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# **User Manual**

## **Periodic Table Web Game**

**Version 1.0**

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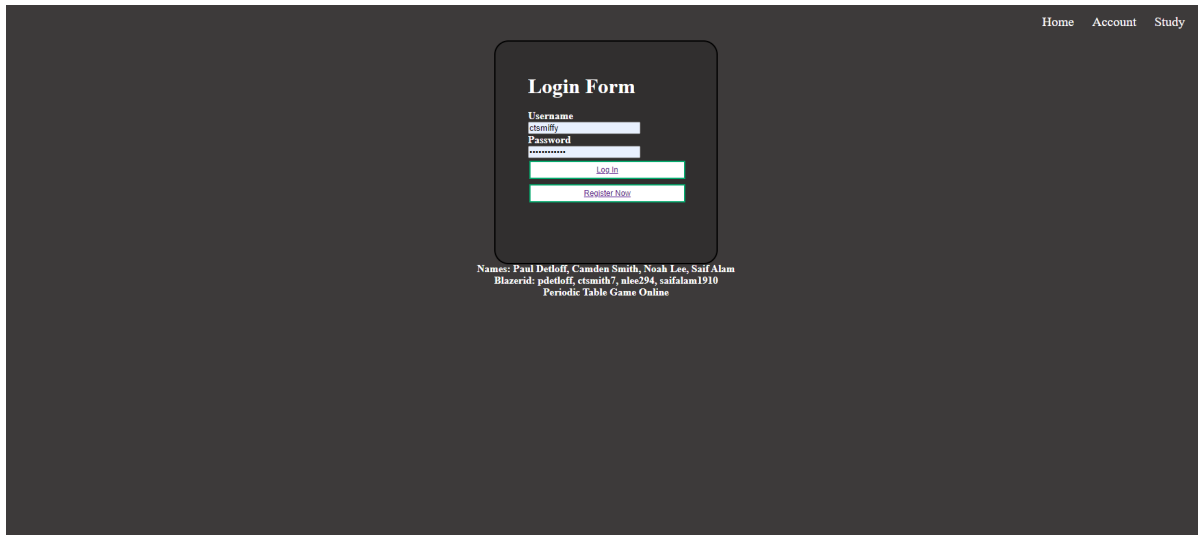
**11/30/2023**

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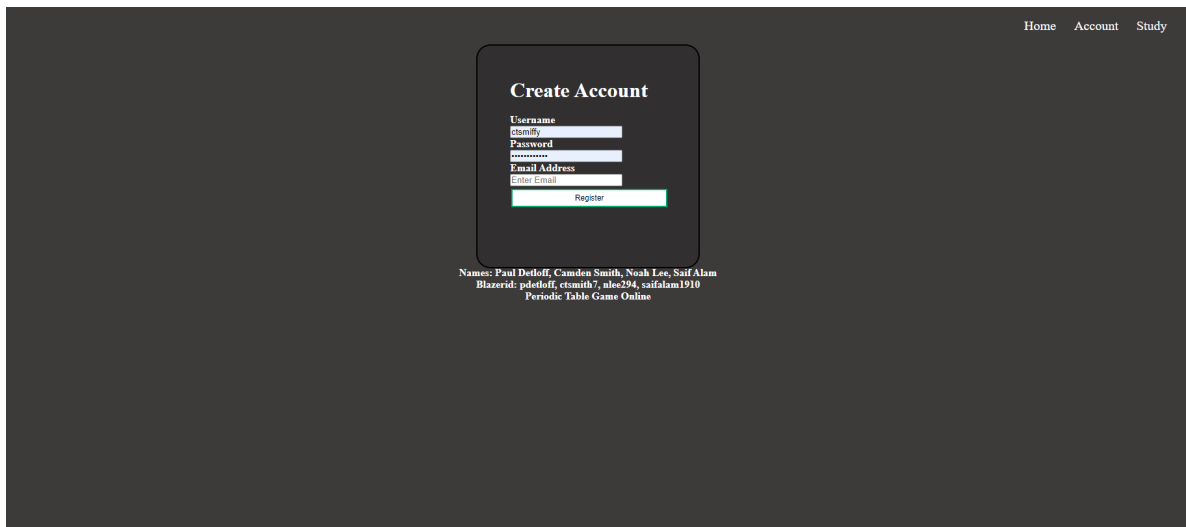
## Create Account/Log-in/Log-out

- Players are encouraged to log in so their high score is saved and their username is displayed on the leaderboard if their high score qualifies.



The screenshot shows a web application with a dark background. In the top right corner, there is a menu bar with the links "Home", "Account", and "Study". In the center, there is a white rounded rectangle containing the "Login Form". The form has two input fields: "Username" with the placeholder text "ctamify" and "Password" with the placeholder text "password". Below these fields are two buttons: "Log In" and "Register Now". At the bottom of the form, there is a small text block that reads: "Names: Paul Detloff, Camden Smith, Noah Lee, Saif Alam", "Blazerid: pdetloff, csmith7, nlee294, saifalam1910", and "Periodic Table Game Online".

- Select the Account option in the Menu Bar.



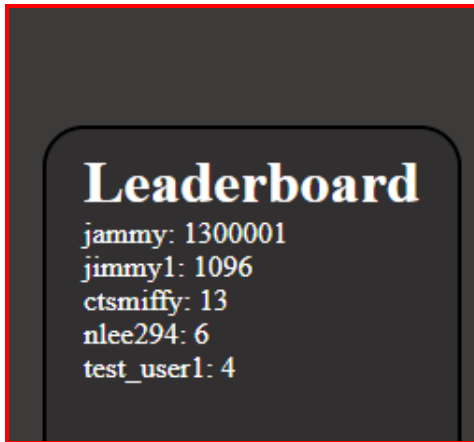
The screenshot shows the same web application as the previous one, but with the "Create Account" form displayed in the center. The form has four input fields: "Username" with the placeholder text "ctamify", "Password" with the placeholder text "password", "Email Address" with the placeholder text "Enter Email", and a "Register" button. The same menu bar and footer text are visible as in the previous screenshot.

- Create a User Account with Email, Username, and Password. Log-in if the account already exists.



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- Click Account on the menu bar and then click logout to log out of your account.

## Leaderboard



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- The leaderboard is located on the left side of the web page, and displays the usernames of those with the highest high scores of all users. This table is updated every time the page is loaded, so make sure you are on top of your game to stay near the top!

## Dynamic Periodic Table Window

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The screenshot shows the 'Dynamic Periodic Table Window' interface. On the left is a 'Leaderboard' with the following entries:

Username	Score
jimmy1: 1300001	1300001
jimmy1: 1096	1096
ctsmiffy: 13	13
nlec294: 6	6
test_user1: 4	4

In the center is a large grid representing the periodic table, currently filled with blank white squares. Above the grid, it says 'Score: 0' and 'Symbol => Name (1.00x)'. On the right is a 'Question Window' with the text 'Type the name of this element: Pu'. Below this are buttons for 'Answer', 'Give Up', and 'End Game'. At the bottom right, there are instructions: '● Symbol => Name (1.00x)', '● Name => Group (1.25x)', '● Name/Symbol => Atomic Number (1.50x)', and a 'Set Game Mode' button.

- The periodic table is originally filled with blank spots for each element.

The screenshot shows the 'Dynamic Periodic Table Window' interface with the periodic table filled with element data. The 'Leaderboard' on the left is updated with the following entries:

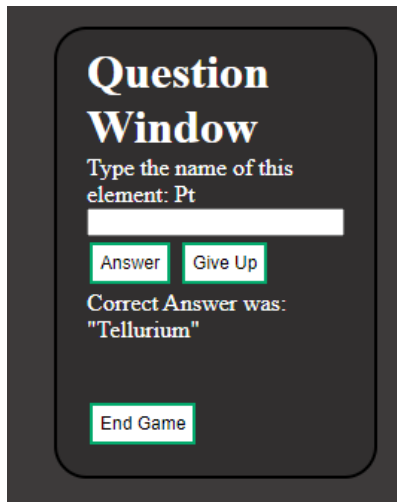
Username	Score
jimmy1: 1300001	1300001
jimmy1: 1096	1096
ctsmiffy: 13	13
nlec294: 6	6
test_user1: 4	4

The periodic table grid now displays elements with their symbols, names, and atomic numbers. Elements are color-coded: green for correct answers and red for incorrect ones. The 'Question Window' on the right shows 'Type the name of this element: Pt' and 'Correct Answer was: "Platinum"'. The 'Score' is now 19, and the 'Symbol => Name (1.00x)' indicator is present.

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- If a question is answered correctly on the first try for a given element, the element will appear on the periodic table as green. If a question isn't answered correctly on the first try, the element is outlined in red with a white background.
- This gives a visual representation of the score that they player has, and is good to study.

## Question Area

A dark gray rectangular window with rounded corners. At the top, the text "Question Window" is displayed in a large, bold, white serif font. Below this, in a smaller white font, is the instruction "Type the name of this element: Pt". Underneath the instruction is a white rectangular text input field. Below the input field are two small, light green rectangular buttons with black text: "Answer" on the left and "Give Up" on the right. Below these buttons, the text "Correct Answer was: 'Tellurium'" is displayed in white. At the bottom of the window is a single light green rectangular button with black text that says "End Game".

**Question Window**

Type the name of this element: Pt

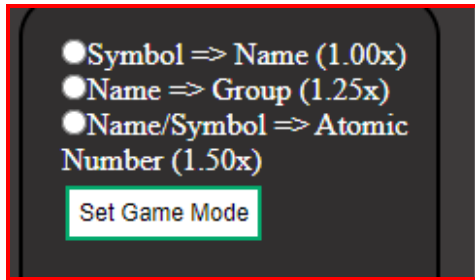
Answer Give Up

Correct Answer was: "Tellurium"

End Game

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- A question is displayed and the user must type the correct answer into the text field. The answer is not case sensitive, so no need to worry about that.
- There are three buttons to select.
  - Check Answer
    - If the user answers correctly on the first try, then the corresponding element in the periodic table will be revealed with a green background. A point value is added to their score.
    - If an answer isn't guessed on the first try, then it will continue to ask the question until correct or the user gives up. Element is revealed on the table with a red outline, and no points are awarded to score.
  - Give up
    - If the user decides they need to have the answer revealed, then they can click give up. Element is revealed on the table with a red outline, and no points are awarded to score.
  - End game
    - This will end the game before all elements are revealed if the user wants to end the game early. Score will be recorded as of the time the button is pressed.

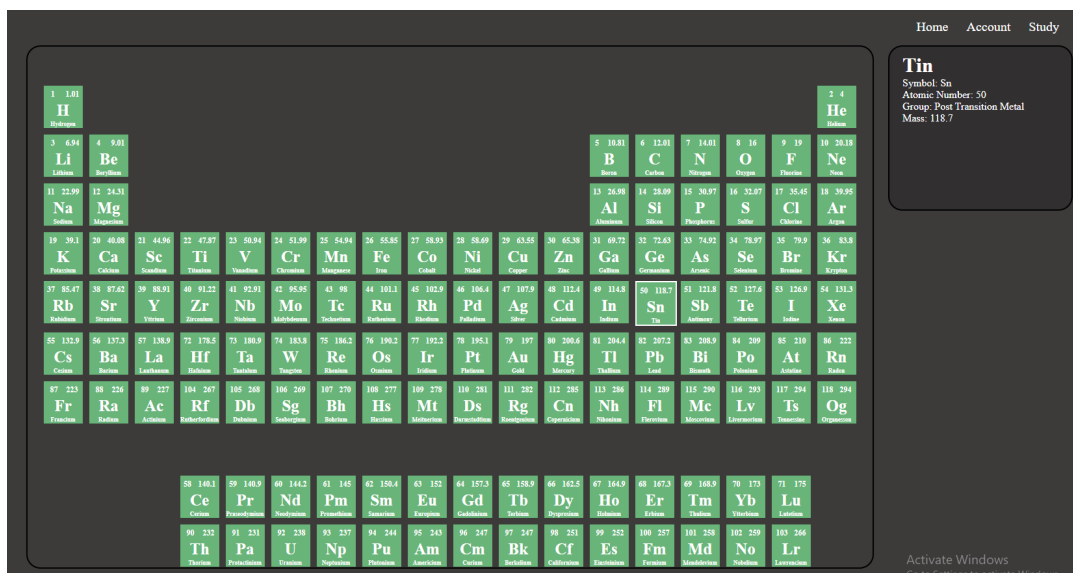
## Game Mode Selector



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- At launch, the default game mode selected is “ “. Each game mode has a different score multiplier, based on the difficulty of the game mode. From that point, users can choose to switch between game modes, which is as follows:
  - Given the symbol, type the name
  - Given the name, type the group
  - Given the Name and Symbol, type the atomic number
- The methodologies for the game mode is concurrent with the rest of the web application, in which a question is prompted (based on the mode) and the user inputs the answer. Correct answers will appear and be highlighted green, and incorrect/given up answers will appear with a red highlight.



## Study Page



The screenshot displays a study page with a dark background. On the left is a periodic table with elements highlighted in green. On the right is a detailed information card for the element Tin (Sn). The card includes the element's symbol, atomic number, group, and mass. At the bottom right, there is a watermark for 'Activate Windows'.

Home Account Study

**Tin**  
Symbol: Sn  
Atomic Number: 50  
Group: Post Transition Metal  
Mass: 118.7

1 1.01 H Hydrogen  
3 6.94 Li Lithium  
11 22.99 Na Sodium  
19 39.1 K Potassium  
37 85.47 Rb Rubidium  
55 132.9 Cs Cesium  
87 223 Fr Francium  
2 4 He Helium  
4 9.01 Be Beryllium  
12 24.31 Mg Magnesium  
20 40.08 Ca Calcium  
38 87.62 Sr Strontium  
56 137.3 Ba Barium  
88 226 Ra Radium  
21 44.96 Sc Scandium  
39 88.91 Y Yttrium  
57 138.9 La Lanthanum  
89 227 Ac Actinium  
22 47.87 Ti Titanium  
40 91.22 Zr Zirconium  
72 178.5 Hf Hafnium  
90 231 Th Thorium  
23 50.94 V Vanadium  
41 92.91 Nb Niobium  
73 180.9 Ta Tantalum  
91 232 Pa Protactinium  
24 51.99 Cr Chromium  
42 95.94 Mo Molybdenum  
74 183.8 W Tungsten  
92 238 U Uranium  
25 54.94 Mn Manganese  
43 98 Tc Technetium  
75 186.2 Re Rhenium  
93 237 Np Neptunium  
26 55.85 Fe Iron  
44 101.1 Ru Ruthenium  
76 190.2 Os Osmium  
94 244 Pu Plutonium  
27 58.93 Co Cobalt  
45 102.9 Rh Rhodium  
77 191.2 Ir Iridium  
95 247 Am Americium  
28 58.69 Ni Nickel  
46 106.4 Pd Palladium  
78 195.1 Pt Platinum  
96 247 Cm Curium  
29 63.55 Cu Copper  
47 107.9 Ag Silver  
79 197 Au Gold  
97 247 Bk Berkelium  
30 65.38 Zn Zinc  
48 112.4 Cd Cadmium  
80 200.6 Hg Mercury  
98 251 Es Einsteinium  
31 68.72 Ga Gallium  
49 114.8 In Indium  
81 204.4 Tl Thallium  
99 252 Cf Californium  
32 72.63 Ge Germanium  
50 118.7 Sn Tin  
82 207.2 Pb Lead  
100 257 Fm Fermium  
33 74.92 As Arsenic  
51 121.8 Sb Antimony  
83 208.9 Bi Bismuth  
101 258 Md Mendelevium  
34 78.97 Se Selenium  
52 127.6 Te Tellurium  
84 209 Po Polonium  
102 259 No Nobelium  
35 79.9 Br Bromine  
53 126.9 I Iodine  
85 210 At Astatine  
103 260 Lr Lawrencium  
36 85.8 Kr Krypton  
54 131.3 Xe Xenon  
86 222 Rn Radon  
104 261 Og Oganesson  
58 140.1 Ce Cerium  
60 140.9 Pr Praseodymium  
62 144.2 Nd Neodymium  
64 145 Pm Promethium  
66 150.4 Sm Samarium  
68 157.3 Eu Europium  
70 173 Yb Ytterbium  
72 175 Lu Lutetium  
90 232 Th Thorium  
92 233 Pa Protactinium  
94 237 U Uranium  
96 244 Pu Plutonium  
98 251 Es Einsteinium  
100 257 Fm Fermium  
102 259 No Nobelium  
104 261 Og Oganesson

Activate Windows  
Go to Settings to activate Windows.

- The study page serves as a reference for the periodic table. It contains all the elements shown on the screen, and clicking on a certain element will retrieve information about the element, which aligns with the different game modes. This serves as a review or reference tool before users begin to play the game.