

**Week 3 – 2:**

**--Coding-C-Language Features-Optional.**

**ROLL NO.:240801153**

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Status	Finished
Started	Monday, 23 December 2024, 5:33 PM
Completed	Friday, 8 November 2024, 6:06 PM
Duration	44 days 23 hours

**Q1) Write a program that determines the name of a shape from its number of sides. Read the number of sides from the user and then report the appropriate name as part of a meaningful message. Your program should support shapes with anywhere from 3 up to (and including) 10 sides. If a number of sides outside of this range is entered then your program should display an appropriate error message.**

**Sample Input 1**

**3**

**Sample Output 1**

**Triangle**

**Sample Input 2**

**7**

**Sample Output 2**

**Heptagon**

**Sample Input 3**

**11**

**Sample Output 3**

**The number of sides is not supported.**

## Code:

```
1 #include <stdio.h>
2 int main(){
3     int a;
4     scanf("%d",&a);
5     if(a==3){
6         printf("Triangle");
7     }
8     else if(a==4){
9         printf("Quadrilateral");
10    }
11    else if (a==5){
12        printf("Pentagon");
13    }
14    else if (a==6){
15        printf("Hexagon");
16    }
17    else if (a==7){
18        printf("Heptagon");
19    }
20    else if (a==8){
21        printf("octagon");
22    }
23    else if (a==9){
24        printf("Nonagon");
25    }
26    else if (a==10){
27        printf("Decagon");
28    }
29    else{
30        printf("The number of sides is not supported.");
31    }
32    return 0;
33 }
```

## OUTPUT:

	Input	Expected	Got	
✓	3	Triangle	Triangle	✓
✓	7	Heptagon	Heptagon	✓
✓	11	The number of sides is not supported.	The number of sides is not supported.	✓

Passed all tests! ✓

**Q2) The Chinese zodiac assigns animals to years in a 12-year cycle. One 12-year cycle is shown in the table below. The pattern repeats from there, with 2012 being another year of the Dragon, and 1999 being another year of the Hare.**

**Year Animal**

**2000 Dragon**

**2001 Snake**

**2002 Horse**

**2003 Sheep**

**2004 Monkey**

**2005 Rooster**

**2006 Dog**

**2007 Pig**

**2008 Rat**

**2009 Ox**

**2010 Tiger**

**2011 Hare**

**Write a program that reads a year from the user and displays the animal associated with that year. Your program should work correctly for any year greater than or equal to zero, not just the ones listed in the table.**

**Sample Input 1**

**2004**

**Sample Output 1**

**Monkey**

**Sample Input 2**

**2010**

**Sample Output 2**

**Tiger**

## Code:

```
1 #include <stdio.h>
2 int main(){
3     int a;
4     const char*animals[]={
5         "Dragon","Snake","Horse","Sheep","Monkey","Rooster","Dog","Pig","Rat","Ox","Tiger","Hare"
6     };
7     scanf("%d",&a);
8     int index = (a-2000)%12;
9     if (index<0){
10         index+=12;
11     }
12     printf("%s\n",animals[index]);
13     return 0;
14 }
```

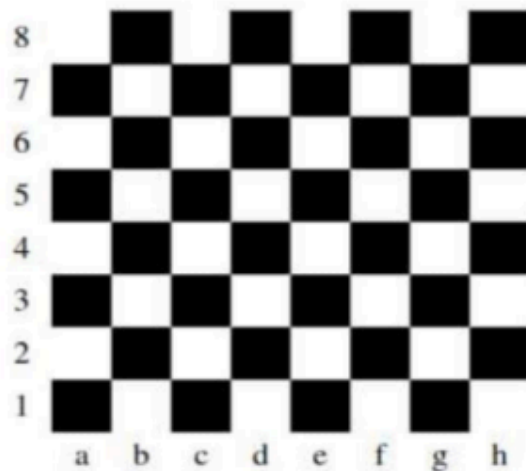
## OUTPUT:

	Input	Expected	Got	
✓	2004	Monkey	Monkey	✓
✓	2010	Tiger	Tiger	✓

Passed all tests! ✓

### Q3)

Positions on a chess board are identified by a letter and a number. The letter identifies the column, while the number identifies the row, as shown below:



Write a program that reads a position from the user. Use an if statement to determine if the column begins with a black square or a white square. Then use modular arithmetic to report the color of the square in that row. For example, if the user enters a1 then your program should report that the square is black. If the user enters d5 then your program should report that the square is white. Your program may assume that a valid position will always be entered. It does not need to perform any error checking.

#### Sample Input 1

a 1

#### Sample Output 1

The square is black.

### Code:

```
1 #include <stdio.h>
2 int main(){
3     int row;
4     char col;
5     scanf("%c %d",&col,&row);
6     // printf("%c",col);
7     if (col == 'a' || col == 'c' || col == 'e' || col == 'g'){
8         if (row%2!=0){
9             printf("The square is black.");
10        }
11        else{
12            printf("The square is white.");
13        }
14    }
15    else{
16        if (row%2!=0){
17            printf("The square is white.");
18        }
19        else{
20            printf("The square is black.");
21        }
22    }
23    return 0;
24 }
```

## OUTPUT:

	Input	Expected	Got	
✓	a 1	The square is black.	The square is black.	✓
✓	d 5	The square is white.	The square is white.	✓

Passed all tests! ✓