Practical File
Of

Course Code: CSEG1041
School of Computer Science

Submitted By: Submitted To:
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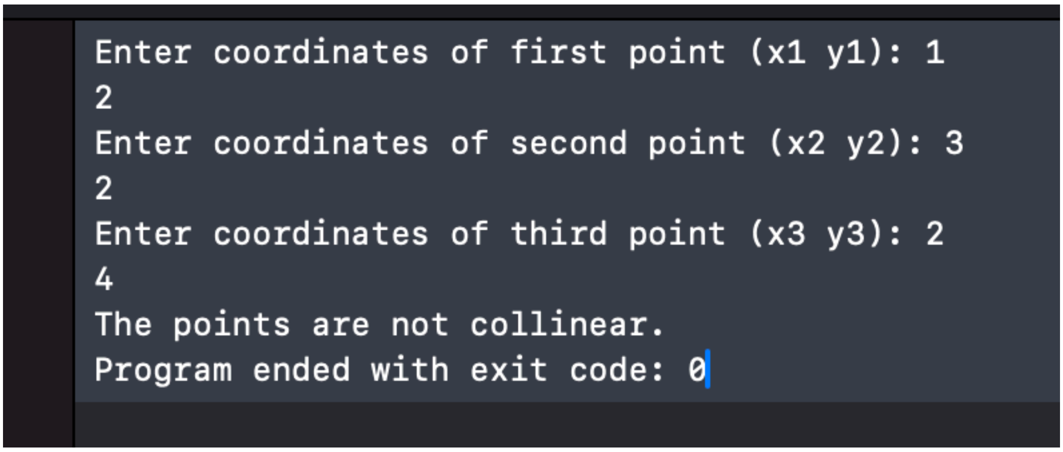
```
//  Created by Dyuti sharma on 01/10/25.


//3.4 WAP to check if three points (x1,y1),(x2,y2)and (x3,y3) are 
collinear or not
//  Created by Dyuti sharma on 13/09/25.
//
#include <stdio.h>

int main() {
    int x1, y1, x2, y2, x3, y3;

    printf("Enter coordinates of first point (x1 y1): ");
    scanf("%d %d", &x1, &y1);

    printf("Enter coordinates of second point (x2 y2): ");
    scanf("%d %d", &x2, &y2);

    printf("Enter coordinates of third point (x3 y3): ");
    scanf("%d %d", &x3, &y3);

    // Using area of triangle formula
    int area = (x1∗(y2 − y3) + x2∗(y3 − y1) + x3∗(y1 − y2));

    if (area == 0)
        printf("The points are collinear.\n");
    else
        printf("The points are not collinear.\n");

    return 0;
}
```

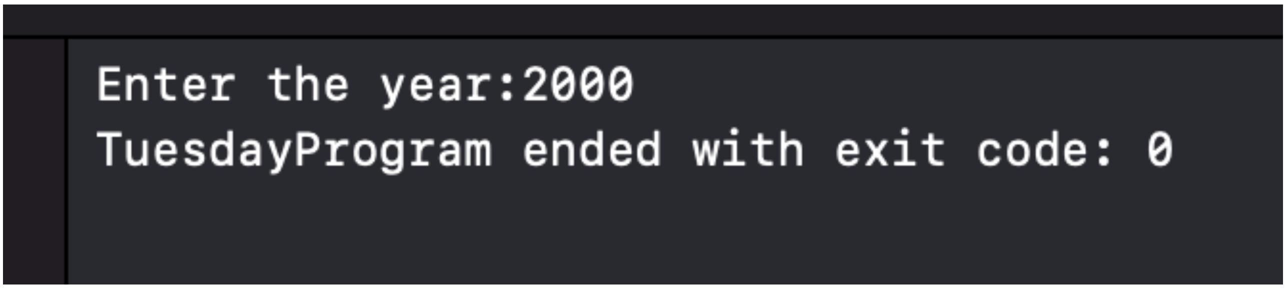
Output:



```
Enter coordinates of first point (x1 y1): 1
2
Enter coordinates of second point (x2 y2): 3
2
Enter coordinates of third point (x3 y3): 2
4
The points are not collinear.
Program ended with exit code: 0
```

```c
//  Created by Dyuti sharma on 01/10/25.

/* Experiment 3.1: Conditional Statements
5. According to the Gregorian calendar, it was Monday on the date 
01/01/01. If Any year is input through the keyboard write a 
program to find out what is the day on 1st January of this year.*/
#include<stdio.h>
int main()
{

    int yr, i, day=0, a;
    printf("Enter the year:"); scanf("%d", &yr);
    for(i=1; i<yr; i++)
    {
        if(((i%4==0) && (i%100!=0)) && (i%400))
        {
            day=day+366;
        }
        else
        {
            day=day+365;
        }
    }
    a=day%7;
    switch (a)
    {
        case 0:
            printf("Monday");
            break;
        case 1:
            printf("Tuesday");
            break;
        case 2:
            printf("Wednesday");
            break;
        case 3:
            printf("Thursday");
            break;
        case 4:
            printf("Friday");
            break;
        case 5:
            printf("Saturday");
            break;
        default:
            printf("Sunday");

    }
    return 0;
}
```

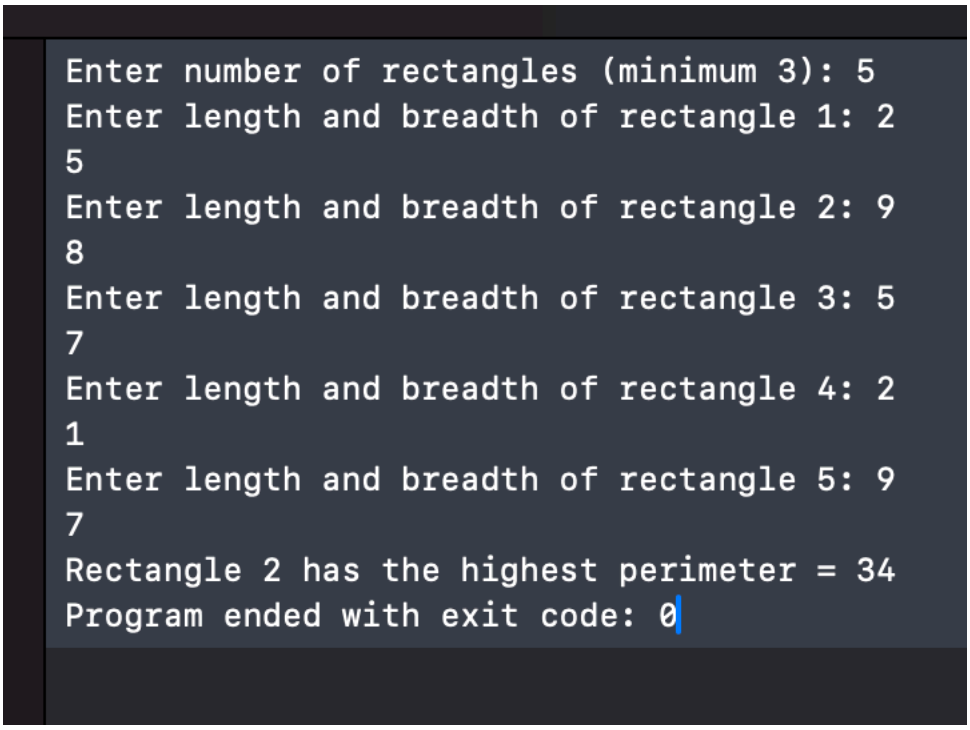
`Output:`



```
Enter the year:2000
TuesdayProgram ended with exit code: 0
```

```
//  Created by Dyuti sharma on 02/10/25.


// 3.5 WAP to find out what is the day on 1st January of a given 
year,
// assuming 01/01/01 was a Monday.

// 3.6. WAP using ternary operator, the user should input the
// length and breadth of a rectangle, one has to find out which
// rectangle has the highest perimeter. The minimum number of
// rectangles should be three.
#include <stdio.h>

int main() {
    int n, l, b, i, maxPerimeter = 0, rectNo = 0;

    // Input for number of rectangles
    printf("Enter number of rectangles (minimum 3): ");
    scanf("%d", &n);

    // Enforce minimum of 3 rectangles
    if (n < 3) {
        printf("You must enter at least 3 rectangles.\n");
        return 0;
    }

    // Loop through all rectangles
    for (i = 1; i <= n; i++) {
        printf("Enter length and breadth of rectangle %d: ", i);
        scanf("%d %d", &l, &b);

        int perimeter = 2 * (l + b);

        // 1. Check if we have a new maximum
        if (perimeter > maxPerimeter) {
            maxPerimeter = perimeter;
            rectNo = i;
        }


        // Store old max before potential update
        int oldMaxPerimeter = maxPerimeter;

        // Update maxPerimeter
        maxPerimeter = (perimeter > maxPerimeter) ? perimeter : 
maxPerimeter;
        rectNo = (perimeter > oldMaxPerimeter) ? i : rectNo;
    }
    printf("Rectangle %d has the highest perimeter = %d\n", 
rectNo, maxPerimeter);

    return 0;
}
```

Output:



```
Enter number of rectangles (minimum 3): 5
Enter length and breadth of rectangle 1: 2
5
Enter length and breadth of rectangle 2: 9
8
Enter length and breadth of rectangle 3: 5
7
Enter length and breadth of rectangle 4: 2
1
Enter length and breadth of rectangle 5: 9
7
Rectangle 2 has the highest perimeter = 34
Program ended with exit code: 0
```