**Cloud server-based multiplayer “Treasure hunt” game**

**Overview:**

1. **Game Scenario**
   * " Treasure Hunt" is a game where multiple players search for treasures on the same map
   * Server manages the locations of players and treasures, and sends synchronization data to the clients
   * Client requests player movement and interaction from the server
2. **Core Functionalities**
   * Server: Multiplayer management, random treasure placement, game state synchronization
   * Client: Player movement, sending commands to the server, real-time data rendering
   * Basic algorithm: Location coordinate management, collision check, data synchronization

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Given code: (Server: [Program.cs](https://kmuackr-my.sharepoint.com/:u:/g/personal/102113_ms_kmu_ac_kr/ER9QVEJzS-1BveXViKiXYMYBNzM-AwCijxAbbhV9hUvcdw?e=RaEZW9) running in cloud environment), (Client: [Client.cs](https://kmuackr-my.sharepoint.com/:u:/g/personal/102113_ms_kmu_ac_kr/EcvSoFoSpNVCobQJ2bb6aRAB1SKQjUusneeZ51xm6qycNA?e=eJdhOL) running locally)

**Questions:**

1. When a player moves, send feedback to the player whether he is close to the treasure or farther away from the treasure
2. When a treasure is found, assign a new treasure to a random location
3. When a treasure is found, broadcast the cumulative score of all players currently connected
   1. When a treasure is found, 1 point is given.
4. When players overlap on the map, display the location as \*
5. To input a command in the given code, you must press Enter after entering the command character to transmit the command to the server. Modify the code so that it is transmitted to the server side with only the command character keyboard without pressing Enter. You might like to use Console.ReadKey(true) or something.

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| //Example of use : Console.ReadKey(true)  using System;  class Program  {  static void Main()  {  Console.WriteLine("Press any key (input will not be shown):");  // Read key without displaying it  ConsoleKeyInfo keyInfo = Console.ReadKey(true);  // Display the key pressed  Console.WriteLine($"\nYou pressed: {keyInfo.Key}");  Console.WriteLine($"Key Character: {keyInfo.KeyChar}");  Console.WriteLine($"Modifiers: {keyInfo.Modifiers}");  }  } |

1. When a player connects to the server-side treasure map, the player's location is not displayed immediately. Modify the code so that it is displayed on the map immediately when the player connects.

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자동 생성된 설명

1. In addition, if you find any other bugs, fix them.

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**Submission Guidelines:**

* During the lab time, if you complete 4 or more of the above 7 problems, you will be checked and may leave the room.
  + 7Q: 11 points, 3Q: 10 points, 2Q: 8 points, 1Q: 5 points, 0Q: 4points
* Submission deadline after lab time: By Wednesday, December 4
* Submission file format: a single Word (docx), pdf or Hangul (hwpx) file containing the server side final source code (text format, not image)
  + State the question numbers you solved on the first line of the submission file (if you do not, 0 points)
  + Result: No need to submit

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