



Softablitz Problem Statements

B.Tech 1st year

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Basic Instructions

1. A team can consist of at most 3 members.
2. All branches are allowed.
3. Plagiarism in any form will result in direct elimination.
4. Teams can attempt as many problem statements as they can.
5. You may use JavaFX or Java Swing for the given problems.
6. Extra points will be awarded for impressive UI & extra features (other than the one specified).

Few Pieces of Advice

1. Firstly read each and every problem statement and then decide which one suits best with your current skill set. Don't just run after points.
2. Try to build a complete solution to the problem that you are attempting. In this way, you will have a project worth mentioning on your resume.
3. Although UI is a very important part of any desktop application but first try to implement as many features as you can. In case you get time after this, then only spend time on polishing UI.
4. Remember to keep the spirit of Softablitz ablaze by not using libraries to implement features unless specified to do so, any libraries/packages/JARs used which are not mentioned by us will lead to negative points.
5. Last but not the least for any doubt regarding problem statements contact coordinators as we are always here to help.

Sticky Notes

Description :

Have you used sticky notes? So, this is the perfect time to build your own sticky note application using Java.

Note :

This application may require the use of Database Connectivity. You can study this from the following links :-

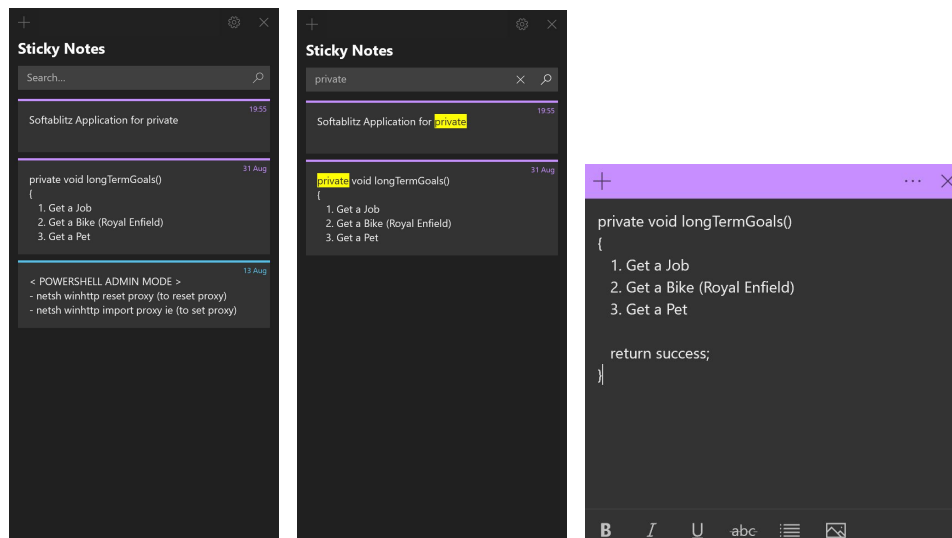
- <https://www.youtube.com/watch?v=nW13FmTdkjc>
- <https://www.w3schools.com/sql/>

Basic Features :

1. Add new note.
2. Allow user to delete existing notes.
3. Show last modified date of every note.

Advanced Features :

1. Show each note separately when the user wants to .
2. Allow user to change the color of the note (background and Font).
3. Show only limited content when showing all notes in a list.
4. Find list of notes with specific word (Search Bar).



Minesweeper X

Description :

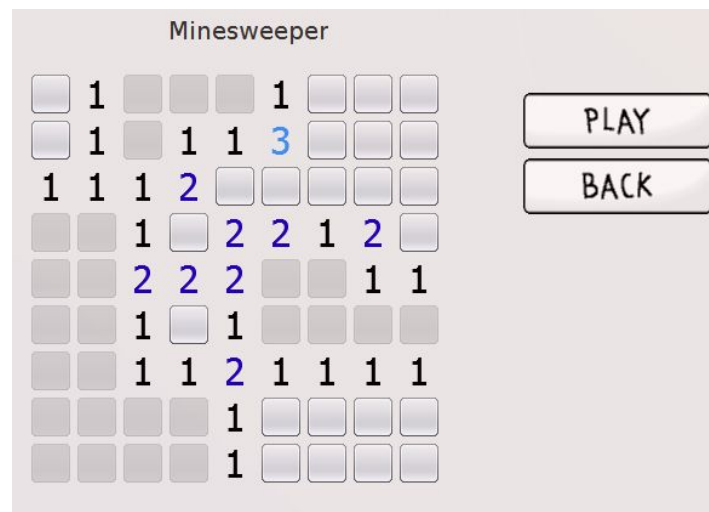
Remember the classical Minesweeper game that came with old Windows PC. It's time to create your own version of the game using Java.

Basic Features :

1. Implement the game with all the rules
2. Basic user profile which will display user basic information like username, all time best, etc.
3. Various difficulty level like Easy, Medium, and Hard
4. Option to create a new profile and switch among all the existing profiles.

Advanced Features :

1. Option to create a custom size grid with set number of bombs
2. Timer to keep track of the time to solve the puzzle
3. Recursively reveal numbers depending on the move (as happens in real game)
4. Facility to mark blocks as bombs



Find the Spirit Digimons

Description :

Takuya Kanbara and his friends are stuck in the digimon world. In order to get back to their world, they need to capture all the legendary digimon and defeat the villain - Laylamon.

All the digimon decided to help them, and created a new rule according to which, Takuya and his friends will be able to capture the digimons, if they find two identical digimon at the same time. **Help them get out of the Digital World!!!**

Demo Link:

<http://www.memozor.com/memory-game-online-free/for-kids/kids-4-years-old-games/online-memory-game-for-kids-pokemon-game>

Basic Features :

1. Implement the basic game as described.
2. Score should be displayed throughout the game.
3. The user is asked to input his/her name which is displayed continuously throughout the game.

Advanced Features :

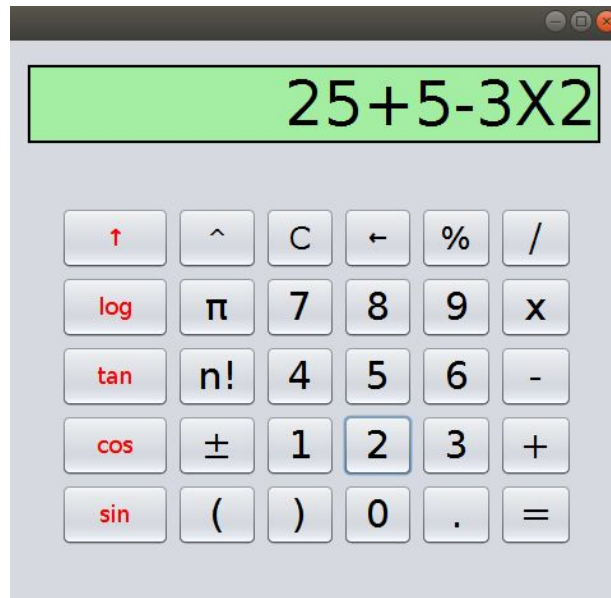
1. Variable Grid size depending upon the difficulty level.
2. A live timer is displayed for each game.
3. Instead of numbers, use pictures (Of Digimons)
4. Addition of sound. (Search it yourself)



Calculator

Description :

Create a desktop Calculator similar to the one that come pre-installed in your system.



Basic Features :

1. Basic mathematical functions like addition, subtraction, division, and multiplication.
2. Other common functions like Square root, Cube root, Power.
3. Handling basic cases like division by zero, handling floating point numbers.
4. Other mathematical functions like Factorial, log, sin, cos, tan and their inverses.

Advanced Features :

1. Handling BODMAS expressions with parentheses (eg. $5+6/3-2*(3+5)$)
2. Conversion of currencies, weights, lengths and more
3. Handling expressions with Pi and negative numbers (eg $-20-5$)

Connect “Char”

Description :

Connect-Char (also known as Captain’s Mistress or Connect 4) is a two-player game in which the players first choose a color and then take turns dropping one colored disc from the top into a seven-column, six-row vertically suspended grid. The pieces fall straight down, occupying the lowest available space within the column. The objective of the game is to be the first to form a horizontal, vertical, or diagonal line of four of one's own discs.

Basic Features :

1. Allow players to login/register.
2. Allow user to choose their color before the game begins.
3. Once the **winning condition** meets, declare the **WINNER**. Else declare **DRAW**.

Advanced Features :

1. Provide a hint to the user, so that the game shows him the best possible move (In case of multiple best move, show any one)
2. Allow game to keep track of each player’s winning streak.
3. Display top 10 high scores in the game.

Criteria : The player only enters the list of highscore, if they win. Besides this, the highscore is sorted in such a way that the player with the least moves appears at the top of the list. In case of clash, the players are sorted according to the one which is recent.



Open Problem Challenge

We, Softablitz, are the most powerful development team in MNNIT. We think no one can defeat us. So we have decided to put an open challenge to prove your worthiness to be the worthy-coordinator. So you can challenge us and prove us that you are worthy enough by creating a powerful software.

This is an open challenge, hence design a software of your choice. Anything you can think of. Points will be awarded on your design, the creativity of the idea, approach and the utility of the software. (Please do not copy from the internet)

