

```

/*****
/*HW03_part3.c
/*
/*Written by Mustafa Akilli on March 8, 2015
/*
/*Description
/*
/* Draw a vertical diagram of a bouncing ball
/*Inputs:
/* -First Height
/* -Feet Height
/* -The Peak Point
/* -The Path Point
/*Outputs:
/* -Diagram
/* -Total Number of The Character Used
/*****
/*
/*-----*/
/* Includes
#include <stdio.h>
/*-----*/

#define ONE 1
#define TWO 2

int draw_ver_diag_of_bb(int first_height,int feet_height,char the_peak_point
,char the_path_point);
int draw_diag_step(int first_height,int feet_height,char the_peak_point
,char the_path_point);
int finish_diag(int length);

int
main(void){

    int first_height,feet_height;
    char the_peak_point,the_path_point;
    int first_test,second_test,third_test;

    first_test = draw_ver_diag_of_bb(4,3,'0','*');
    second_test = draw_ver_diag_of_bb(3,2,'D','+');
    third_test = draw_ver_diag_of_bb(5,3,'B','/');

    printf("First diagram return :%d\n",first_test);
    printf("Second diagram return :%d\n",second_test);
    printf("Third diagram return :%d\n",third_test);

    return 0;

}

/*Guessing An Integer Number*/
int draw_ver_diag_of_bb(int first_height,int feet_height,char the_peak_point
,char the_path_point){

    int number_of_character=0;

    printf("\n");

    while(first_height>=ONE){

        draw_diag_step(first_height,feet_height,the_peak_point,the_path_point);
        number_of_character += TWO*first_height*feet_height+ONE;
        --first_height;
    }

    finish_diag(25);

    return number_of_character;

}

```

```
/*returns the number of the character used as peak points and path points*/
/*print the diagram*/
int draw_diag_step(int first_height,int feet_height,char the_peak_point
,char the_path_point){

    int control_variable=ONE;
    int control_variable_2=ONE;
    int fixed_first_height ,fixed_feet_height,temp_fixed_feet_height;
    int space_control=0;

    fixed_feet_height = feet_height;
    fixed_first_height = first_height;

    printf("l");

    /*First Part of Bouncing Ball*/
    while(control_variable<=fixed_first_height){

        control_variable_2=ONE;

        while( control_variable_2<=fixed_feet_height){
            printf("%c",the_path_point);
            ++ control_variable_2;
        }
        printf("\n");
        printf("l");
        space_control=ONE;
        while(space_control<=feet_height){
            printf(" ");
            ++space_control;
        }
        feet_height+=fixed_feet_height;
        ++control_variable;
    }

    feet_height-=fixed_feet_height;
    while(space_control<=feet_height){
        printf(" ");
        ++space_control;
    }

    printf("%c\n",the_peak_point);

    /*Second Part of Bouncing Ball*/

    control_variable=ONE;

    while(control_variable<=fixed_first_height){

        control_variable_2=ONE;

        printf("l");
        feet_height-=fixed_feet_height;
        space_control=ONE;
        while(space_control<=feet_height){
            printf(" ");
            ++space_control;
        }

        temp_fixed_feet_height = fixed_feet_height;
        while(temp_fixed_feet_height>=ONE){

            printf("%c",the_path_point);
            --temp_fixed_feet_height;
        }

        printf("\n");
        ++control_variable;
    }
}
```

```
    return (TWO*first_height*feet_height)+ONE;
}

/*print the end of the diagram by drawing the bottom axes.*/
int finish_diag(int length){

    printf("L");

    while(length>=ONE){
        printf("-");
        --length;
    }
    printf(">\n");
    return 1;
}
/*#####*/
/*                                End of HW03_part3.c                                */
/*#####*/
```