

Assignment Note:

Dear Candidate,

Thank you for sharing your profile and experience with us.

We would like to clarify that we are currently hiring for a **Junior Full-Stack Developer** role (*0–1 years of experience*), primarily focused on the following technologies:

- Node.js
- React
- Next.js
- TypeScript
- Generative AI

The compensation range for this position is **₹15,000 – ₹20,000 per month**. This role is designed for **early-career developers** who are eager to learn, grow, and build real-world experience.

If this scope and salary range work for you, please confirm, and we will be happy to proceed with the next steps.

Best regards,
Hiring Team

Important Note

There is **no perfect version** expected.
Whatever you are able to build in the time will be evaluated.
We care more about how you think and structure things than polish.

Project: Shadow Signal

Realtime Multiplayer Social Deduction Game

Overview

Build a small multiplayer web game called **Shadow Signal**.
Players join a private room and try to identify who does not belong, based on hidden roles and secret words.

This challenge is designed to test:

- Realtime multiplayer logic
 - System design and state management
 - Frontend and backend integration
 - Use of AI in a real product
 - Code quality and clarity
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Game Modes

The game supports **two modes**.

1) Infiltrator Mode

Roles:

- **Citizens** (majority) – receive the same secret word
- **Infiltrator** (1 player) – receives **no word**

Goal:

- Citizens must identify and eliminate the Infiltrator
 - The Infiltrator wins if they survive until the final round
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2) Spy Mode

Roles:

- **Agents** (majority) – receive the same word
- **Spy** (1 player) – receives a similar but different word

Example:

Agents → “Beach”

Spy → “Island”

Goal:

- Agents must find the Spy
 - Spy must blend in and avoid detection
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Game Flow

1. **Create or Join Room**
One player creates a room and gets a room code.
Others join using the code and a player name.
2. **Lobby**
Players wait in the lobby.
The host selects the game mode (Infiltrator or Spy) and starts the game.
3. **Role and Word Assignment**
The server randomly assigns roles.
The server picks a word (or a word pair in Spy mode).
Each player privately receives their own word.
4. **Speaking Phase**
Players take turns, 30 seconds each.
Each player describes their word without saying it directly.
5. **Voting Phase**
All players vote for who they think is suspicious.

6. Elimination and Win Conditions

The player with the most votes is removed.

- If the special role is eliminated → Agents / Citizens win
 - If only two players remain and the special role is still alive → Special role wins
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Technology Requirements

- **Frontend:** Next.js with TypeScript
 - **Backend:** Node.js
 - **Realtime:** Socket.io
 - **Database:** Optional (in-memory is allowed)
 - **AI:** Use AI as much as possible for:
 - Word generation
 - Word pairs
 - Prompts or hints
 - Or any other part of the game
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UI / UX Requirements

- The design should look **natural and authentic**, not like a template
 - It should feel like a real party game
 - The game must be **mobile friendly** and usable on small screens
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Multiplayer Requirements

- Players must be able to join a shared room
 - They must see each other in real time
 - All game state (turns, votes, eliminations) must stay synchronized
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Infiltrator Mode Dataset

Create a **JSON file** containing groups of similar or related words or names to be used in Infiltrator Mode.

Example:

fruits → Apple, Mango, Banana, Orange

vehicles → Car, Bike, Bus, Truck

cities → Paris, London, Rome, Madrid

This dataset should be used by the game to select words.

Hosting

The game must be deployed on:

- **Vercel**, or
- Any other public hosting platform

A live playable URL is required.

Deliverables

Please submit:

1. A **live game URL**
 2. A **GitHub repository**
 3. A **small code document** (README or PDF) explaining:
 - Architecture
 - Realtime logic
 - How AI is used
 4. **Clean, readable, well-structured code**
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Review Criteria

We will review based on:

- Game logic correctness
- Multiplayer and realtime quality
- Use of AI
- Code quality and TypeScript usage
- UI / UX and mobile friendliness
- Overall completeness

Deadline

Weekly deadline: 17th January EOD

If you need more time, feel free to ask before the deadline.

Eg JSON for words

```
{
  "domains": [
    {
      "name": "Food & Cuisine",
      "words": [
        {
          "word": "Pizza",
          "similar": ["Pasta", "Burger", "Sandwich", "Taco", "Sushi"]
        },
        {
          "word": "Coffee",
          "similar": ["Tea", "Espresso", "Cappuccino", "Latte",
"Mocha"]
        },
        {
          "word": "Chocolate",
          "similar": ["Candy", "Caramel", "Fudge", "Brownie",
"Truffle"]
        },
        {
          "word": "Salad",
          "similar": ["Soup", "Appetizer", "Side dish", "Coleslaw",
"Caesar"]
        }
      ]
    }
  ]
}
```

```
]
},
{
  "name": "Animals",
  "words": [
    {
      "word": "Dog",
      "similar": ["Cat", "Wolf", "Fox", "Puppy", "Husky"]
    },
    {
      "word": "Elephant",
      "similar": ["Rhino", "Hippo", "Giraffe", "Mammoth",
"Buffalo"]
    },
    {
      "word": "Eagle",
      "similar": ["Hawk", "Falcon", "Owl", "Vulture", "Condor"]
    },
    {
      "word": "Dolphin",
      "similar": ["Whale", "Shark", "Seal", "Porpoise", "Orca"]
    }
  ]
},
{
  "name": "Sports & Activities",
  "words": [
    {
      "word": "Soccer",
      "similar": ["Football", "Basketball", "Hockey", "Rugby",
"Volleyball"]
    },
    {
      "word": "Swimming",
      "similar": ["Diving", "Surfing", "Kayaking", "Snorkeling",
"Water polo"]
    },
    {
```

```

        "word": "Tennis",
        "similar": ["Badminton", "Squash", "Ping pong",
"Racquetball", "Pickleball"]
    },
    {
        "word": "Running",
        "similar": ["Jogging", "Sprinting", "Marathon", "Track",
"Cycling"]
    }
]
},
{
    "name": "Entertainment",
    "words": [
        {
            "word": "Movie",
            "similar": ["Film", "Cinema", "Theater", "Show",
"Documentary"]
        },
        {
            "word": "Concert",
            "similar": ["Festival", "Gig", "Performance", "Recital",
"Show"]
        },
        {
            "word": "Video game",
            "similar": ["Board game", "Card game", "Mobile game",
"Console", "PC game"]
        },
        {
            "word": "Netflix",
            "similar": ["Streaming", "TV show", "Series", "Binge-watch",
"Episode"]
        }
    ]
},
{
    "name": "Travel & Places",

```

```
    "words": [  
      {  
        "word": "Beach",  
        "similar": ["Ocean", "Coast", "Shore", "Island", "Resort"]  
      },  
      {  
        "word": "Mountain",  
        "similar": ["Hill", "Peak", "Summit", "Valley", "Cliff"]  
      },  
      {  
        "word": "Hotel",  
        "similar": ["Motel", "Resort", "Hostel", "Inn", "Lodge"]  
      },  
      {  
        "word": "Airport",  
        "similar": ["Terminal", "Flight", "Airplane", "Runway",  
"Gate"]  
      }  
    ]  
  }  
]  
}
```