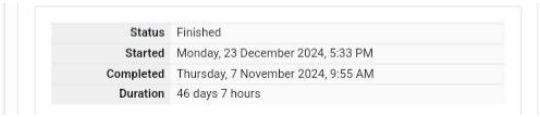
Week 3 – 2:
--Coding-C-Language Features-Optional.
ROLL NO.:240801181
Name: Lokesh K



Status	Finished
Started	Monday, 23 December 2024, 5:33 PM
Completed	Thursday, 7 November 2024, 9:55 AM
Duration	46 days 7 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:

```c
#include<stdio.h>
int main()
{
 int n;
 scanf("%d",&n);
 if(n==3)
 {
   printf("Triangle");
 }
 else if(n==4)
 {
     printf("Square");
 }
 else if(n==5)
 {
     printf("Pentagon");
 }
 else if(n==6)
 {
     printf("Hexagon");
 }
 else if(n==7)
 {
   printf("Heptagon");
 }
 else if(n==8)
 {
     printf("Octagon");
 }
 else if(n==9)
 {
     printf("Nonagon");
 }
 else if(n==10)
 {
     printf("Decagon");
 }
 else
 {
   printf("The number of sides is not supported.");
 }
 return 0;
}
```

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:

```c
#include<stdio.h>
int main()
{
    int year;
    const char*animals[] = {"Dragon","Snake","Horse","Sheep","Monkey","Rooster","Dog","Pig","Rat","Ox","Tiger","Rat
    scanf("%d",&year);
    int index = (year - 2000)%12;
    if(index<0)
    {
        index += 12;
    }
    printf("%s\n",animals[index]);
    return 0;
}
```

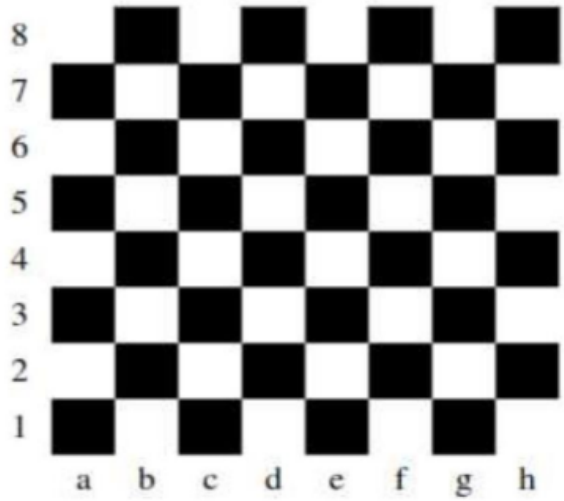
OUTPUT:

	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:

```c
#include<stdio.h>
int main()
{
    char ch;
    int n;
    scanf("%c %d",&ch,&n);
    if((ch=='a' && n%2==0)||(ch =='c' && n%2==0)||(ch=='e' && n%2==0) || (ch =='g' && n%2==0))
    {
        printf("The square is white.");
    }
    else if((ch=='b'&& n%2!=0)||(ch=='d' && n%2!=0)||(ch=='f' && n%2!=0)||(ch =='h' && n%2!=0))
    {
        printf("The square is white.");
    }
    else
    {
        printf("The square is black.");
    }

}
```

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! ✓