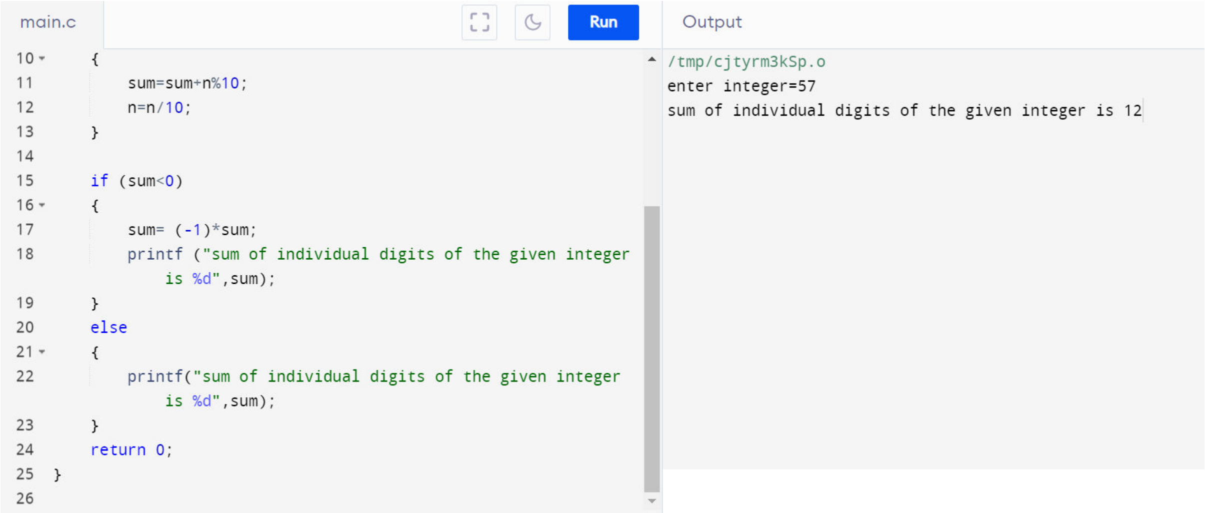
Assignment 2: Control statements – I

1.

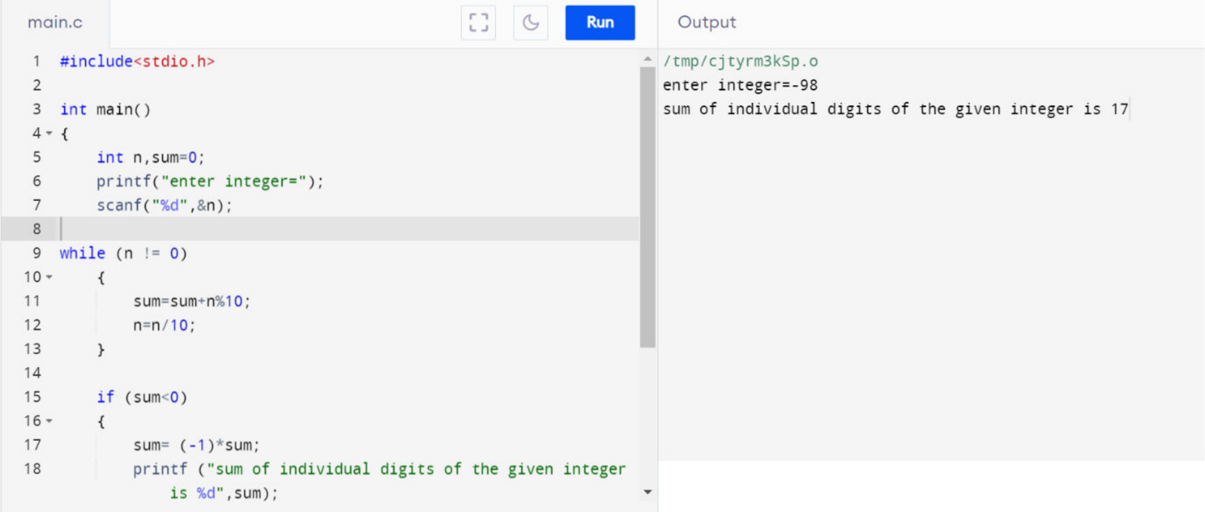


```c
    {
        sum=sum+n%10;
        n=n/10;
    }

    if (sum<0)
    {
        sum= (-1)*sum;
        printf ("sum of individual digits of the given integer is %d",sum);
    }
    else
    {
        printf("sum of individual digits of the given integer is %d",sum);
    }
    return 0;
}

```

```
/tmp/cjtyrm3kSp.o
enter integer=57
sum of individual digits of the given integer is 12
```



```c
#include<stdio.h>

int main()
{
    int n,sum=0;
    printf("enter integer=");
    scanf("%d",&n);

while (n != 0)
    {
        sum=sum+n%10;
        n=n/10;
    }

    if (sum<0)
    {
        sum= (-1)*sum;
        printf ("sum of individual digits of the given integer is %d",sum);
```

```
/tmp/cjtyrm3kSp.o
enter integer=-98
sum of individual digits of the given integer is 17
```

Inference- As the sum for negative integers is negative we need to take the absolute value of the result.

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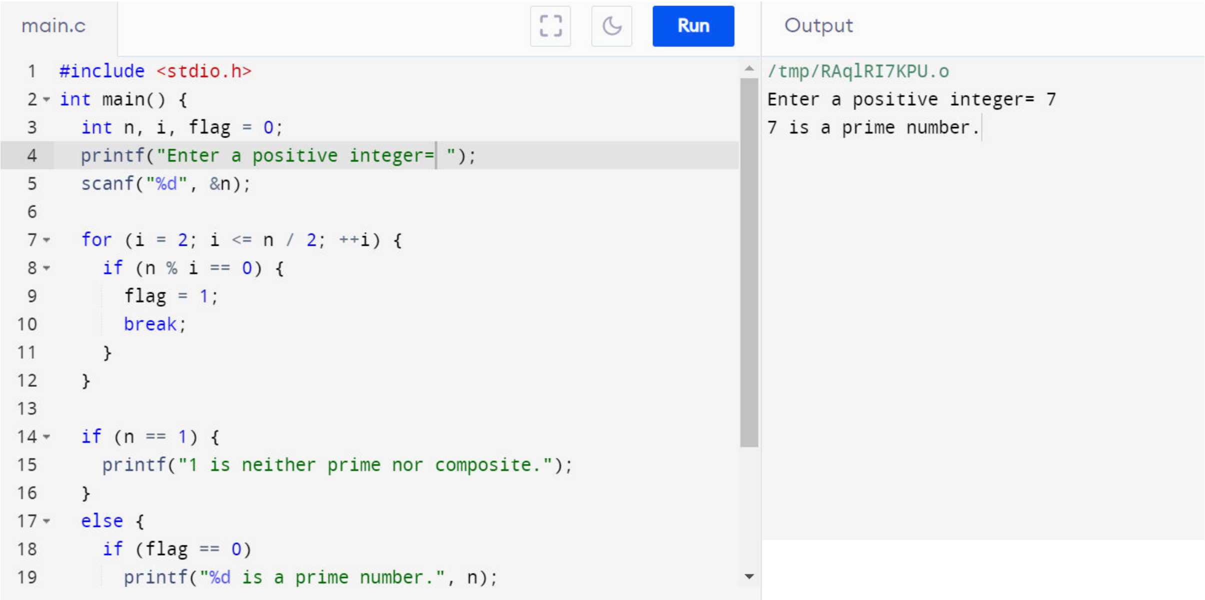


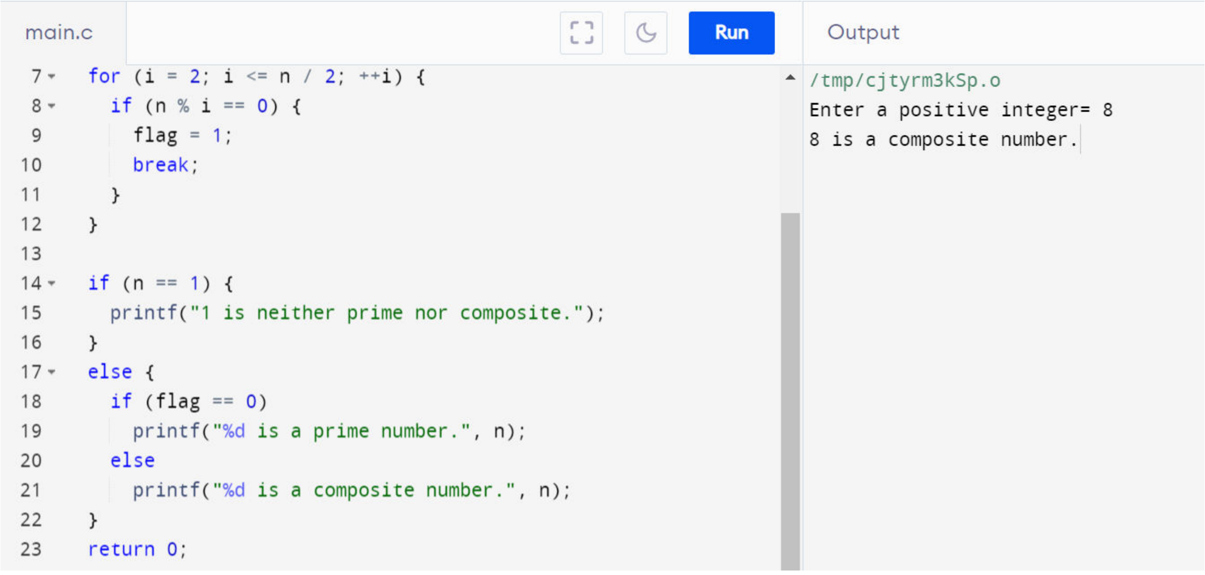
```c
#include <stdio.h>
int main() {
  int n, i, flag = 0;
  printf("Enter a positive integer= ");
  scanf("%d", &n);

  for (i = 2; i <= n / 2; ++i) {
    if (n % i == 0) {
      flag = 1;
      break;
    }
  }

  if (n == 1) {
    printf("1 is neither prime nor composite.");
  }
  else {
    if (flag == 0)
      printf("%d is a prime number.", n);
```

```
/tmp/RAqlRI7KPU.o
Enter a positive integer= 7
7 is a prime number.
```

2.



```c
  for (i = 2; i <= n / 2; ++i) {
    if (n % i == 0) {
      flag = 1;
      break;
    }
  }

  if (n == 1) {
    printf("1 is neither prime nor composite.");
  }
  else {
    if (flag == 0)
      printf("%d is a prime number.", n);
    else
      printf("%d is a composite number.", n);
  }
  return 0;
```

```
/tmp/cjtyrm3kSp.o
Enter a positive integer= 8
8 is a composite number.
```

Inference- The program does not check whether the number entered is zero or less than zero. Hence it states zero and all negative numbers as prime number.

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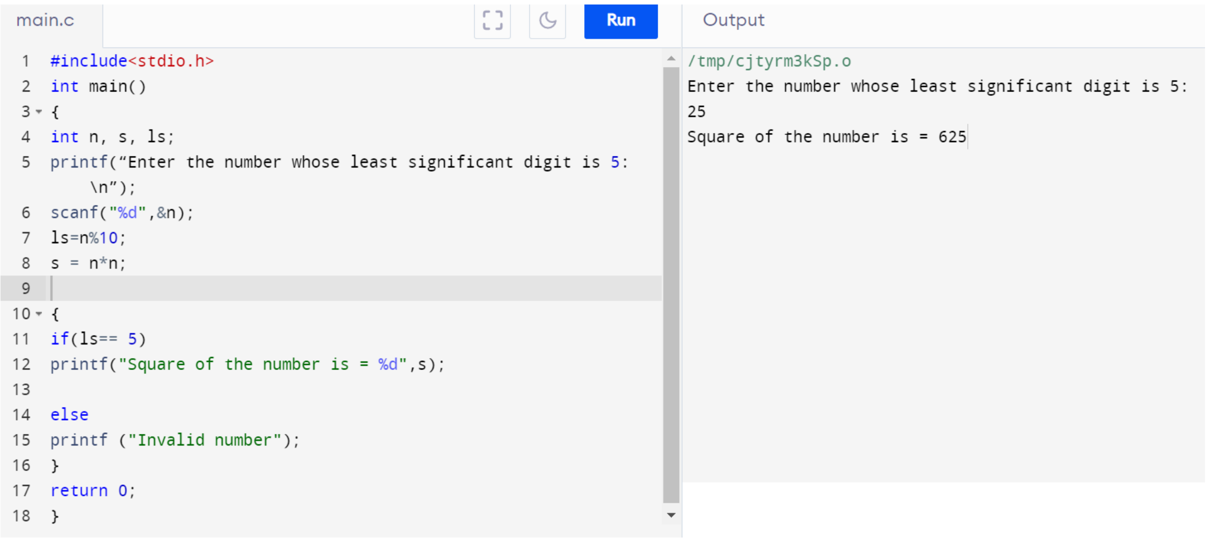


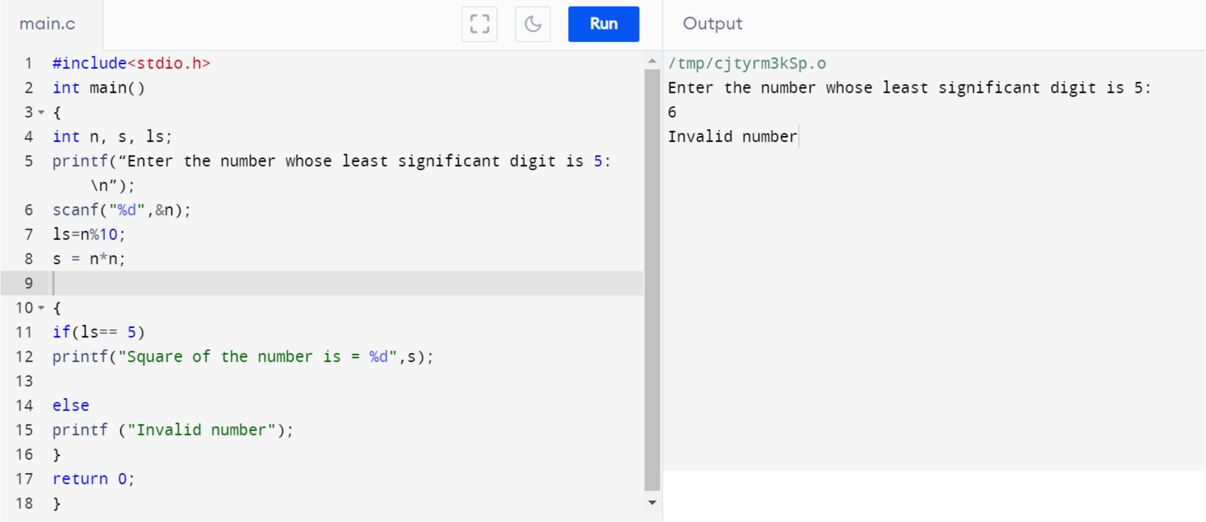
```c
#include<stdio.h>
int main()
{
int n, s, ls;
printf(“Enter the number whose least significant digit is 5:
    \n”);
scanf("%d",&n);
ls=n%10;
s = n*n;

{
if(ls== 5)
printf("Square of the number is = %d",s);

else
printf ("Invalid number");
}
return 0;
}
```

```
/tmp/cjtyrm3kSp.o
Enter the number whose least significant digit is 5:
25
Square of the number is = 625
```

3.



```c
#include<stdio.h>
int main()
{
int n, s, ls;
printf(“Enter the number whose least significant digit is 5:
    \n”);
scanf("%d",&n);
ls=n%10;
s = n*n;

{
if(ls== 5)
printf("Square of the number is = %d",s);

else
printf ("Invalid number");
}
return 0;
}
```

```
/tmp/cjtyrm3kSp.o
Enter the number whose least significant digit is 5:
6
Invalid number
```

Inference- The program does not work for other numbers like decimal numbers with least significant digit as 5. Works well for integers though.

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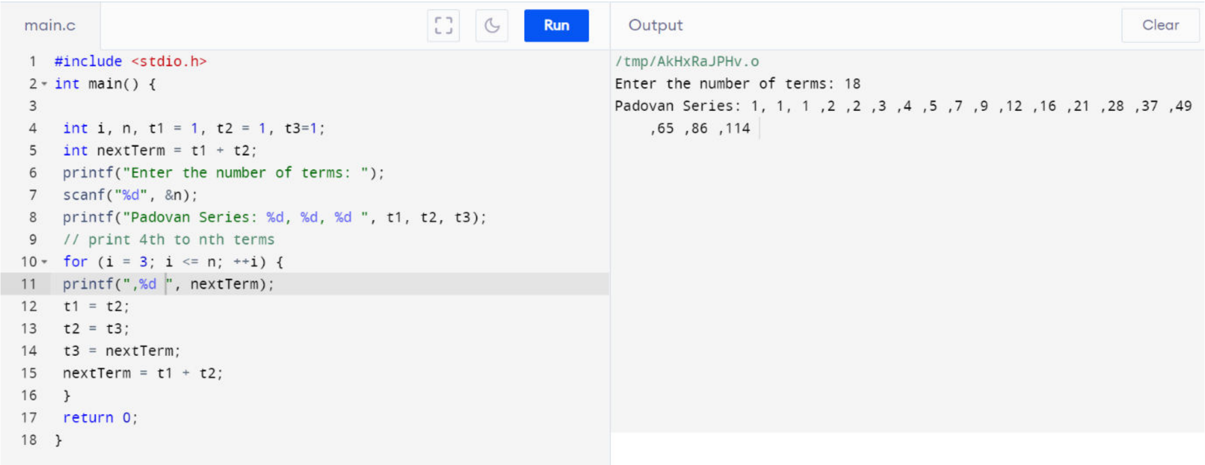
4.



```
#include <stdio.h>
int main() {

  int i, n, t1 = 1, t2 = 1, t3=1;
  int nextTerm = t1 + t2;
  printf("Enter the number of terms: ");
  scanf("%d", &n);
  printf("Padovan Series: %d, %d, %d ", t1, t2, t3);
  // print 4th to nth terms
  for (i = 3; i <= n; ++i) {
  printf(",%d ", nextTerm);
  t1 = t2;
  t2 = t3;
  t3 = nextTerm;
  nextTerm = t1 + t2;
  }
  return 0;
}
```

```
/tmp/AkHxRaJPHv.o
Enter the number of terms: 18
Padovan Series: 1, 1, 1 ,2 ,2 ,3 ,4 ,5 ,7 ,9 ,12 ,16 ,21 ,28 ,37 ,49
    ,65 ,86 ,114
```

Inference-

Enter the number of terms: 1

Padovan Series: 1, 1, 1

Enter the number of terms: 2
Padovan Series: 1, 1, 1

Enter the number of terms: 3
Padovan Series: 1, 1, 1 ,2

Enter the number of terms: 4
Padovan Series: 1, 1, 1 ,2 ,2

Enter the number of terms: 5
Padovan Series: 1, 1, 1 ,2 ,2 ,3

The series is not generated correctly.

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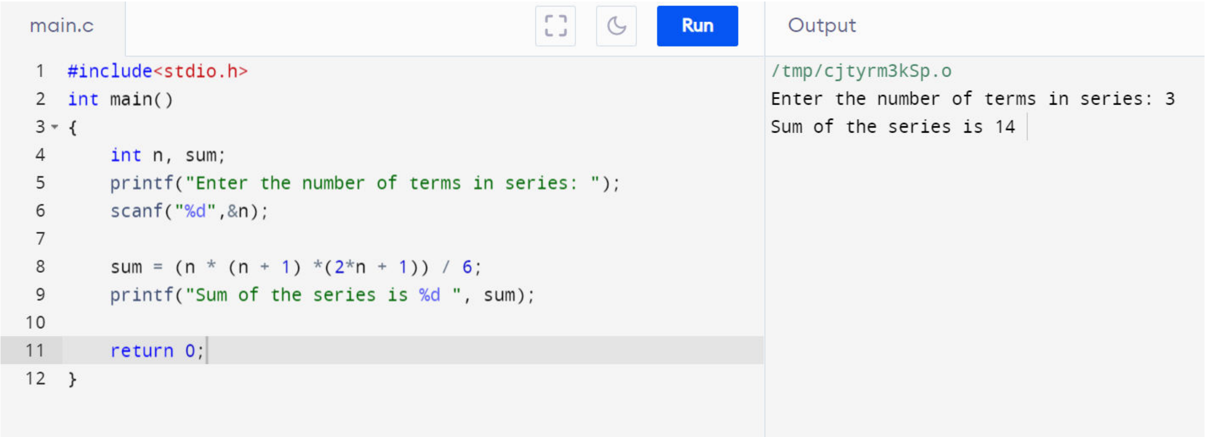
5.



```c
#include<stdio.h>
int main()
{
    int n, sum;
    printf("Enter the number of terms in series: ");
    scanf("%d",&n);

    sum = (n * (n + 1) *(2*n + 1)) / 6;
    printf("Sum of the series is %d ", sum);

    return 0;
}
```

```
/tmp/cjtyrm3kSp.o
Enter the number of terms in series: 3
Sum of the series is 14
```

Inference- The program does not handle negative numbers.

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