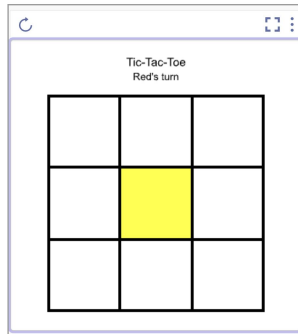## A.1 Pre-Post Test Task Descriptions & Requirement Rubrics and Ground-truths

Your task here is to instruct ChatGPT (or a student in an intro to CS class) to implement this game (shown below) in Python. Write a natural language prompt (i.e., English instruction) to reproduce key functionalities and features in this game. Note:

Your answer should be about a half page in length (with formatting).

The framing box with the refresh button and the full-screen button is not part of the game so you do not need to describe it.
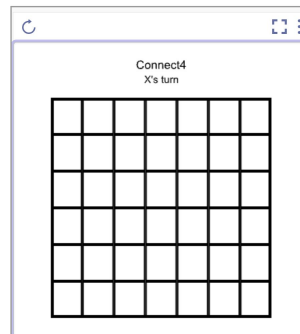
Your task here is to instruct ChatGPT (or a student in an intro to CS class) to implement this game (shown below) in Python. Write a natural language prompt (i.e., English instruction) to reproduce key functionalities and features in this game. Note:

Your answer should be about a half page in length (with formatting).

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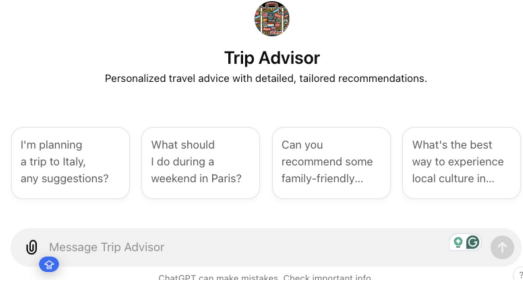
Game Tasks.

Tic-Tac-Toe. Correct Clauses = 9

(1) Render the title "Tic-Tac-Toe" on top of the board.
(2) If the hovered over cell is empty, highlight the cell under the mouse cursor.
(3) If the selected cell is empty, mouse click puts a solid red or blue circle on the board (current player's move).
(4) Display the corresponding message (e.g., "Red's turn").
(5) If there is a winner, display a message (e.g., "Red wins!") and draw a line through the winning cells.
(6) Display a tie game message (e.g., "Tie game!").
(7) Display instructions to restart, e.g., "(press r to restart)" if the game is over.
(8) Handle key press 'r' to restart the game and reinitialize the board.

Connect4. Correct Clauses = 9

(1) Render the title "Connect4" on top of the board.
(2) If a hovered over column is not full, highlight the column under the mouse cursor.
(3) If a selected column is not full, drop a piece (X or O) in the bottom of the column.
(4) Display the corresponding message (e.g., "X's turn").
(5) If there is a winner, display a message (e.g., "X wins!") and draw a line through the winning cells.
(6) Display a tie game message (e.g., "Tie game!").
(7) Display instructions to restart, e.g., "(press r to restart)" if the game is over.
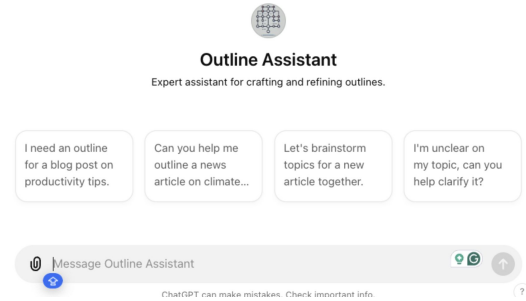(8) Handle key press 'r' to restart the game and reinitialize the board.

Here is a Trip Advisor tool created by prompting GPT. Your task here is to reproduce the tool's prompt.
Here are some example inputs from two different users, and the corresponding outputs from the tool: Example 1; Example 2; Example 3
Skim through all usage examples and infer what prompt is used to drive GPT on Trip Advisor. Write the prompt below.

Trip Advisor
Personalized travel advice with detailed, tailored recommendations.

| I'm planning a trip to Italy, any suggestions? | What should I do during a weekend in Paris? | Can you recommend some family-friendly... | What's the best way to experience local culture in... |

Message Trip Advisor

ChatGPT can make mistakes. Check important info.

Here is an Outline Assistant tool created by prompting GPT. Your task here is to reproduce the tool's prompt.
Here are some example inputs from different users, and the outputs from Outline Assistant: Example 1; Example 2
Skim through all usage examples and infer what prompt is used to drive Outline Assistant. Write the prompt below.

Outline Assistant
Expert assistant for crafting and refining outlines.

| I need an outline for a blog post on productivity tips. | Can you help me outline a news article on climate... | Let's brainstorm topics for a new article together. | I'm unclear on my topic, can you help clarify it? |

Message Outline Assistant

ChatGPT can make mistakes. Check important info.

GPTs Tasks.

Outline Assistant. Correct Clauses = 6

(1) If the user is unclear, brainstorm with them until a clear topic and direction are established. (ask questions)
(2) Use a list of follow-up questions to let the users clarify and specify their needs, such as target audience, length, focus, tone, and style.
(3) If the topic and direction are clear, create an outline for the user to confirm, and ask for the user's opinion to edit or modify.
(4) In addition to asking for user feedback, offer suggestions for potential modification direction.
(5) The initial outline should be five high-level sections, including an introduction, three body sections depending on the topic, and a conclusion.
(6) Each outline section should be separated by line breaks, have a title, and two bullet points.

Trip Advisor. Correct Clauses = 5

(1) Ask users for details like budget, travel dates, interests, dietary restrictions, and desired activities to offer tailored advice.
(2) Clarify any ambiguous preferences — such as the length of a "short trip" — to ensure recommendations are accurate. (short trip -> how many days?)
(3) Use a list of short questions to clarify the user preferences.
(4) Once the details have been clarified, in the start of every suggestion, always give a TL;DR of practical travel tips like "TL;DR: 1. ..., 2, ..."
(5) If [ITINERARY=False], only provide a high-level overview that includes three sections: What to do, Where to stay, What to eat. Each section should only be a short paragraph.

A.2 Prompt Output Generation

API Call Setup: model = gpt-4o, temperature = 0, all other parameters are of default values[20]

Game Task prompt:

```
Generate Python code but nothing else.
Follow this prompt: {user_prompt}
```

GPTs Task prompt:

```
Follow this prompt: {user_prompt}
```

A.3 Optimized Prompt Generation

Game Task prompt passed into Prompt Maker[21]:

```
"Generate Python code but nothing else. {user_prompt}"
```

GPTs Task prompt passed into Prompt Maker:

```
"{user_prompt}"
```

---

[20]https://platform.openai.com/docs/api-reference/chat/create#chat-create-temperature
[21]https://chatgpt.com/g/g-hhh4w3eov-prompt-maker