**ROLL NO: RA2211004010572**

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**SECTION: H**

**Write a c program that automates the number game**

**1. (1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31)**

#include <stdio.h>

#include <stdlib.h>

#include <time.h>

int main() {

// Seed the random number generator with the current time

srand(time(NULL));

int target;

int guess;

int tries = 0;

int maxTries = 3;

while (1) {

// Generate a random number in the sequence (1, 3, 5, ..., 31)

target = (rand() % 16) \* 2 + 1;

printf("Welcome to the Number Guessing Game!\n");

printf("I'm thinking of a number in the sequence (1, 3, 5, ..., 31).\n");

while (tries < maxTries) {

printf("Guess the number: ");

scanf("%d", &guess);

if (guess == target) {

printf("Congratulations! You guessed the correct number, which is %d!\n", target);

break; // Exit the loop

} else if (guess < target) {

printf("Your guess is too low. Try again.\n");

} else {

printf("Your guess is too high. Try again.\n");

}

tries++;

}

if (tries == maxTries) {

printf("Sorry, you've run out of guesses. The correct number was %d.\n", target);

}

// Ask the user if they want to play again

char playAgain;

printf("Do you want to play again? (y/n): ");

scanf(" %c", &playAgain);

if (playAgain != 'y') {

break; // Exit the game

}

tries = 0; // Reset the number of tries for the next round

}

return 0;

}

**2. (2,3,6,7,10,11,14,15,18,19,22,23,26,27,30,31)**

#include <stdio.h>

int main() {

int sequence[] = {2, 3, 6, 7, 10, 31};

int targetIndex = 0;

int guess;

int tries = 0;

int maxTries = 3;

char playAgain;

do {

printf("Welcome to the Number Guessing Game!\n");

printf("I'm thinking of a number in the sequence. Try to guess it!\n");

while (tries < maxTries) {

printf("Guess the number: ");

scanf("%d", &guess);

if (guess == sequence[targetIndex]) {

printf("Congratulations! You guessed the correct number, which is %d!\n", sequence[targetIndex]);

break; // Exit the loop

} else {

printf("Your guess is incorrect. Try again.\n");

}

tries++;

}

if (tries == maxTries) {

printf("Sorry, you've run out of guesses. The correct number was %d.\n", sequence[targetIndex]);

}

tries = 0; // Reset the number of tries for the next round

targetIndex++;

if (targetIndex >= sizeof(sequence) / sizeof(sequence[0])) {

printf("You've completed the sequence. Do you want to play again? (y/n): ");

scanf(" %c", &playAgain);

targetIndex = 0; // Reset to the beginning of the sequence

} else {

printf("Do you want to continue with the next number in the sequence? (y/n): ");

scanf(" %c", &playAgain);

}

} while (playAgain == 'y' || playAgain == 'Y');

return 0;

}

**3. (4,5,6,7,12,13,14,15,20,21,22,23,28,29,30,31)**

#include <stdio.h>

#include <stdlib.h>

#include <time.h>

int main() {

int sequence[] = {4, 5, 6, 7, 12, 13, 14, 15, 20, 21, 22, 23, 28, 29, 30, 31};

int targetIndex;

int guess;

int tries;

int maxTries = 3;

char playAgain;

srand(time(NULL)); // Seed the random number generator with the current time

printf("Welcome to the Number Guessing Game!\n");

printf("I'm thinking of a number in the sequence (4, 5, 6, 7, 12, 13, 14, 15, 20, 21, 22, 23, 28, 29, 30, 31).\n");

do {

targetIndex = rand() % (sizeof(sequence) / sizeof(sequence[0])); // Generate a random index for the target number

tries = 0; // Reset the number of tries for each round

while (tries < maxTries) {

printf("Guess the number: ");

scanf("%d", &guess);

if (guess == sequence[targetIndex]) {

printf("Congratulations! You guessed the correct number, which is %d!\n", sequence[targetIndex]);

break; // Exit the loop

} else if (guess < sequence[targetIndex]) {

printf("Your guess is too low. Try again.\n");

} else {

printf("Your guess is too high. Try again.\n");

}

tries++;

}

if (tries == maxTries) {

printf("Sorry, you've run out of guesses. The correct number was %d.\n", sequence[targetIndex]);

}

printf("Do you want to play again? (y/n): ");

scanf(" %c", &playAgain);

} while (playAgain == 'y' || playAgain == 'Y');

return 0;

}

**4. (8,9,10,11,12,13,14,15,24,25,26,27,28,29,30,31)**

#include <stdio.h>

#include <stdlib.h>

#include <time.h>

int main() {

int sequence[] = {8, 9, 10, 11, 12, 13, 14, 15, 24, 25, 26, 27, 28, 29, 30, 31};

int targetIndex;

int guess;

int tries;

int maxTries = 3;

char playAgain;

srand(time(NULL)); // Seed the random number generator with the current time

printf("Welcome to the Number Guessing Game!\n");

printf("I'm thinking of a number in the sequence (8, 9, 10, 11, 12, 13, 14, 15, 24, 25, 26, 27, 28, 29, 30, 31).\n");

do {

targetIndex = rand() % (sizeof(sequence) / sizeof(sequence[0])); // Generate a random index for the target number

tries = 0; // Reset the number of tries for each round

while (tries < maxTries) {

printf("Guess the number: ");

scanf("%d", &guess);

if (guess == sequence[targetIndex]) {

printf("Congratulations! You guessed the correct number, which is %d!\n", sequence[targetIndex]);

break; // Exit the loop

} else if (guess < sequence[targetIndex]) {

printf("Your guess is too low. Try again.\n");

} else {

printf("Your guess is too high. Try again.\n");

}

tries++;

}

if (tries == maxTries) {

printf("Sorry, you've run out of guesses. The correct number was %d.\n", sequence[targetIndex]);

}

printf("Do you want to play again? (y/n): ");

scanf(" %c", &playAgain);

} while (playAgain == 'y' || playAgain == 'Y');

return 0;

}

**5. (16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31)**

#include <stdio.h>

#include <stdlib.h>

#include <time.h>

int main() {

int targetNumber;

int guess;

int maxTries = 3;

int tries;

char playAgain;

srand(time(NULL)); // Seed the random number generator with the current time

printf("Welcome to the Number Guessing Game!\n");

printf("I'm thinking of a number in the sequence (16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31).\n");

do {

targetNumber = rand() % 16 + 16; // Generate a random target number within the sequence

tries = 0; // Reset the number of tries for each round

while (tries < maxTries) {

printf("Guess the number: ");

scanf("%d", &guess);

if (guess == targetNumber) {

printf("Congratulations! You guessed the correct number, which is %d!\n", targetNumber);

break; // Exit the loop

} else if (guess < targetNumber) {

printf("Your guess is too low. Try again.\n");

} else {

printf("Your guess is too high. Try again.\n");

}

tries++;

}

if (tries == maxTries) {

printf("Sorry, you've run out of guesses. The correct number was %d.\n", targetNumber);

}

printf("Do you want to play again? (y/n): ");

scanf(" %c", &playAgain);

} while (playAgain == 'y' || playAgain == 'Y');

return 0;

}