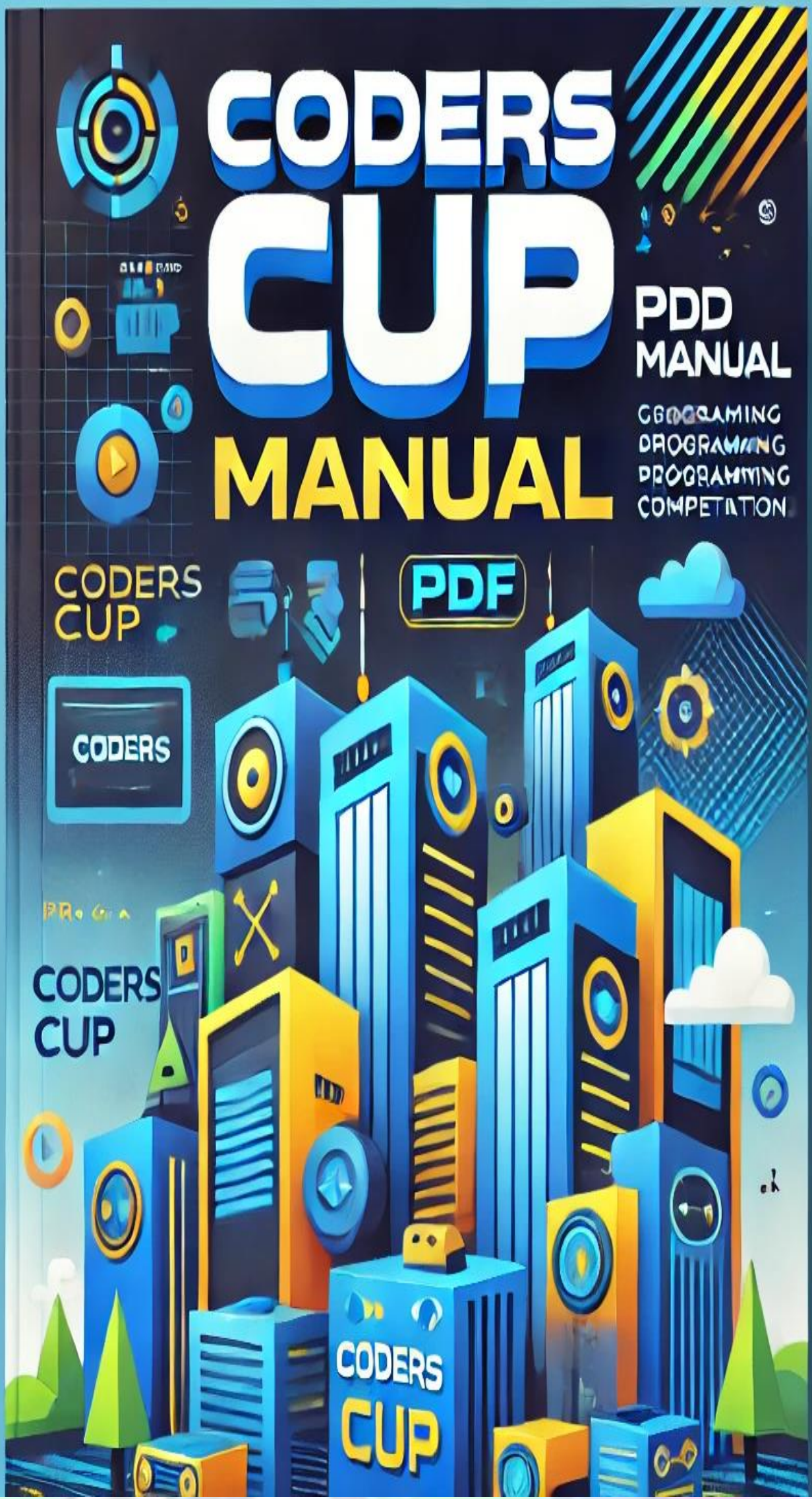
CODERS CUP MANUAL
PDD MANUAL
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Coders Cup competition
(Questions Examples)

In this file you will find question examples for all categories.

Time Line:

- **Kudo**
- **Scratch**
- **PictoBlox**
- **MIT App Inventor**
- **Unity**
- **Python**

Kudo Game Lab: (On spot tasks)

- **Section 1: A - Easy Task (to be delivered in 30 minutes) (50 point)**
    1. Create a character that moves forward when the "W" key is pressed and turns left when the "A" key is pressed.
    2. Change the terrain texture of your Kodu world to a grassy ground.
    3. Create a character that says "Hello, world!" when it collides with another character.
- **Section 2: A+ - Medium Task (to be delivered in 45 minutes) (30 Point)**
    1. Create a score variable and increase it by 1 every time your character collects a coin.
    2. Add a boundary to your Kodu world to prevent your character from crossing it.
    3. Write a script that makes your character change its appearance when it reaches a specific location.
- **Section 3: A++ - Difficult Task (to be delivered in 1 hour) (20 Point)**
    1. Create a list called "inventory" and add different items to it when your character collects them.
    2. Design a custom rule that makes your character perform a special action when it encounters a specific object.
    3. Use messaging to make two characters interact with each other, such as exchanging items or triggering events.

Scratch: (On spot tasks)

- **Section 1: A - Easy Task (to be delivered in 30 minutes) (50 point)**
    1. Create a sprite that moves from the left side of the screen to the right side when the green flag is clicked.
    2. Change the background of your Scratch project to a beach scene.
    3. Make a sprite say "Hello, world!" when the space key is pressed.
- **Section 2: A+ - Medium Task (to be delivered in 45 minutes) (30 Point)**
    1. Create a variable called "score" and increase it by 1 every time the sprite touches another sprite.
    2. Make a sprite bounce off the edges of the screen when it reaches them.
    3. Write a script that makes a sprite change its costume every time the "A" key is pressed.
- **Section 3: A++ - Difficult Task (to be delivered in 1 hour) (20 Point)**
    1. Task: Create a list called "inventory" and add different items to it when the sprite collects them.
    2. Task: Design a custom block that makes a sprite move in a zigzag pattern when called.

3. Task: Use the "broadcast" block to make two sprites interact with each other in a game-like scenario.

PictoBlox: (On spot tasks)

- **Section 1: A - Easy Task (to be delivered in 30 minutes)** **(50 point)**
    1. Task: Create a sprite that moves from the left side of the screen to the right side when the green flag is clicked.
    2. Task: Change the background of your PictoBlox project to a beach scene.
    3. Task: Make a sprite say "Hello, world!" when the space key is pressed.
- **Section 2: A+ - Medium Task (to be delivered in 45 minutes)** **(30 Point)**
    1. Task: Create a variable called "score" and increase it by 1 every time the sprite touches another sprite.
    2. Task: Make a sprite bounce off the edges of the screen when it reaches them.
    3. Task: Write a script that makes a sprite change its costume every time the "A" key is pressed.
- **Section 3: A++ - Difficult Task (to be delivered in 1 hour)** **(20 Point)**
    1. Task: Create a list called "inventory" and add different items to it when the sprite collects them.
    2. Task: Design a custom block that makes a sprite move in a zigzag pattern when called.
    3. Task: Use the "broadcast" block to make two sprites interact with each other in a game-like scenario

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MIT App Inventor: (On spot tasks)

- **Section 1: A - Easy Task (to be delivered in 30 minutes)** **(50 point)**
    1. Create a button in your app that, when clicked, changes the background color.
    2. Add an image to your app and make it move across the screen when the user touches it.
    3. Make a text label display a random number between 1 and 10 when a specific event occurs, such as shaking the device.
- **Section 2: A+ - Medium Task (to be delivered in 45 minutes)** **(30 Point)**
    1. Create a simple quiz game where the user answers multiple-choice questions and receives feedback on their answers.
    2. Implement a timer in your app that counts down from a specified time and performs an action when it reaches zero.
    3. Add sound effects to your app, such as playing a sound when a button is pressed or when a certain event occurs.
- **Section 3: A++ - Difficult Task (to be delivered in 1 hour)** **(20 Point)**
    1. Build a maze game where the user navigates through a maze by tilting the device or using swipe gestures.
    2. Create a multiplayer game where two users can play against each other, such as a tic-tac-toe or a Pong-like game.

Unity: (On spot tasks)

- **Section 1: A - Easy Task (to be delivered in 30 minutes) (50 point)**
    1. Create a 3D character that moves forward when the "W" key is pressed and turns left when the "A" key is pressed.
    2. Change the texture of a game object in your Unity scene to a grassy material.
    3. Create a script that displays "Hello, world!" on the screen when the player clicks a button.
- **Section 2: A+ - Medium Task (to be delivered in 45 minutes) (30 Point)**
    1. Implement a scoring system where the player's score increases by 1 every time they collect a coin in the game.
    2. Add collision detection to your character so that it doesn't pass through walls or other obstacles in the scene.
    3. Write a script that makes an enemy character chase and follow the player when they come within a certain distance.
- **Section 3: A++ - Difficult Task (to be delivered in 1 hour) (20 Point)**
    1. Task: Implement an inventory system where the player can collect and store different items throughout the game.
    2. Task: Design a custom AI behavior for an enemy character, such as patrolling between waypoints or using pathfinding algorithms.

Python: (On spot tasks)

- **Section 1: A - Easy Task (to be delivered in 30 minutes) (50 point)**
    1. Create a simple text-based game where the player has to guess a randomly generated number.
    2. Build a "rock, paper, scissors" game where the player can choose their move and compete against the computer.
    3. Create a basic "hangman" game where the player tries to guess a word by inputting letters.
- **Section 2: A+ - Medium Task (to be delivered in 45 minutes) (30 Point)**
    1. Develop a "Pong" game where the player controls a paddle and tries to bounce a ball past the opponent's paddle.
    2. Implement a "Simon Says" game where the computer displays a sequence of colors, and the player has to repeat it.
    3. Build a memory matching game where the player flips cards to find matching pairs within a grid.
- **Section 3: A++ - Difficult Task (to be delivered in 1 hour) (20 Point)**
    1. Create a platformer game where the player controls a character that jumps and avoids obstacles to reach the goal.
    2. Develop a maze game where the player has to navigate through a maze and reach the exit without hitting walls.
    3. Implement a turn-based strategy game where the player can control multiple units and engage in battles

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Note:

- Competition **WILL NOT** provide internet access.
- Each team must prepare their laptop **before** the competition day begins.
- Any communication between team members and the coach will result in **failing** the task.
- The questions provided on the competition day **may** be different from those provided in this file.
- Judges **may** ask the team to work on another laptop if there is suspicion of cheating.
- The main purpose of the on-spot task is to measure the understanding of the team members.