessible Word game relies on three key things: Universal Design, Universal Access and management buy-in.

2.4 ADVANTAGES

1. Increases vocabulary
2. There is a learning process suitable for everyone

3. Improves spelling
4. Helps train concentration skills
5. Enhances cognitive skills
6. Improves memory
7. It promotes a self-improving competition
8. It can make you happy
9. It's relaxing
10. It's a social bonding experience

2.5 FEASIBILITY STUDY

All projects are feasible when given unlimited resources and infinite time. It's both necessary and prudent to evaluate the feasibility of a project at the earliest possible time. The efforts and resources spent in developing the system will be a waste if the end solution does not offer timely and satisfactory solution to its users.

Feasibility study is a test of system proposed regarding workability, impact on the organization ability to meet user needs, and effective use of resources. Thus when a new application is proposed, it normally goes through a feasibility study before it is approved for development.

Feasibility and risk analysis are related in many ways. If project risk is great, the possibility of producing quality software is reduced.

2.6 DRAWBACKS

If you are looking for quick and easy entertainment, you will not find it in a Wordakshari. Some Wordgames are hard work and take time to complete. For some people, a puzzle that requires so much time and attention is simply not ideal, and therefore, these games simply do not feature on their "to do" list.

Few more drawbacks are:

1. Word Thinking takes time.
2. Being addicted to Wordakshri can take you away from work/studies.
3. Being engrossed in Wordakshari can appear anti-social.
4. It can become too easy to solve.
5. Wordakshari can be tiring if you do not like to think.

CHAPTER 3

EXPERIMENTAL OR MATERIALS AND METHODS

3.1 SOFTWARE REQUIREMENT

- ❖ Windows 10 OS or Above
- ❖ VScode
- ❖ Python
- ❖ Heroku CLI
- ❖ Django framework
- ❖ Redis
- ❖ Channels
- ❖ Pyenchant
- ❖ Whitenoise
- ❖ Gunicorn
- ❖ Sqlite 3 db

3.1.1 Windows 10 or above

Windows 10 is a Microsoft operating system for personal computers, tablets, embedded devices and internet of things devices.

Microsoft released Windows 10 in July 2015 as a follow-up to Windows 8. The company has said it will update Windows 10 in perpetuity rather than release a new, full-fledged operating system as a successor.

3.1.2 VScode

Visual Studio Code, also commonly referred to as VS Code, is a source-code editor made by Microsoft for Windows, Linux and macOS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git. Users can change the theme, keyboard shortcuts, preferences, and install extensions that add additional functionality.

In the Stack Overflow 2021 Developer Survey, Visual Studio Code was ranked the most popular developer environment tool, with 70% of 82,000 respondents reporting that they use it.

3.1.3 Python

Python is a high-level, general-purpose programming language. Its design philosophy emphasizes code readability with the use of significant indentation. Its language constructs and object-oriented approach aim to help programmers write clear, logical code for small- and large-scale projects.

Python is dynamically typed and garbage collected. It supports multiple programming paradigms, including structured, object-oriented and functional programming. It is often described as a "batteries included" language due to its comprehensive standard library.

3.1.4 Heroku CLI

Heroku is a cloud platform as a service (PaaS) supporting several programming languages. One of the first cloud platforms, Heroku has been in development since June 2007, when it supported only the Ruby programming language, but now supports Java, Node.js, Scala, Clojure, Python, PHP, and Go. For this reason, Heroku is said to be a polyglot platform as it has features for a developer to build, run and scale applications in a similar manner across most languages. Heroku was acquired by Salesforce in 2010 for \$212 million.

3.1.5 Django framework

Django is a Python-based free and open-source web framework that follows the model–template–views (MTV) architectural pattern. It is maintained by the Django Software Foundation (DSF), an independent organization established in the US as a non-profit.

Django's primary goal is to ease the creation of complex, database-driven websites. The framework emphasizes reusability and "pluggability" of components, less code, low coupling, rapid development, and the principle of don't repeat yourself.

3.1.6 Redis

Redis is an in-memory data structure store, used as a distributed, in-memory key–value database, cache and message broker, with optional durability. Redis supports different kinds of abstract data structures, such as strings, lists, maps, sets, sorted sets, HyperLogLogs, bitmaps, streams, and spatial indices. The project was developed and maintained by Salvatore Sanfilippo. From 2015 until 2020, he led a project core team sponsored by Redis Labs. Salvatore Sanfilippo left Redis as the maintainer in 2020. It is open-source software released under a BSD 3-clause license. In 2021, not long after the original author and main maintainer left, Redis Labs dropped the Labs from its name and now redis, the open source DB as well as Redis Labs, the commercial company, are referred to as "redis".

3.1.7 Channels

Channels is a project that takes Django and extends its abilities beyond HTTP - to handle WebSockets, chat protocols, IoT protocols, and more. It's built on a Python specification called ASGI.

Channels builds upon the native ASGI support available in Django since v3.0, and provides an implementation itself for Django v2.2.

3.1.8 Pyenchant

PyEnchant is a free software project developed as part of the AbiWord word processor with the aim of unifying access to the various existing spell-checker software. Enchant wraps a common set of functionality present in a variety of existing products/libraries, and exposes a stable API/ABI for doing so. Where a library doesn't implement some specific functionality, Enchant will emulate it.

3.1.9 White Noise

In signal processing, white noise is a random signal having equal intensity at different frequencies, giving it a constant power spectral density. The term is used, with this or similar meanings, in many scientific and technical disciplines, including physics, acoustical engineering, telecommunications, and statistical forecasting. White noise refers to a statistical model for signals and signal sources, rather than to any specific signal. White noise draws its name from white light, although light that appears white generally does not have a flat power spectral density over the visible band.

3.1.10 Gunicorn

The Gunicorn "Green Unicorn" is a Python Web Server Gateway Interface (WSGI) HTTP server. It is a pre-fork worker model, ported from Ruby's Unicorn project. The Gunicorn server is broadly compatible with a number of web frameworks, simply implemented, light on server resources and fairly fast. It is often paired with NGINX, as the two have complementary features.

3.1.11 Sqlite 3 db

SQLite is a database engine written in the C language. It is not a standalone app; rather, it is a library that software developers embed in their apps. As such, it belongs to the family of embedded databases. It is the most widely deployed database engine, as it is used by several of the top web browsers, operating systems, mobile phones, and other embedded systems.

3.2 Language

- ❖ Python
- ❖ HTML
- ❖ CSS
- ❖ Javascript

3.2.1 Python

Python is a high-level, general-purpose programming language. Its design philosophy emphasizes code readability with the use of significant indentation. Its language constructs and object-oriented approach aim to help programmers write clear, logical code for small- and large-scale projects.

Python is dynamically typed and garbage collected. It supports multiple programming paradigms, including structured, object-oriented and functional programming. It is often described as a "batteries included" language due to its comprehensive standard library.

3.2.2 HTML

The HyperText Markup Language or HTML is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets and scripting languages such as JavaScript.

Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

3.2.3 CSS

CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts. This separation can improve content accessibility; provide more flexibility and control in the specification of presentation characteristics; enable multiple web pages to share formatting by specifying the relevant CSS in a separate .css file, which reduces complexity and repetition in the structural content; and enable the .css file to be cached to improve the page load speed between the pages that share the file and its formatting.

3.2.4 Javascript

JavaScript often abbreviated JS, is a programming language that is one of the core technologies of the World Wide Web, alongside HTML and CSS. Over 97% of websites use JavaScript on the client side for web page behavior, often incorporating third-party libraries. All major web browsers have a dedicated JavaScript engine to execute the code on users' devices.

3.3 HARDWARE REQUIREMENT

- Hard Disk
- RAM – 1 GB
- Processor – Dual Core or Above

3.3.1 Hard Disk

A hard disk or fixed disk, is an electro-mechanical data storage device that uses magnetic storage to store and retrieve digital information using one or more rigid rapidly rotating disks (platters) coated with magnetic material.

During the mid-1990s the typical hard disk drive for a PC had a capacity of about 1 gigabyte. As of January 2019, desktop hard disk drives typically had a capacity of 1 to 6 terabytes, with the largest-capacity drives reaching 15 terabytes

3.3.2 RAM

Random access memory (RAM) is a type of data storage used in computers that is generally located on the motherboard. This type of memory is volatile and all information that was stored in RAM is lost when the computer is turned off.

The RAM chip may be individually mounted on the motherboard or in sets of several chips on a small board connected to the motherboard. Older memory types were in the form of chips called dual in-line package (DIP). Although DIP chips are still used

today, the majority of memory is in the form of a module, a narrow printed circuit board attached to a connector on the motherboard. The three main memory circuit boards types containing chips are: RIMMs (Rambus in-line memory modules), DIMMs (dual in-line memory modules) and SIMMs (single in-line memory modules). Most motherboards today use DIMMs. Sometimes, people get confused about the difference between memory and storage, in part because both can be measured in megabytes (MB), gigabytes (GB) and terabytes (TB).

By contrast, storage is slower, but it can retain data when the device is powered down. So, for example, if a document has been saved to a hard drive prior to a power outage or system crash, the user will still be able to retrieve it when the system is back up and running.

3.3.3 Processor

A processor is an integrated electronic circuit that performs the calculations that run a computer. A processor performs arithmetical, logical, input/output (I/O) and other basic instructions that are passed from an operating system (OS). Most other processes are dependent on the operations of a processor.

Dual core is a CPU that has two distinct processors that work simultaneously in the same integrated circuit. This type of processor can function as efficiently as a single processor but can perform operations up to twice as quickly.

CHAPTER 4

SOURCE CODE

GitHub link:-https://github.com/Sharmarich/Wordakshari_WordsWithFriends

CHAPTER 5

RESULTS

Screen shots

Home

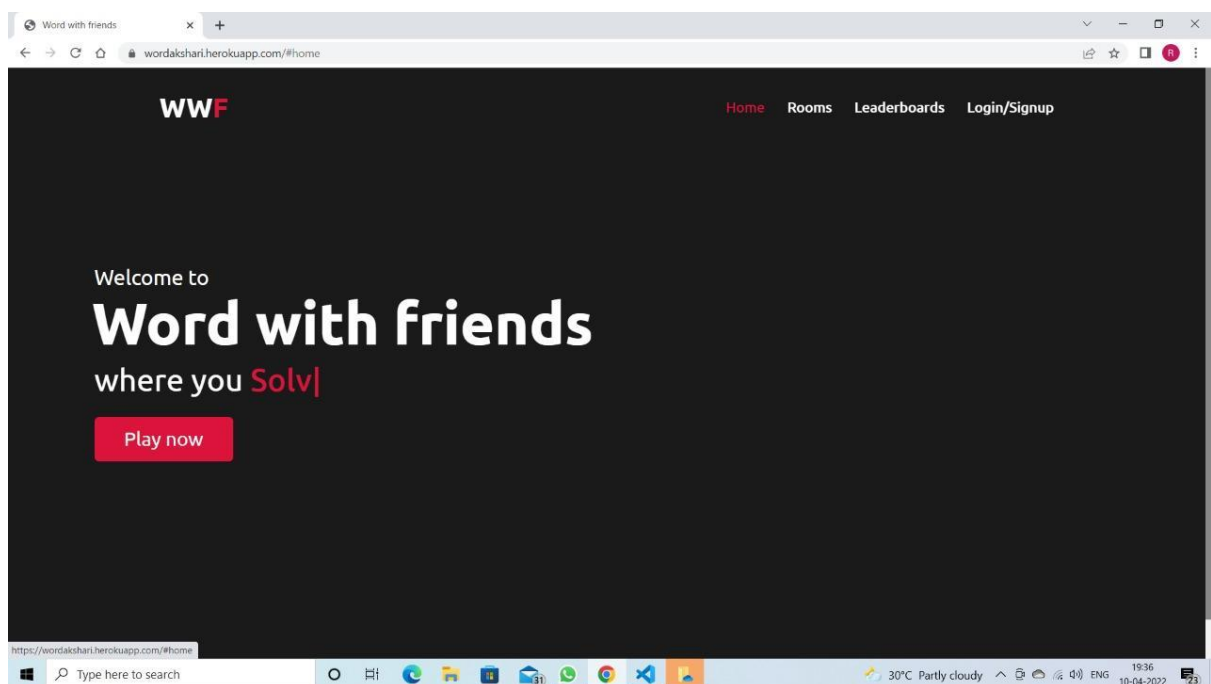


fig.5.1

Login

Word with friends

wordakshari.herokuapp.com/login/

WWF Home

Login

username

password

Login

don't have account? [Sign up](#)

Type here to search

30°C Partly cloudy

19:41 10-04-2022

fig.5.2

Signup

Word with friends

wordakshari.herokuapp.com/signup/

Signup

username

password

password

Signup

Already have an account? [Login](#)

Type here to search

30°C Partly cloudy

19:41 10-04-2022

fig.5.3

Profile

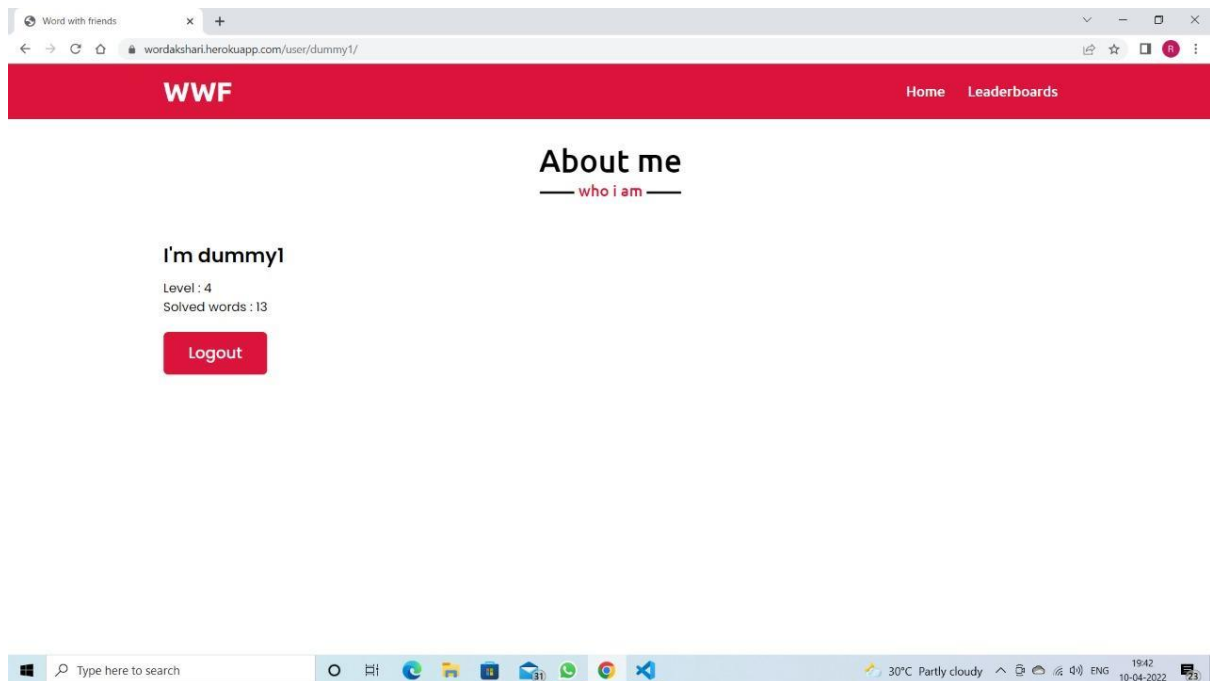


fig.5.4

Join Room

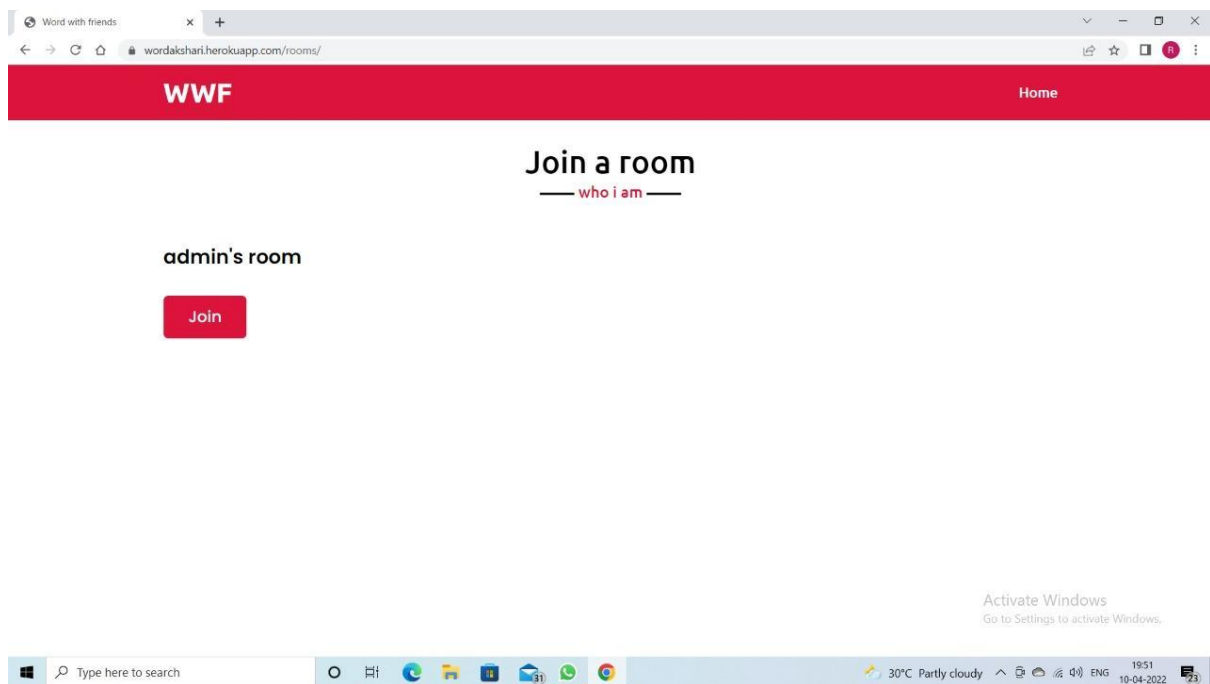


fig.5.5

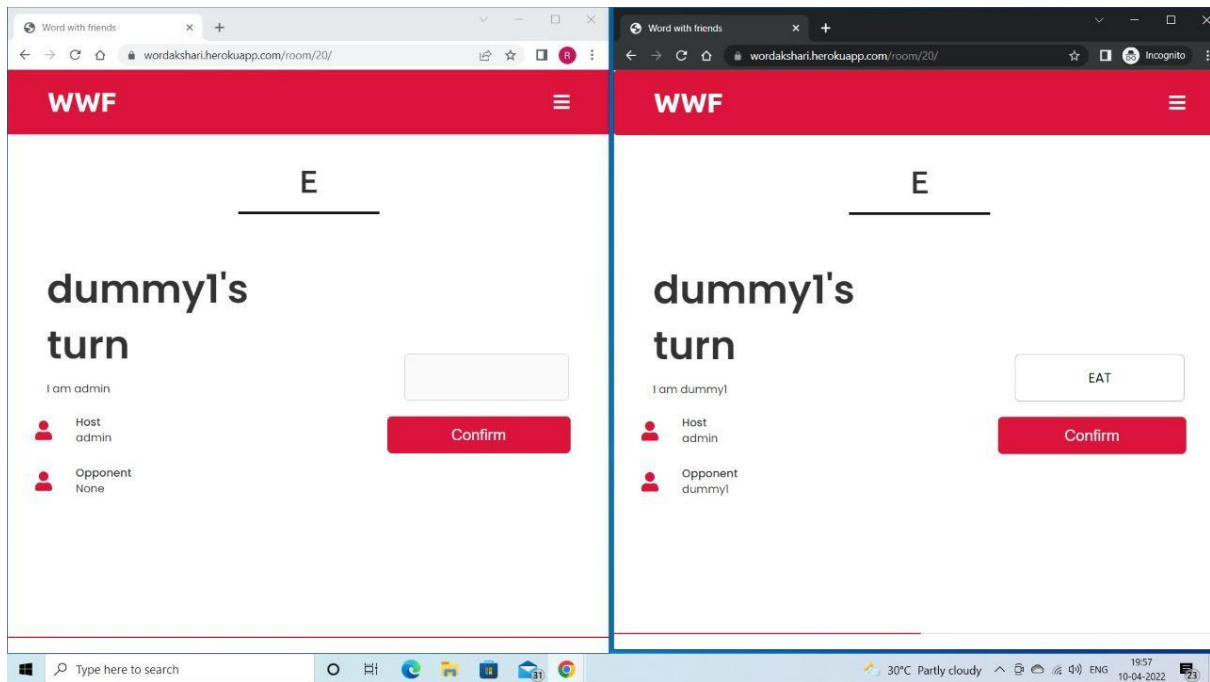


fig.5.6

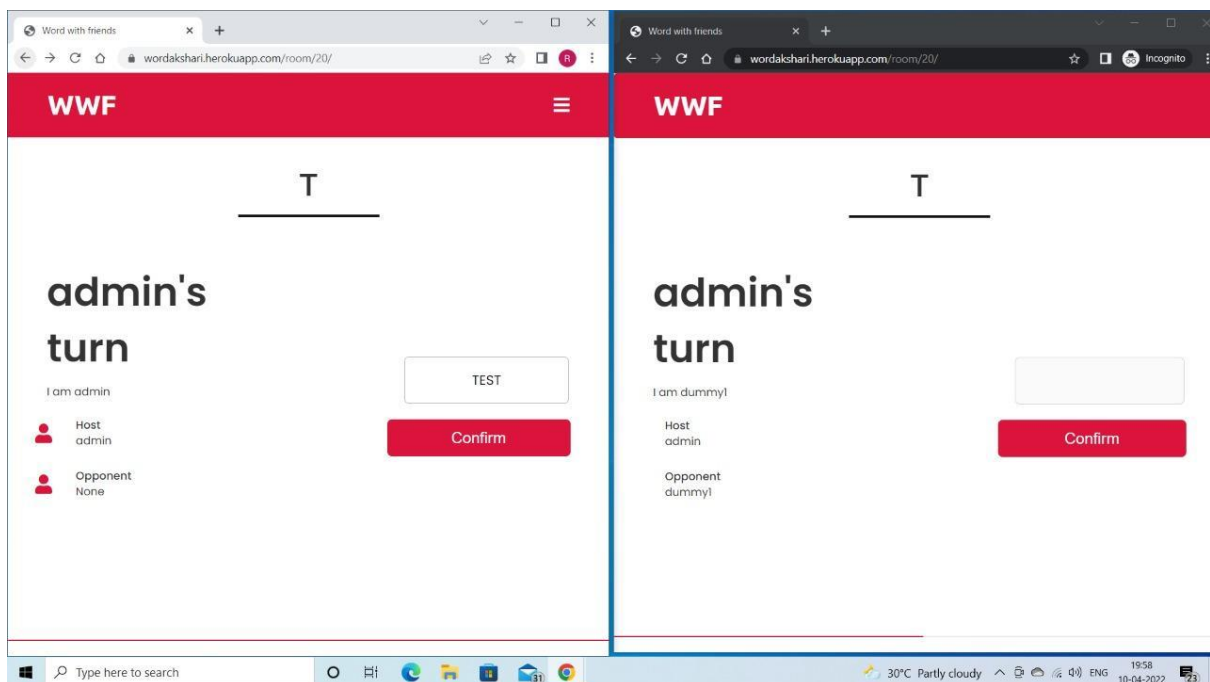


fig.5.7

Leaderboard

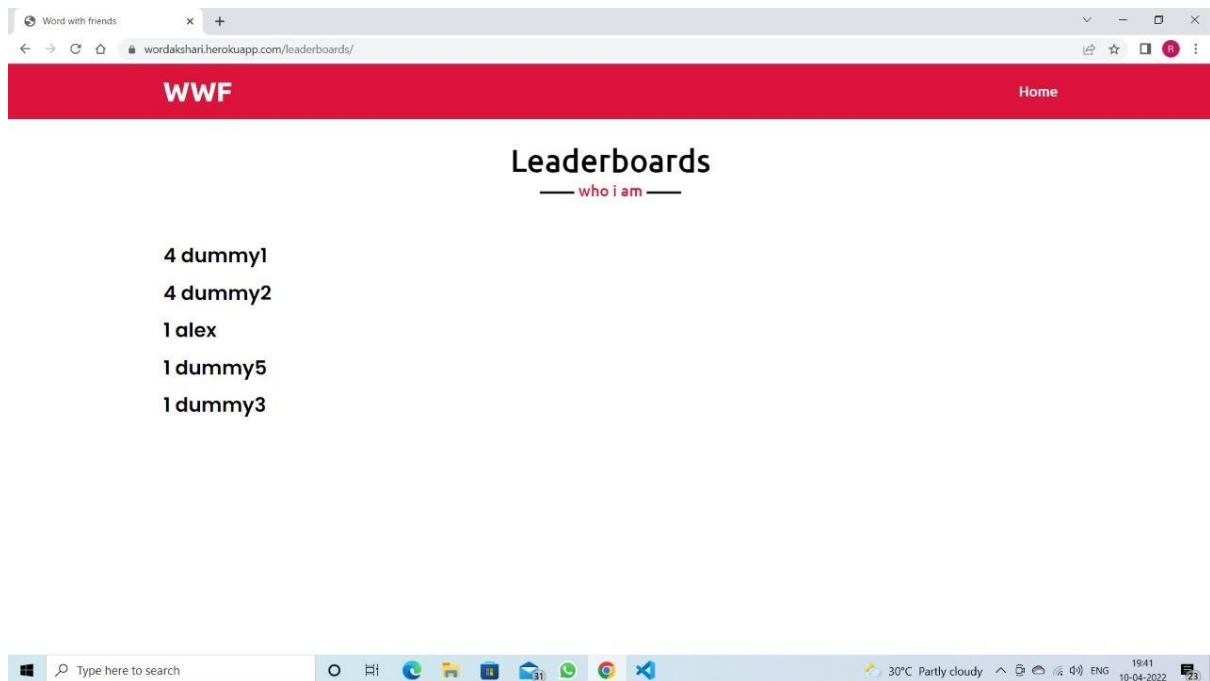


fig.5.7

SUMMARY AND CONCLUSIONS

Word games can be highly competitive and even a bit frustrating when things do not go as desired. However, more than competing against an opponent, players are competing against themselves.

To succeed, they must keep improving their skills and language knowledge. They must train their ability to focus, to react to unpredictable moves or sets of letters, to analyze the board, and they must study to increase their vocabulary as much as possible.

In this sense, word games promote a positive competition. Winning does not depend on luck at all, but rather on the knowledge and skills of each player. Thus, to improve their performance in these games, players must strive to improve themselves first.

The benefits of playing word games can also be perceived in the players' mood and self-esteem. Losing is always frustrating to some degree, but in these games, joy can be present even in defeats.

As they are a competition against oneself, players have many reasons to still collect some happiness out of a loss. They may be pleasantly surprised with how much their knowledge and skills have improved or that they were able to hold their ground against superior opponents.

However, nothing brings happiness as a victory. To win is to prove that one's intellectual capabilities are better than others' which brings a sense of accomplishment and self-appreciation hard to match.

While getting immersed in the letters and words, players can shut off negative thoughts and forget about their problems for an instant. This actively helps to reduce their anxiety and stress levels.

Additionally, because players have to use their cognitive skills to the fullest while playing, rather than being an escape these games can help people organize and calm their mind unconsciously so that when the challenge is over their daily worries do not seem so daunting anymore.

Wordakshari is a good group games. Even amid a competition, the players and the audience can share opinions and points of view and learn new words and meanings by simply talking to each other. They create a relaxed and fun environment that prompts social interaction and bonding with anyone around, even strangers.

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