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```

```
#include <stdio.h>
```

```
#include <stdlib.h>
```

```
int roll_a_dice(void);
```

```
int play_computer(void);
```

```
int computer_strategy_decider(int, int, int, int, int, int, int, int, int);
```

```
int play_user(void);
```

```
void scoresheet(int, int);
```

```
int main(){
```

```
    int rounds, comp_dice, your_dice, i, first_dice_controller, score_comp = 0, score_your = 0,  
    temp_comp, temp_your;
```

```
    char choice;
```

```
    srand(time(NULL));
```

```
    printf("Welcome to the MidnightDice game.\n");
```

```
    printf("Lets get started!\n\n");
```

```
    printf("How many rounds would you like to play? ");
```

```
    scanf("%d",&rounds);
```

```
    do{ // if draw continue asking for input!
```

```
        first_dice_controller = 0;
```

```
        if(rounds> 0){
```

```
            comp_dice = roll_a_dice();
```

```

        printf("I have rolled the dice and got %d\n",comp_dice);

        printf("Shall I roll the dice for you (Y/N)? ");

        scanf(" %c",&choice);

        if (choice == 'Y'){

            your_dice = roll_a_dice();

            printf("I have rolled the dice for you and you got %d!\n",your_dice);

        }

        if (your_dice == comp_dice){

            printf("Draw! Let me roll again!\n");

            first_dice_controller = 1; // for draw condition

        }

    }

}while(first_dice_controller);


for(i=1;i<=rounds;i++){

    if (comp_dice > your_dice){

        printf("\nRound %d -- My Turn:\n", i);

        printf("=====

\n");

        temp_comp = play_computer();

        score_comp += temp_comp;

        printf("\nMy score: %d\n\n",temp_comp);

        printf("Round %d -- Your Turn:\n", i);

```

```

printf("=====
\n");

    temp_your = play_user();

    score_your += temp_your;

    printf("\nYour score: %d\n\n",temp_your);


    scoresheet(score_comp, score_your);

}

    if (your_dice > comp_dice){
        printf("Round %d -- Your Turn:\n", i);

printf("=====
\n");

        temp_your = play_user();

        score_your += temp_your;

        printf("\nYour score: %d\n\n",temp_your);


        printf("\nRound %d -- My Turn:\n", i);

printf("=====
\n");

        temp_comp = play_computer();

        score_comp += temp_comp;

        printf("\nMy score: %d\n\n",temp_comp);


        scoresheet(score_comp, score_your);

    }

}

```

```

    if (score_comp > score_your)
        printf("I AM THE WINNER!");
    else if (score_your > score_comp)
        printf("YOU ARE THE WINNER!");
    else
        printf("DRAW!");

    return 0;
}

int roll_a_dice(void){
    return (1+ rand()%6);
}

int play_computer(void){
    int dice1, dice2, dice3, dice4, dice5, dice6, controller=0, controller_1 = 0, controller_4 = 0, score
= 0;

    int kept1, kept2, kept1_2, kept2_2, kept1_3, kept2_3; // first 2 for first 2 kept value, second 2 for
second 2 kept value, third 2 for third 2 kept value

    //dice1 = roll_a_dice();
    //dice2 = roll_a_dice();
    //dice3 = roll_a_dice();
    //dice4 = roll_a_dice();
    //dice5 = roll_a_dice();
    //dice6 = roll_a_dice();

    dice1 = 2;

```

```
dice2 = 4;
```

```
dice3 = 6;
```

```
dice4 = 5;
```

```
dice5 = 6;
```

```
dice6 = 2;
```

```
printf("I got -> [Dice 1]: %d [Dice 2]: %d [Dice 3]: %d [Dice 4]: %d [Dice 5]: %d [Dice 6]:  
%d\n",dice1,dice2,dice3,dice4,dice5,dice6);
```

```
kept1 = computer_strategy_decider(dice1, dice2, dice3, dice4, dice5, dice6, controller,  
controller_1, controller_4); // controller is 0, the function will return kept1
```

```
controller++;
```

```
kept2 = computer_strategy_decider(dice1, dice2, dice3, dice4, dice5, dice6, controller,  
controller_1, controller_4); // controller is 1, the function will return kept2
```

```
printf("Kept dice %d and %d\n",kept1, kept2);
```

```
if (kept1 == 1 || kept2 == 1){ //This 6 if blocks for "did we find 1 and 4" if 1 found, controller_1 =  
1, if 4 found, controller_4 = 1
```

```
    if (dice1 == 1)
```

```
        controller_1 = 1;
```

```
    if (dice1 == 4)
```

```
        controller_4 = 1;
```

```
}
```

```
if (kept1 == 2 || kept2 == 2){
```

```
    if (dice2 == 1)
```

```
        controller_1 = 1;
```

```
    if (dice2 == 4)
```

```
        controller_4 = 1;
```

```
}
```

```
if (kept1 == 3 || kept2 == 3){  
    if (dice3 == 1)  
        controller_1 = 1;  
    if (dice3 == 4)  
        controller_4 = 1;  
}
```

```
if (kept1 == 4 || kept2 == 4){  
    if (dice4 == 1)  
        controller_1 = 1;  
    if (dice4 == 4)  
        controller_4 = 1;  
}
```

```
if (kept1 == 5 || kept2 == 5){  
    if (dice5 == 1)  
        controller_1 = 1;  
    if (dice5 == 4)  
        controller_4 = 1;  
}
```

```
if (kept1 == 6 || kept2 == 6){  
    if (dice6 == 1)  
        controller_1 = 1;  
    if (dice6 == 4)  
        controller_4 = 1;  
}
```

```

        if (((controller_1 == 1) && (controller_4 == 0)) || ((controller_1 == 0) && (controller_4 == 1))) { //
if we just find 1 or if we just find 4

            if (kept2 == 1)

                score += dice1;

            if (kept2 == 2)

                score += dice2;

            if (kept2 == 3)

                score += dice3;

            if (kept2 == 4)

                score += dice4;

            if (kept2 == 5)

                score += dice5;

            if (kept2 == 6)

                score += dice6;

        }

else if ((controller_1 == 0) && (controller_4 == 0)) { // if we didnt find both 1 and 4

    if ((kept1 == 1) || (kept2 == 1))

        score += dice1;

    if ((kept1 == 2) || (kept2 == 2))

        score += dice2;

```

```
        if ((kept1 == 3) || (kept2 == 3))
            score += dice3;

        if ((kept1 == 4) || (kept2 == 4))
            score += dice4;

        if ((kept1 == 5) || (kept2 == 5))
            score += dice5;

        if ((kept1 == 6) || (kept2 == 6))
            score += dice6;
    }
```

```
//dice1 = roll_a_dice();
//dice2 = roll_a_dice();
//dice3 = roll_a_dice();
//dice4 = roll_a_dice();
//dice5 = roll_a_dice();
//dice6 = roll_a_dice();
```

```
dice1 = 1;
dice1 = 2;
dice1 = 2;
dice1 = 5;
dice1 = 4;
dice1 = 3;
```



```
if (kept1 == 1 || kept2 == 1) // This 6 if statments for making 0 the previous kept dice value
```

```
    dice1 = 0;
```

```
if (kept1 == 2 || kept2 == 2)
```

```
    dice2 = 0;
```

```
if (kept1 == 3 || kept2 == 3)
```

```
    dice3 = 0;
```

```
if (kept1 == 4 || kept2 == 4)
```

```
    dice4 = 0;
```

```
if (kept1 == 5 || kept2 == 5)
```

```
    dice5 = 0;
```

```
if (kept1 == 6 || kept2 == 6)
```

```
    dice6 = 0;
```

```
printf("I got -> ");
```

```
if (dice1 != 0)
```

```
    printf("[Dice 1]: %d ",dice1);
```

```
if (dice2 != 0)
```

```
    printf("[Dice 2]: %d ",dice2);
```

```
if (dice3 != 0)
```

```
    printf("[Dice 3]: %d ",dice3);
```

```
if (dice4 != 0)
```

```
    printf("[Dice 4]: %d ",dice4);
```

```

if (dice5 != 0)
    printf("[Dice 5]: %d ",dice5);
if (dice6 != 0)
    printf("[Dice 6]: %d",dice6);

controller = 0;

kept1_2 = computer_strategy_decider(dice1, dice2, dice3, dice4, dice5, dice6, controller,
controller_1, controller_4); // controller is 0, the function will return kept1

controller++;

kept2_2 = computer_strategy_decider(dice1, dice2, dice3, dice4, dice5, dice6, controller,
controller_1, controller_4); // controller is 1, the function will return kept2

printf("\nKept dice %d and %d\n",kept1_2, kept2_2);


if (((controller_1 == 1) && (controller_4 == 0)) || ((controller_1 == 0) && (controller_4 == 1))) { //
if we just find 1 or if we just find 4
    if (kept2_2 == 1)
        score += dice1;

    if (kept2_2 == 2)
        score += dice2;

    if (kept2_2 == 3)
        score += dice3;

    if (kept2_2 == 4)
        score += dice4;

```

```

        if (kept2_2 == 5)
            score += dice5;

        if (kept2_2 == 6)
            score += dice6;

    }

    else if ((controller_1 == 1 && controller_4 == 1) || (controller_1 == 0 && controller_4 == 0)) { //
if we didnt find both 1 and 4

        if ((kept1_2 == 1) || (kept2_2 == 1))
            score += dice1;

        if ((kept1_2 == 2) || (kept2_2 == 2))
            score += dice2;

        if ((kept1_2 == 3) || (kept2_2 == 3))
            score += dice3;

        if ((kept1_2 == 4) || (kept2_2 == 4))
            score += dice4;

        if ((kept1_2 == 5) || (kept2_2 == 5))
            score += dice5;

        if ((kept1_2 == 6) || (kept2_2 == 6))
            score += dice6;

    }

```

```
    if (kept1_2 == 1 || kept2_2 == 1){ //This 6 if blocks for "did we find 1 and 4" if 1 found,  
controller_1 = 1, if 4 found, controller_4 = 1
```

```
        if (dice1 == 1)  
            controller_1 = 1;
```

```
        if (dice1 == 4)  
            controller_4 = 1;
```

```
    }
```

```
    if (kept1_2 == 2 || kept2_2 == 2){
```

```
        if (dice2 == 1)  
            controller_1 = 1;
```

```
        if (dice2 == 4)  
            controller_4 = 1;
```

```
    }
```

```
    if (kept1_2 == 3 || kept2_2 == 3){
```

```
        if (dice3 == 1)  
            controller_1 = 1;
```

```
        if (dice3 == 4)  
            controller_4 = 1;
```

```
    }
```

```
    if (kept1_2 == 4 || kept2_2 == 4){
```

```
        if (dice4 == 1)  
            controller_1 = 1;
```

```
        if (dice4 == 4)
```

```
        controller_4 = 1;
    }
```

```
if (kept1_2 == 5 || kept2_2 == 5){
    if (dice5 == 1)
        controller_1 = 1;
    if (dice5 == 4)
        controller_4 = 1;
}
```

```
if (kept1_2 == 6 || kept2_2 == 6){
    if (dice6 == 1)
        controller_1 = 1;
    if (dice6 == 4)
        controller_4 = 1;
}
```

```
dice1 = roll_a_dice();
dice2 = roll_a_dice();
dice3 = roll_a_dice();
dice4 = roll_a_dice();
dice5 = roll_a_dice();
dice6 = roll_a_dice();
```

```
if (kept1 == 1 || kept2 == 1 || kept1_2 == 1 || kept2_2 == 1)
    dice1 = 0;
```

```

    if (kept1 == 2 || kept2 == 2 || kept1_2 == 2 || kept2_2 == 2)
        dice2 = 0;

    if (kept1 == 3 || kept2 == 3 || kept1_2 == 3 || kept2_2 == 3)
        dice3 = 0;

    if (kept1 == 4 || kept2 == 4 || kept1_2 == 4 || kept2_2 == 4)
        dice4 = 0;

    if (kept1 == 5 || kept2 == 5 || kept1_2 == 5 || kept2_2 == 5)
        dice5 = 0;

    if (kept1 == 6 || kept2 == 6 || kept1_2 == 6 || kept2_2 == 6)
        dice6 = 0;

    controller = 0;

    kept1_3 = computer_strategy_decider(dice1, dice2, dice3, dice4, dice5, dice6, controller,
    controller_1, controller_4);

    controller++;

    kept2_3 = computer_strategy_decider(dice1, dice2, dice3, dice4, dice5, dice6, controller,
    controller_1, controller_4);

    if (((controller_1 == 1) && (controller_4 == 0)) || ((controller_1 == 0) && (controller_4 == 1))) { //
if we just find 1 or if we just find 4

        if (kept2_3 == 1)
            score += dice1;

        if (kept2_3 == 2)
            score += dice2;

```

```

        if (kept2_3 == 3)
            score += dice3;

        if (kept2_3 == 4)
            score += dice4;

        if (kept2_3 == 5)
            score += dice5;

        if (kept2_3 == 6)
            score += dice6;
    }

    else if ((controller_1 == 0 || controller_1 == 1) && (controller_4 == 0 || controller_4 == 1)){ // if
we didnt find both 1 and 4

        if ((kept1_3 == 1) || (kept2_3 == 1))
            score += dice1;

        if ((kept1_3 == 2) || (kept2_3 == 2))
            score += dice2;

        if ((kept1_3 == 3) || (kept2_3 == 3))
            score += dice3;

        if ((kept1_3 == 4) || (kept2_3 == 4))
            score += dice4;

        if ((kept1_3 == 5) || (kept2_3 == 5))
            score += dice5;

```

```
        if ((kept1_3 == 6) || (kept2_3 == 6))
            score += dice6;
    }
```

```
        if (kept1_3 == 1 || kept2_3 == 1){ //This 6 if blocks for "did we find 1 and 4" if 1 found,
controller_1 = 1, if 4 found, controller_4 = 1
```

```
            if (dice1 == 1)
                controller_1 = 1;
            if (dice1 == 4)
                controller_4 = 1;
        }
```

```
        if (kept1_3 == 2 || kept2_3 == 2){
            if (dice2 == 1)
                controller_1 = 1;
            if (dice2 == 4)
                controller_4 = 1;
        }
```

```
        if (kept1_3 == 3 || kept2_3 == 3){
            if (dice3 == 1)
                controller_1 = 1;
            if (dice3 == 4)
                controller_4 = 1;
        }
```

```
        if (kept1_3 == 4 || kept2_3 == 4){
```



```
        if (dice4 == 1)
            controller_1 = 1;
        if (dice4 == 4)
            controller_4 = 1;
    }
```

```
if (kept1_3 == 5 || kept2_3 == 5){
    if (dice5 == 1)
        controller_1 = 1;
    if (dice5 == 4)
        controller_4 = 1;
}
```

```
if (kept1_3 == 6 || kept2_3 == 6){
    if (dice6 == 1)
        controller_1 = 1;
    if (dice6 == 4)
        controller_4 = 1;
}
```

```
printf("I got -> ");
if (dice1 != 0)
    printf("[Dice 1]: %d ",dice1);
if (dice2 != 0)
    printf("[Dice 2]: %d ",dice2);
if (dice3 != 0)
```

```

        printf("[Dice 3]: %d ",dice3);
    if (dice4 != 0)
        printf("[Dice 4]: %d ",dice4);
    if (dice5 != 0)
        printf("[Dice 5]: %d ",dice5);
    if (dice6 != 0)
        printf("[Dice 6]: %d",dice6);

    if(controller_1 == 0 || controller_4 == 0) // if 4 or 1 is not found, score is 0!
        score = 0;

    return score;

}

int computer_strategy_decider(int dice1, int dice2, int dice3, int dice4, int dice5, int dice6, int controller,
int controller_1, int controller_4){

    int kept1=9, kept2, total_kept=0, biggest = 0, biggest2=0; // kept1 equals an arbitrary value
    because later, I will compare with values to learn if we get kept1.

    if ((dice1 == 1 || dice1 == 4) && (dice1 != 0) && (!controller_1 || !controller_4)){ // if dice is 1 or
    4 and dice hadnt been kept before!

        if(controller_1 == 0 && dice1 == 1){

            if (kept1 == 1 || kept1 == 2 || kept1 == 3 || kept1 == 4 || kept1 == 5 || kept1 ==
6)

                kept2 = 1;

            else

                kept1 = 1;

```

```

        controller_1 = 1;
        total_kept++;
    }
    else if(controller_4 == 0 && dice1 == 4){
        if (kept1 == 1 || kept1 == 2 || kept1 == 3 || kept1 == 4 || kept1 == 5 || kept1 ==
6)
            kept2 = 1;
        else
            kept1 = 1;
        controller_4 = 1;
        total_kept++;
    }
}

```

if ((dice2 == 1 || dice2 == 4) && (dice2 != 0) && (!controller\_1 || !controller\_4)){ // if dice is 1 or 4 and dice hadnt been kept before!

```

    if(controller_1 == 0 && dice2 == 1){
        if (kept1 == 1 || kept1 == 2 || kept1 == 3 || kept1 == 4 || kept1 == 5 || kept1 ==
6)
            kept2 = 2;
        else
            kept1 = 2;
        controller_1 = 1;
        total_kept++;
    }

```

```

    else if(controller_4 == 0 && dice2 == 4){
        if (kept1 == 1 || kept1 == 2 || kept1 == 3 || kept1 == 4 || kept1 == 5 || kept1 ==
6)
            kept2 = 2;
        else

```

```

        kept1 = 2;
        controller_4 = 1;
        total_kept++;
    }
}

```

if ((dice3 == 1 || dice3 == 4) && (dice3 != 0) && (!controller\_1 || !controller\_4)){ // if dice is 1 or 4 and dice hadnt been kept before!

```

        if(controller_1 == 0 && dice3 == 1){
            if (kept1 == 1 || kept1 == 2 || kept1 == 3 || kept1 == 4 || kept1 == 5 || kept1 ==
6)

```

```

                kept2 = 3;
            else
                kept1 = 3;
            controller_1 = 1;
            total_kept++;
        }

```

```

    else if(controller_4 == 0 && dice3 == 4){
        if (kept1 == 1 || kept1 == 2 || kept1 == 3 || kept1 == 4 || kept1 == 5 || kept1 ==
6)

```

```

            kept2 = 3;
        else
            kept1 = 3;
        controller_4 = 1;
        total_kept++;
    }

```

```

}

```

if ((dice4 == 1 || dice4 == 4) && (dice4 != 0) && (!controller\_1 || !controller\_4)){ // if dice is 1 or 4 and dice hadnt been kept before!

```

        if(controller_1 == 0 && dice4 == 1){
            if (kept1 == 1 || kept1 == 2 || kept1 == 3 || kept1 == 4 || kept1 == 5 || kept1 ==
6)
                kept2 = 4;
            else
                kept1 = 4;
            controller_1 = 1;
            total_kept++;
        }
        else if(controller_4 == 0 && dice4 == 4){
            if (kept1 == 1 || kept1 == 2 || kept1 == 3 || kept1 == 4 || kept1 == 5 || kept1 ==
6)
                kept2 = 4;
            else
                kept1 = 4;
            controller_4 = 1;
            total_kept++;
        }
    }
}

```

if ((dice5 == 1 || dice5 == 4) && (dice5 != 0) && (!controller\_1 || !controller\_4)){ // if dice is 1 or 4 and dice hadnt been kept before!

```

        if(controller_1 == 0 && dice5 == 1){
            if (kept1 == 1 || kept1 == 2 || kept1 == 3 || kept1 == 4 || kept1 == 5 || kept1 ==
6)
                kept2 = 5;
            else
                kept1 = 5;
            controller_1 = 1;
            total_kept++;
        }
    }
}

```

```

    }
    else if(controller_4 == 0 && dice5 == 4){
        if (kept1 == 1 || kept1 == 2 || kept1 == 3 || kept1 == 4 || kept1 == 5 || kept1 ==
6)
            kept2 = 5;
        else
            kept1 = 5;
        controller_4 = 1;
        total_kept++;
    }
}

```

if ((dice6 == 1 || dice6 == 4) && (dice6 != 0) && (!controller\_1 || !controller\_4)){ // if dice is 1 or 4 and dice hadnt been kept before!

```

    if(controller_1 == 0 && dice6 == 1){
        if (kept1 == 1 || kept1 == 2 || kept1 == 3 || kept1 == 4 || kept1 == 5 || kept1 ==
6)
            kept2 = 6;
        else
            kept1 = 6;
        controller_1 = 1;
        total_kept++;
    }
}

```

```

    else if(controller_4 == 0 && dice6 == 4){
        if (kept1 == 1 || kept1 == 2 || kept1 == 3 || kept1 == 4 || kept1 == 5 || kept1 ==
6)
            kept2 = 6;
        else
            kept1 = 6;
        controller_4 = 1;
    }
}

```

```

        total_kept++;
    }
}

if(total_kept == 1){ // if we found any of 1 or 4
    if(dice1 != 0)
        kept2 = 1;

    if (((biggest < dice1) && (kept1!=1)) && (dice1 != 0)){
        kept2 = 1;
        biggest = dice1;
    }

    if (((biggest < dice2) && (kept1!=2)) && (dice2 != 0)){
        kept2 = 2;
        biggest = dice2;
    }

    if (((biggest < dice3) && (kept1!=3)) && (dice3 != 0)){
        kept2 = 3;
        biggest = dice3;
    }

    if (((biggest < dice4) && (kept1!=4)) && (dice4 != 0)){
        kept2 = 4;
        biggest = dice4;
    }

    if (((biggest < dice5) && (kept1!=5)) && (dice5 != 0)){

```

```

        kept2 = 5;
        biggest = dice5;
    }

    if (((biggest < dice6) && (kept1!=6)) && (dice6 != 0)){
        kept2 = 6;
        biggest = dice6;
    }

    total_kept++;
}

else if (total_kept == 0){ // if we didnt find any 1 or 4
    if ((dice1 > biggest) && (dice1 != 0)){ //Simple algorithm that I wrote for finding maxs of
two values without using arrays, pointers. It lasts to line 701.
        biggest2 = biggest;
        biggest = dice1;

        kept1 = 1;
        kept2 = 0;
    }

    else if ((dice1 > biggest2) && (dice1 != 0)){
        biggest2 = dice1;
        kept2 = 1;
    }

    if ((dice2 > biggest) && (dice2 != 0)){
        biggest2 = biggest;
        biggest = dice2;
    }

```



```
        kept1 = 2;
        kept2 = 1;
    }
    else if ((dice2 > biggest2) && (dice2 != 0)){
        biggest2 = dice2;
        kept2 = 2;
    }
```

```
    if ((dice3 > biggest) && (dice3 != 0)){
        biggest2 = biggest;
        biggest = dice3;

        kept2 = kept1;
        kept1 = 3;
    }
```

```
    else if ((dice3 > biggest2) && (dice3 != 0)){
        biggest2 = dice3;
        kept2 = 3;
    }
```

```
    if ((dice4 > biggest) && (dice4 != 0)){
        biggest2 = biggest;
        biggest = dice4;

        kept2 = kept1;
        kept1 = 4;
    }
```

```
    else if ((dice4 > biggest2) && (dice4 != 0)){
        biggest2 = dice4;
```

```

        kept2 = 4;
    }

    if ((dice5 > biggest) && (dice5 != 0)){
        biggest2 = biggest;
        biggest = dice5;

        kept2 = kept1;
        kept1 = 5;
    }
    else if ((dice5 > biggest2) && (dice5 != 0)){
        biggest2 = dice5;
        kept2 = 5;
    }

    if ((dice6 > biggest) && (dice6 != 0)){
        biggest2 = biggest;
        biggest = dice6;

        kept2 = kept1;
        kept1 = 6;
    }
    else if ((dice6 > biggest2) && (dice6 != 0)){
        biggest2 = dice6;
        kept2 = 6;
    }

}

```

```

        if(controller == 0)
            return kept1;
        else if (controller == 1)
            return kept2;

    }

int play_user(void){
    int dice1, dice2, dice3, dice4, dice5, dice6, controller_1 = 0, controller_4 = 0;

    int keepIndex_1, keepIndex_2, score = 0, keepIndex_1_2, keepIndex_2_2, keepIndex_1_3 = 9,
    keepIndex_2_3;

    char choice;

    printf("Are you ready to play!\n");
    fflush(stdin);

    printf("Shall I roll them for you (Y/N)? ");
    scanf("%c",&choice);

    if(choice == 'N')
        return 0;
    else if (choice == 'Y'){
        dice1 = roll_a_dice();
        dice2 = roll_a_dice();
        dice3 = roll_a_dice();
        dice4 = roll_a_dice();
        dice5 = roll_a_dice();
        dice6 = roll_a_dice();

        printf("You got -> [Dice 1]: %d [Dice 2]: %d [Dice 3]: %d [Dice 4]: %d [Dice 5]: %d [Dice 6]: %d\n", dice1, dice2, dice3, dice4, dice5, dice6);

        printf("Which ones you want to keep? ");
    }
}

```

```
scanf("%d %d",&keepIndex_1,&keepIndex_2);
```

if (keepIndex\_1 == 1 || keepIndex\_2 == 1){ // controlling for if we kept 1 or 4, if we did change the flag! It lasts to line 765

```
    if (dice1 == 1)
        controller_1 = 1;
    else if (dice1 == 4)
        controller_4 = 1;
}
```

```
if (keepIndex_1 == 2 || keepIndex_2 == 2){
    if (dice2 == 1)
        controller_1 = 1;
    else if (dice2 == 4)
        controller_4 = 1;
}
```

```
if (keepIndex_1 == 3 || keepIndex_2 == 3){
    if (dice3 == 1)
        controller_1 = 1;
    else if (dice3 == 4)
        controller_4 = 1;
}
```

```
if (keepIndex_1 == 4 || keepIndex_2 == 4){
    if (dice4 == 1)
        controller_1 = 1;
    else if (dice4 == 4)
        controller_4 = 1;
}
```

```
}
```

```
if (keepIndex_1 == 5 || keepIndex_2 == 5){
```

```
    if (dice5 == 1)
```

```
        controller_1 = 1;
```

```
    else if (dice5 == 4)
```

```
        controller_4 = 1;
```

```
}
```

```
if (keepIndex_1 == 6 || keepIndex_2 == 6){
```

```
    if (dice6 == 1)
```

```
        controller_1 = 1;
```

```
    else if (dice6 == 4)
```

```
        controller_4 = 1;
```

```
}
```

```
    if (((controller_1 == 1) && (controller_4 == 0)) || ((controller_1 == 0) && (controller_4 == 1))) { // if user just selects one dice which value's is 1 or 4
```

```
        if((keepIndex_1 == 1 && dice1 == 1) || (keepIndex_1 == 1 && dice1 == 4)){ // score increasing appropriately. It last to line 931.
```

```
            if (keepIndex_2 == 2)
```

```
                score += dice2;
```

```
            if (keepIndex_2 == 3)
```

```
                score += dice3;
```

```
            if (keepIndex_2 == 4)
```

```
                score += dice4;
```

```
            if (keepIndex_2 == 5)
```

```
                score += dice5;
```

```
            if (keepIndex_2 == 6)
```

```

        score += dice6;
    }
else if((keepIndex_2 == 1 && dice1 == 1) || (keepIndex_2 == 1 && dice1 == 4)){
    if (keepIndex_1 == 2)
        score += dice2;
    if (keepIndex_1 == 3)
        score += dice3;
    if (keepIndex_1 == 4)
        score += dice4;
    if (keepIndex_1 == 5)
        score += dice5;
    if (keepIndex_1 == 6)
        score += dice6;
}

```

```

if((keepIndex_1 == 2 && dice2 == 1) || (keepIndex_1 == 2 && dice2 == 4)){
    if (keepIndex_2 == 1)
        score += dice1;
    if (keepIndex_2 == 3)
        score += dice3;
    if (keepIndex_2 == 4)
        score += dice4;
    if (keepIndex_2 == 5)
        score += dice5;
    if (keepIndex_2 == 6)
        score += dice6;
}
else if((keepIndex_2 == 2 && dice2 == 1) || (keepIndex_2 == 2 && dice2 == 4)){
    if (keepIndex_1 == 1)

```

```

        score += dice1;
    if (keepIndex_1 == 3)
        score += dice3;
    if (keepIndex_1 == 4)
        score += dice4;
    if (keepIndex_1 == 5)
        score += dice5;
    if (keepIndex_1 == 6)
        score += dice6;
}

if((keepIndex_1 == 3 && dice3 == 1) || (keepIndex_1 == 3 && dice3 == 4)){
    if (keepIndex_2 == 1)
        score += dice1;
    if (keepIndex_2 == 2)
        score += dice2;
    if (keepIndex_2 == 4)
        score += dice4;
    if (keepIndex_2 == 5)
        score += dice5;
    if (keepIndex_2 == 6)
        score += dice6;
}

else if((keepIndex_2 == 3 && dice3 == 1) || (keepIndex_2 == 3 && dice3 == 4)){
    if (keepIndex_1 == 1)
        score += dice1;
    if (keepIndex_1 == 2)
        score += dice2;
    if (keepIndex_1 == 4)

```

```
        score += dice4;
    if (keepIndex_1 == 5)
        score += dice5;
    if (keepIndex_1 == 6)
        score += dice6;
}
```

```
if((keepIndex_1 == 4 && dice4 == 1) || (keepIndex_1 == 4 && dice4 == 4)){
    if (keepIndex_2 == 1)
        score += dice1;
    if (keepIndex_2 == 2)
        score += dice2;
    if (keepIndex_2 == 3)
        score += dice3;
    if (keepIndex_2 == 5)
        score += dice5;
    if (keepIndex_2 == 6)
        score += dice6;
}
```

```
else if((keepIndex_2 == 4 && dice4 == 1) || (keepIndex_2 == 4 && dice4 == 4)){
    if (keepIndex_1 == 1)
        score += dice1;
    if (keepIndex_1 == 2)
        score += dice2;
    if (keepIndex_1 == 3)
        score += dice3;
    if (keepIndex_1 == 5)
        score += dice5;
}
```



```

        if (keepIndex_1 == 6)
            score += dice6;
    }

    if((keepIndex_1 == 5 && dice5 == 1) || (keepIndex_1 == 5 && dice5 == 4)){
        if (keepIndex_2 == 1)
            score += dice1;
        if (keepIndex_2 == 2)
            score += dice2;
        if (keepIndex_2 == 3)
            score += dice3;
        if (keepIndex_2 == 4)
            score += dice4;
        if (keepIndex_2 == 6)
            score += dice6;
    }

    else if((keepIndex_2 == 5 && dice5 == 1) || (keepIndex_2 == 5 && dice5 == 4)){
        if (keepIndex_1 == 1)
            score += dice1;
        if (keepIndex_1 == 2)
            score += dice2;
        if (keepIndex_1 == 3)
            score += dice3;
        if (keepIndex_1 == 4)
            score += dice4;
        if (keepIndex_1 == 6)
            score += dice6;
    }

```

```

if((keepIndex_1 == 6 && dice6 == 1) || (keepIndex_1 == 6 && dice6 == 4)){
    if (keepIndex_2 == 1)
        score += dice1;
    if (keepIndex_2 == 2)
        score += dice2;
    if (keepIndex_2 == 3)
        score += dice3;
    if (keepIndex_2 == 4)
        score += dice4;
    if (keepIndex_2 == 5)
        score += dice5;
}
else if((keepIndex_2 == 6 && dice6 == 1) || (keepIndex_2 == 6 && dice6 == 4)){
    if (keepIndex_1 == 1)
        score += dice1;
    if (keepIndex_1 == 2)
        score += dice2;
    if (keepIndex_1 == 3)
        score += dice3;
    if (keepIndex_1 == 4)
        score += dice4;
    if (keepIndex_1 == 5)
        score += dice5;
}
}

```

4

```
if(controller_1 == 0 && controller_4 == 0){ // the condition that user didnt choose 1 and
```

```
    if(keepIndex_1 == 1 || keepIndex_2 == 1)
```

```
        score += dice1;
```

```
    if(keepIndex_1 == 2 || keepIndex_2 == 2)
```

```
        score += dice2;
```

```
    if(keepIndex_1 == 3 || keepIndex_2 == 3)
```

```
        score += dice3;
```

```
    if(keepIndex_1 == 4 || keepIndex_2 == 4)
```

```
        score += dice4;
```

```
    if(keepIndex_1 == 5 || keepIndex_2 == 5)
```

```
        score += dice5;
```

```
    if(keepIndex_1 == 6 || keepIndex_2 == 6)
```

```
        score += dice6;
```

```
}
```

```
fflush(stdin);
```

```
printf("Shall I roll the remaining for you (Y/N)? ");
```

```
scanf("%c",&choice);
```

```
if (choice == 'N'){
```

```
    if (controller_1 == 1 && controller_4 == 1) // if we both find 1 and 4 already,  
return score, if not return 0
```

```
        return score;
```

```
    else
```

```
        return 0;
    }
```

```
else if (choice == 'Y'){
```

```
    dice1 = roll_a_dice();
```

```
    dice2 = roll_a_dice();
```

```
    dice3 = roll_a_dice();
```

```
    dice4 = roll_a_dice();
```

```
    dice5 = roll_a_dice();
```

```
    dice6 = roll_a_dice();
```

dice values

```
    if (keepIndex_1 == 1 || keepIndex_2 == 1) // for making 0 for the previous kept
```

```
        dice1 = 0;
```

```
    if (keepIndex_1 == 2 || keepIndex_2 == 2)
```

```
        dice2 = 0;
```

```
    if (keepIndex_1 == 3 || keepIndex_2 == 3)
```

```
        dice3 = 0;
```

```
    if (keepIndex_1 == 4 || keepIndex_2 == 4)
```

```
        dice4 = 0;
```

```
    if (keepIndex_1 == 5 || keepIndex_2 == 5)
```

```
        dice5 = 0;
```

```
if (keepIndex_1 == 6 || keepIndex_2 == 6)
    dice6 = 0;
```

```
printf("You got -> ");
if (dice1 != 0)
    printf("[Dice 1]: %d ",dice1);
if (dice2 != 0)
    printf("[Dice 2]: %d ",dice2);
if (dice3 != 0)
    printf("[Dice 3]: %d ",dice3);
if (dice4 != 0)
    printf("[Dice 4]: %d ",dice4);
if (dice5 != 0)
    printf("[Dice 5]: %d ",dice5);
if (dice6 != 0)
    printf("[Dice 6]: %d",dice6);
```

```
printf("\nWhich ones you want to keep? ");
scanf("%d %d",&keepIndex_1_2,&keepIndex_2_2);
```

```
if (((controller_1 == 1) && (controller_4 == 0)) || ((controller_1 == 0) &&
(controller_4 == 1))) { // if user just selects one dice which value's is 1 or 4
```

```
        if((keepIndex_1_2 == 1 && dice1 == 1) || (keepIndex_1_2 == 1 && dice1 == 4)){//I used the same algorithm that I used above.
```

```
            if (keepIndex_2_2 == 2)
```

```
                score += dice2;
```

```
            if (keepIndex_2_2 == 3)
```

```
                score += dice3;
```

```
            if (keepIndex_2_2 == 4)
```

```
                score += dice4;
```

```
            if (keepIndex_2_2 == 5)
```

```
                score += dice5;
```

```
            if (keepIndex_2_2 == 6)
```

```
                score += dice6;
```

```
        }
```

```
    else if((keepIndex_2_2 == 1 && dice1 == 1) || (keepIndex_2_2 == 1 && dice1 == 4)){
```

```
        if (keepIndex_1_2 == 2)
```

```
            score += dice2;
```

```
        if (keepIndex_1_2 == 3)
```

```
            score += dice3;
```

```
        if (keepIndex_1_2 == 4)
```

```
            score += dice4;
```

```
        if (keepIndex_1_2 == 5)
```

```
            score += dice5;
```

```
        if (keepIndex_1_2 == 6)
```

```
            score += dice6;
```

```
    }
```

```
    if((keepIndex_1_2 == 2 && dice2 == 1) || (keepIndex_1_2 == 2 && dice2 == 4)){
```

```
        if (keepIndex_2_2 == 1)
```

```

        score += dice1;
    if (keepIndex_2_2 == 3)
        score += dice3;
    if (keepIndex_2_2 == 4)
        score += dice4;
    if (keepIndex_2_2 == 5)
        score += dice5;
    if (keepIndex_2_2 == 6)
        score += dice6;
}
else if((keepIndex_2_2 == 2 && dice2 == 1) || (keepIndex_2_2 == 2 &&
dice2 == 4)){

    if (keepIndex_1_2 == 1)
        score += dice1;
    if (keepIndex_1_2 == 3)
        score += dice3;
    if (keepIndex_1_2 == 4)
        score += dice4;
    if (keepIndex_1_2 == 5)
        score += dice5;
    if (keepIndex_1_2 == 6)
        score += dice6;
}

if((keepIndex_1_2 == 3 && dice3 == 1) || (keepIndex_1_2 == 3 && dice3
== 4)){

    if (keepIndex_2_2 == 1)
        score += dice1;
    if (keepIndex_2_2 == 2)
        score += dice2;

```

```

        if (keepIndex_2_2 == 4)
            score += dice4;
        if (keepIndex_2_2 == 5)
            score += dice5;
        if (keepIndex_2_2 == 6)
            score += dice6;
    }
    else if((keepIndex_2_2 == 3 && dice3 == 1) || (keepIndex_2_2 == 3 &&
dice3 == 4)){

        if (keepIndex_1_2 == 1)
            score += dice1;
        if (keepIndex_1_2 == 2)
            score += dice2;
        if (keepIndex_1_2 == 4)
            score += dice4;
        if (keepIndex_1_2 == 5)
            score += dice5;
        if (keepIndex_1_2 == 6)
            score += dice6;
    }

    if((keepIndex_1_2 == 4 && dice4 == 1) || (keepIndex_1_2 == 4 && dice4
== 4)){

        if (keepIndex_2_2 == 1)
            score += dice1;
        if (keepIndex_2_2 == 2)
            score += dice2;
        if (keepIndex_2_2 == 3)
            score += dice3;
    }

```



```

        if (keepIndex_2_2 == 5)
            score += dice5;
        if (keepIndex_2_2 == 6)
            score += dice6;
    }
    else if((keepIndex_2_2 == 4 && dice4 == 1) || (keepIndex_2_2 == 4 &&
dice4 == 4)){

        if (keepIndex_1_2 == 1)
            score += dice1;
        if (keepIndex_1_2 == 2)
            score += dice2;
        if (keepIndex_1_2 == 3)
            score += dice3;
        if (keepIndex_1_2 == 5)
            score += dice5;
        if (keepIndex_1_2 == 6)
            score += dice6;
    }

    if((keepIndex_1_2 == 5 && dice5 == 1) || (keepIndex_1_2 == 5 && dice5
== 4)){

        if (keepIndex_2_2 == 1)
            score += dice1;
        if (keepIndex_2_2 == 2)
            score += dice2;
        if (keepIndex_2_2 == 3)
            score += dice3;
        if (keepIndex_2_2 == 4)
            score += dice4;
    }

```

```

        if (keepIndex_2_2 == 6)
            score += dice6;
    }
    else if((keepIndex_2_2 == 5 && dice5 == 1) || (keepIndex_2_2 == 5 &&
dice5 == 4)){

        if (keepIndex_1_2 == 1)
            score += dice1;
        if (keepIndex_1_2 == 2)
            score += dice2;
        if (keepIndex_1_2 == 3)
            score += dice3;
        if (keepIndex_1_2 == 4)
            score += dice4;
        if (keepIndex_1_2 == 6)
            score += dice6;
    }

    if((keepIndex_1_2 == 6 && dice6 == 1) || (keepIndex_1_2 == 6 && dice6
== 4)){

        if (keepIndex_2_2 == 1)
            score += dice1;
        if (keepIndex_2_2 == 2)
            score += dice2;
        if (keepIndex_2_2 == 3)
            score += dice3;
        if (keepIndex_2_2 == 4)
            score += dice4;
        if (keepIndex_2_2 == 5)
            score += dice5;
    }

```

```

    }
    else if((keepIndex_2_2 == 6 && dice6 == 1) || (keepIndex_2_2 == 6 &&
dice6 == 4)){

        if (keepIndex_1_2 == 1)
            score += dice1;
        if (keepIndex_1_2 == 2)
            score += dice2;
        if (keepIndex_1_2 == 3)
            score += dice3;
        if (keepIndex_2_2 == 4)
            score += dice4;
        if (keepIndex_1_2 == 5)
            score += dice5;
    }
}

```

if(controller\_1 == 0 && controller\_4 == 0 || (controller\_1 == 1 && controller\_4 == 1)){ //  
the condition user didnt choose 1 and 4 or did choose 1 and 4

```

    if(keepIndex_1_2 == 1 || keepIndex_2_2 == 1)
        score += dice1;

```

```

    if(keepIndex_1_2 == 2 || keepIndex_2_2 == 2)
        score += dice2;

```

```

    if(keepIndex_1_2 == 3 || keepIndex_2_2 == 3)
        score += dice3;

```

```

    if(keepIndex_1_2 == 4 || keepIndex_2_2 == 4)
        score += dice4;

```

```
        if(keepIndex_1_2 == 5 || keepIndex_2_2 == 5)
            score += dice5;

        if(keepIndex_1_2 == 6 || keepIndex_2_2 == 6)
            score += dice6;
    }
```

if (keepIndex\_1\_2 == 1 || keepIndex\_2\_2 == 1){ // this 6 if statments for  
updating the controllers

```
        if (dice1 == 1)
            controller_1 = 1;
        else if (dice1 == 4)
            controller_4 = 1;
    }
```

```
    if (keepIndex_1_2 == 2 || keepIndex_2_2 == 2){
        if (dice2 == 1)
            controller_1 = 1;
        else if (dice2 == 4)
            controller_4 = 1;
    }
```

```
    if (keepIndex_1_2 == 3 || keepIndex_2_2 == 3){
        if (dice3 == 1)
            controller_1 = 1;
```

```
        else if (dice3 == 4)
            controller_4 = 1;
    }
```

```
if (keepIndex_1_2 == 4 || keepIndex_2_2 == 4){
    if (dice4 == 1)
        controller_1 = 1;
    else if (dice4 == 4)
        controller_4 = 1;
}
```

```
if (keepIndex_1_2 == 5 || keepIndex_2_2 == 5){
    if (dice5 == 1)
        controller_1 = 1;
    else if (dice5 == 4)
        controller_4 = 1;
}
```

```
if (keepIndex_1_2 == 6 || keepIndex_2_2 == 6){
    if (dice6 == 1)
        controller_1 = 1;
    else if (dice6 == 4)
        controller_4 = 1;
}
```

```
fflush(stdin);
printf("Shall I roll the remaining for you (Y/N)? ");
scanf("%c",&choice);
```

```

if (choice == 'N'){
    if (controller_1 == 1 && controller_1 == 1)
        return score;
    else
        return 0;
}
else if (choice == 'Y'){

    dice1 = roll_a_dice();
    dice2 = roll_a_dice();
    dice3 = roll_a_dice();
    dice4 = roll_a_dice();
    dice5 = roll_a_dice();
    dice6 = roll_a_dice();

    if (keepIndex_1 == 1 || keepIndex_2 == 1 || keepIndex_1_2 == 1 ||
keepIndex_2_2 == 1) // making dice values 0 if previously used
        dice1 = 0;

    if (keepIndex_1 == 2 || keepIndex_2 == 2 || keepIndex_1_2 == 2 ||
keepIndex_2_2 == 2)
        dice2 = 0;

    if (keepIndex_1 == 3 || keepIndex_2 == 3 || keepIndex_1_2 == 3 ||
keepIndex_2_2 == 3)
        dice3 = 0;

```

```
keepIndex_2_2 == 4) if (keepIndex_1 == 4 || keepIndex_2 == 4 || keepIndex_1_2 == 4 ||
```

```
    dice4 = 0;
```

```
keepIndex_2_2 == 5) if (keepIndex_1 == 5 || keepIndex_2 == 5 || keepIndex_1_2 == 5 ||
```

```
    dice5 = 0;
```

```
keepIndex_2_2 == 6) if (keepIndex_1 == 6 || keepIndex_2 == 6 || keepIndex_1_2 == 6 ||
```

```
    dice6 = 0;
```

```
printf("You got -> ");
```

```
if (dice1 != 0)
```

```
    printf("[Dice 1]: %d ",dice1);
```

```
if (dice2 != 0)
```

```
    printf("[Dice 2]: %d ",dice2);
```

```
if (dice3 != 0)
```

```
    printf("[Dice 3]: %d ",dice3);
```

```
if (dice4 != 0)
```

```
    printf("[Dice 4]: %d ",dice4);
```

```
if (dice5 != 0)
```

```
    printf("[Dice 5]: %d ",dice5);
```

```
if (dice6 != 0)
```

```
    printf("[Dice 6]: %d",dice6);
```

```
if(dice1 != 0){ // this 6 if statements for setting the last two indexes to  
keepIndex_1_3 and keepIndex_2_3
```

```
        if (keepIndex_1_3 == 9)
            keepIndex_1_3 = 1;
        else
            keepIndex_2_3 = 1;
    }
```

```
if(dice2 != 0){
    if (keepIndex_1_3 == 9)
        keepIndex_1_3 = 2;
    else
        keepIndex_2_3 = 2;
}
```

```
if(dice3 != 0){
    if (keepIndex_1_3 == 9)
        keepIndex_1_3 = 3;
    else
        keepIndex_2_3 = 3;
}
```

```
if(dice4 != 0){
    if (keepIndex_1_3 == 9)
        keepIndex_1_3 = 4;
    else
        keepIndex_2_3 = 4;
}
```

```
if(dice5 != 0){
```



```
        if (keepIndex_1_3 == 9)
            keepIndex_1_3 = 5;
        else
            keepIndex_2_3 = 5;
    }
```

```
if(dice6 != 0){
    if (keepIndex_1_3 == 9)
        keepIndex_1_3 = 6;
    else
        keepIndex_2_3 = 6;
}
```

```
        if (((controller_1 == 1) && (controller_4 == 0)) || ((controller_1 == 0) &&
(controller_4 == 1))) { // if user just selects one dice which value's is 1 or 4
```

```
            if ((keepIndex_1_3 == 1 && dice1 == 1) || (keepIndex_1_3 == 1
&& dice1 == 4)) {
```

```
                if (keepIndex_2_3 == 2)
```

```
                    score += dice2;
```

```
                if (keepIndex_2_3 == 3)
```

```
                    score += dice3;
```

```
                if (keepIndex_2_3 == 4)
```

```
                    score += dice4;
```

```
                if (keepIndex_2_3 == 5)
```

```
                    score += dice5;
```

```
                if (keepIndex_2_3 == 6)
```

```

        score += dice6;
    }
    else if((keepIndex_2_3 == 1 && dice1 == 1) || (keepIndex_2_3
== 1 && dice1 == 4)){

        if (keepIndex_1_3 == 2)
            score += dice2;
        if (keepIndex_1_3 == 3)
            score += dice3;
        if (keepIndex_1_3 == 4)
            score += dice4;
        if (keepIndex_1_3 == 5)
            score += dice5;
        if (keepIndex_1_3 == 6)
            score += dice6;
    }

    if((keepIndex_1_3 == 2 && dice2 == 1) || (keepIndex_1_3 == 2
&& dice2 == 4)){

        if (keepIndex_2_3 == 1)
            score += dice1;
        if (keepIndex_2_3 == 3)
            score += dice3;
        if (keepIndex_2_3 == 4)
            score += dice4;
        if (keepIndex_2_3 == 5)
            score += dice5;
        if (keepIndex_2_3 == 6)
            score += dice6;
    }

```

```

== 2 && dice2 == 4)){
    else if((keepIndex_2_3 == 2 && dice2 == 1) || (keepIndex_2_3
        if (keepIndex_1_3 == 1)
            score += dice1;
        if (keepIndex_1_3 == 3)
            score += dice3;
        if (keepIndex_1_3 == 4)
            score += dice4;
        if (keepIndex_1_3 == 5)
            score += dice5;
        if (keepIndex_1_3 == 6)
            score += dice6;
    }

```

```

&& dice3 == 4)){
    if((keepIndex_1_3 == 3 && dice3 == 1) || (keepIndex_1_3 == 3
        if (keepIndex_2_3 == 1)
            score += dice1;
        if (keepIndex_2_3 == 2)
            score += dice2;
        if (keepIndex_2_3 == 4)
            score += dice4;
        if (keepIndex_2_3 == 5)
            score += dice5;
        if (keepIndex_2_3 == 6)
            score += dice6;
    }

```

```

== 3 && dice3 == 4)){
    else if((keepIndex_2_3 == 3 && dice3 == 1) || (keepIndex_2_3
        if (keepIndex_1_3 == 1)

```

```

        score += dice1;
    if (keepIndex_1_3 == 2)
        score += dice2;
    if (keepIndex_1_3 == 4)
        score += dice4;
    if (keepIndex_1_3 == 5)
        score += dice5;
    if (keepIndex_1_3 == 6)
        score += dice6;
}

```

```

if((keepIndex_1_3 == 4 && dice4 == 1) || (keepIndex_1_3 == 4
&& dice4 == 4)){

```

```

    if (keepIndex_2_3 == 1)
        score += dice1;
    if (keepIndex_2_3 == 2)
        score += dice2;
    if (keepIndex_2_3 == 3)
        score += dice3;
    if (keepIndex_2_3 == 5)
        score += dice5;
    if (keepIndex_2_3 == 6)
        score += dice6;
}

```

```

else if((keepIndex_2_3 == 4 && dice4 == 1) || (keepIndex_2_3
== 4 && dice4 == 4)){

```

```

    if (keepIndex_1_3 == 1)
        score += dice1;
    if (keepIndex_1_3 == 2)

```

```

        score += dice2;
    if (keepIndex_1_3 == 3)
        score += dice3;
    if (keepIndex_1_3 == 5)
        score += dice5;
    if (keepIndex_1_3 == 6)
        score += dice6;
}

```

```

    if((keepIndex_1_3 == 5 && dice5 == 1) || (keepIndex_1_3 == 5
&& dice5 == 4)){

```

```

        if (keepIndex_2_3 == 1)
            score += dice1;
        if (keepIndex_2_3 == 2)
            score += dice2;
        if (keepIndex_2_3 == 3)
            score += dice3;
        if (keepIndex_2_3 == 4)
            score += dice4;
        if (keepIndex_2_3 == 6)
            score += dice6;
    }

```

```

    else if((keepIndex_2_3 == 5 && dice5 == 1) || (keepIndex_2_3
== 5 && dice5 == 4)){

```

```

        if (keepIndex_1_3 == 1)
            score += dice1;
        if (keepIndex_1_3 == 2)
            score += dice2;
        if (keepIndex_1_3 == 3)

```

```

        score += dice3;
    if (keepIndex_1_3 == 4)
        score += dice4;
    if (keepIndex_1_3 == 6)
        score += dice6;
}

```

```

if((keepIndex_1_3 == 6 && dice6 == 1) || (keepIndex_1_3 == 6
&& dice6 == 4)){

```

```

    if (keepIndex_2_3 == 1)
        score += dice1;
    if (keepIndex_2_3 == 2)
        score += dice2;
    if (keepIndex_2_3 == 3)
        score += dice3;
    if (keepIndex_2_3 == 4)
        score += dice4;
    if (keepIndex_2_3 == 5)
        score += dice5;
}

```

```

else if((keepIndex_2_3 == 6 && dice6 == 1) || (keepIndex_2_3
== 6 && dice6 == 4)){

```

```

    if (keepIndex_1_3 == 1)
        score += dice1;
    if (keepIndex_1_3 == 2)
        score += dice2;
    if (keepIndex_1_3 == 3)
        score += dice3;
    if (keepIndex_1_3 == 4)

```

```
        score += dice4;
        if (keepIndex_1_3 == 5)
            score += dice5;
    }
}
```

```
        if((controller_1 == 0 && controller_4 == 0) || (controller_1 == 1 && controller_4 == 1)){ // the condition user didnt choose 1 and 4 or did choose 1 and 4
```

```
            if(keepIndex_1_3 == 1 || keepIndex_2_3 == 1)
                score += dice1;
```

```
            if(keepIndex_1_3 == 2 || keepIndex_2_3 == 2)
                score += dice2;
```

```
            if(keepIndex_1_3 == 3 || keepIndex_2_3 == 3)
                score += dice3;
```

```
            if(keepIndex_1_3 == 4 || keepIndex_2_3 == 4)
                score += dice4;
```

```
            if(keepIndex_1_3 == 5 || keepIndex_2_3 == 5)
                score += dice5;
```

```
            if(keepIndex_1_3 == 6 || keepIndex_2_3 == 6)
                score += dice6;
```

```
        }
```

for updating the controllers

```
if (keepIndex_1_3 == 1 || keepIndex_2_3 == 1){ // this 6 if statements
```

```
    if (dice1 == 1)
        controller_1 = 1;
    else if (dice1 == 4)
        controller_4 = 1;
}
```

```
if (keepIndex_1_3 == 2 || keepIndex_2_3 == 2){
    if (dice2 == 1)
        controller_1 = 1;
    else if (dice2 == 4)
        controller_4 = 1;
}
```

```
if (keepIndex_1_3 == 3 || keepIndex_2_3 == 3){
    if (dice3 == 1)
        controller_1 = 1;
    else if (dice3 == 4)
        controller_4 = 1;
}
```

```
if (keepIndex_1_3 == 4 || keepIndex_2_3 == 4){
    if (dice4 == 1)
        controller_1 = 1;
    else if (dice4 == 4)
        controller_4 = 1;
}
```



```

        if (keepIndex_1_3 == 5 || keepIndex_2_3 == 5){
            if (dice5 == 1)
                controller_1 = 1;
            else if (dice5 == 4)
                controller_4 = 1;
        }

        if (keepIndex_1_3 == 6 || keepIndex_2_3 == 6){
            if (dice6 == 1)
                controller_1 = 1;
            else if (dice6 == 4)
                controller_4 = 1;
        }

        if(controller_1 == 0 || controller_4 == 0)
            score = 0;

        return score;

    }
    else
        printf("\n\nPlease enter a valid choice!!!\n\n");

}
else
    printf("\n\nPlease enter a valid choice!!!\n\n");

```

```
    }  
    else  
        printf("\n\nPlease enter a valid choice!!!\n\n");  
}
```

```
void scoresheet(int score_comp, int score_your){  
    printf("Our scoresheet:\n");  
    printf("=====\n");  
    printf("My score \tYour score\n");  
    printf("%d \t\t%d\n\n", score_comp, score_your);  
  
}
```