public static void PlayBowling()

{

//记录每一次投掷碰倒的瓶子数量

int[] throwInfo = new int[21];

int count = 0; // 保存投掷的次数

int firstThrowCount = -1; // 保存每轮第1次碰倒瓶子的数量

int secondThrowCount = -1; // 保存每轮第2次碰倒瓶子的数量

Random r = new Random();

// 模拟投掷10轮，不考虑最后一轮的奖励问题

for (int i=1; i<=10; i++)

{

// 模拟每轮的第一次投掷，放置10个瓶子，可能碰倒瓶子的数量0~10

firstThrowCount = r.Next (0, 11);

throwInfo[count++] = firstThrowCount;

Console.WriteLine ("第{0}轮，第1次投掷碰倒{1}个瓶子", i, firstThrowCount);

// 如果没有全中，也就是碰倒瓶子的数量小于10，要进行第2次投掷

if (firstThrowCount < 10)

{

// 第2次投掷碰倒瓶子的数量=0 ~ （10-第1次碰倒的数量）

secondThrowCount = r.Next (0, 10-firstThrowCount+1);

throwInfo[count++] = secondThrowCount;

Console.WriteLine ("第{0}轮，第2次投掷碰倒{1}个瓶子", i, secondThrowCount);

}

Console.WriteLine();

// 如果是最后一轮

if (i == 10)

{

// 如果最后一轮全中，奖励2次投掷

if (firstThrowCount == 10)

{

// 模拟第1次投掷，0~10

firstThrowCount = r.Next (0, 11);

throwInfo[count++] = firstThrowCount;

Console.WriteLine ("第{0}轮，第2次投掷碰倒{1}个瓶子", i, firstThrowCount);

// 如果第1次投掷是全中，那在球道再放10个瓶子，0~10

if (firstThrowCount == 10)

{

secondThrowCount = r.Next(0, 11);

}

// 如果没有全中，第2次投掷碰倒瓶子的数量=0 ~ （10-第1次碰倒的数量）

else

{

secondThrowCount = r.Next (0, 10-firstThrowCount+1);

throwInfo[count++] = secondThrowCount;

}

Console.WriteLine ("第{0}轮，第3次投掷碰倒{1}个瓶子", i, secondThrowCount);

}

// 如果最后一轮是补中，再奖励1次投掷，放置10个瓶子（0~10）

else if (firstThrowCount+secondThrowCount == 10)

{

firstThrowCount = r.Next(0, 11);

throwInfo[count++] = firstThrowCount;

Console.WriteLine ("第{0}轮，第3次投掷碰倒{1}个瓶子", i, firstThrowCount);

} else { // 如果是失误，游戏over了

}

}

}

int[] scores = CalScore(throwInfo);

PrintScore(scores);

}

public static int[] CalScore(int[] throwInfo)

{

int throwIndex = 0; // 投掷的索引，表达第几次投掷，从0开始

int[] scores = new int[10]; // 表达每轮的得分

for (int i=1; i<=10; i++)

{

if (throwInfo[throwIndex] == 10)

{

scores[i-1] = 10 + throwInfo[throwIndex+1] + throwInfo[throwIndex+2] ;

throwIndex +=1;

} else if (throwInfo[throwIndex] + throwInfo[throwIndex+1] == 10) {

scores[i-1] = 10 + throwInfo[throwIndex+2] ;

throwIndex += 2;

} else {

scores[i-1] = throwInfo[throwIndex] + throwInfo[throwIndex+1] ;

throwIndex += 2;

}

}

return scores;

}

public static void PrintScore(int[] scores)

{

int sum = 0;

for (int i=0; i<scores.Length; i++)

{

Console.WriteLine ("第{0}轮得了{1}分", (i+1), scores[i]);

sum += scores[i];

}

Console.WriteLine ("本局总得分" + sum);

}