**Task No 1**

**Python Programming**

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**Code:**

**class RedBlueNimGame:**

**def \_init\_(self, red\_piles, blue\_piles):**

**self.red\_piles = red\_piles**

**self.blue\_piles = blue\_piles**

**self.current\_player = 1 # Player 1 starts the game**

**def display\_piles(self):**

**print("Current red piles: ", self.red\_piles)**

**print("Current blue piles: ", self.blue\_piles)**

**def make\_move(self, pile\_color, pile\_index, stones\_to\_remove):**

**if pile\_color == 'red' and 0 <= pile\_index < len(self.red\_piles) and 0 < stones\_to\_remove <= self.red\_piles[pile\_index]:**

**self.red\_piles[pile\_index] -= stones\_to\_remove**

**return True**

**elif pile\_color == 'blue' and 0 <= pile\_index < len(self.blue\_piles) and 0 < stones\_to\_remove <= self.blue\_piles[pile\_index]:**

**self.blue\_piles[pile\_index] -= stones\_to\_remove**

**return True**

**return False**

**def is\_game\_over(self):**

**return all(pile == 0 for pile in self.red\_piles) and all(pile == 0 for pile in self.blue\_piles)**

**def switch\_player(self):**

**self.current\_player = 3 - self.current\_player # Switches between player 1 and player 2**

**def play\_game(self, misere=False):**

**while not self.is\_game\_over():**

**self.display\_piles()**

**pile\_color = input(f"Player {self.current\_player}, choose a pile color (red/blue): ").strip().lower()**

**pile\_index = int(input(f"Player {self.current\_player}, choose a pile index: "))**

**stones\_to\_remove = int(input("Enter the number of stones to remove: "))**

**if not self.make\_move(pile\_color, pile\_index, stones\_to\_remove):**

**print("Invalid move, try again.")**

**continue**

**if self.is\_game\_over():**

**self.display\_piles()**

**if misere:**

**print(f"Player {3 - self.current\_player} wins (Misère version)!")**

**else:**

**print(f"Player {self.current\_player} wins!")**

**break**

**self.switch\_player()**

**# Example usage:**

**# Initialize the game with red and blue piles**

**red\_piles = [3, 4, 5]**

**blue\_piles = [2, 3, 4]**

**game = RedBlueNimGame(red\_piles, blue\_piles)**

**# Play the standard version of the game**

**game.play\_game(misere=False)**

**# To play the Misère version, you can call:**

**# game.play\_game(misere=True)**

**Output:**













