

Assignment 12

① #include <stdio.h>
void printNatural(int n);
int main()
{
 int numbers;
 printf("Enter how many natural numbers to be printed\n");
 scanf("%d", &numbers);
 printf("%d Natural Numbers are : \n", numbers);
 printNatural(numbers);
 return 0;
}

void printNatural(int n)

{

if(n > 0)

{

printNatural(n - 1);

printf("%d ", n);

}

?

① printNatural(n)

= 1 2 3 4 5 ... n

②

printNatural(n - 1) =

1 2 3 4 5 ... n - 1

printNatural(n - 1);

printf("%d ", n);

③ n > 0;

② #include <stdio.h>

Void printReverse(int);
int main();

{}

int n;

printf("Enter how many numbers do be printed\n"),
scanf("%d", &n),
printf("%d Natural Numbers in Reversed Order: \n", n),
printReverse(n);
return 0;

{}

Void printReverse (int n)

{}

if (n > 0)

{}

①

printReverse (n)

:- n, n-1, n-2, ...

②

printReverse (n-1)

:- - n-1, n-2, n-3, ...

printf("%d ", n),

printReverse (n-1);

printf("%d ", n);

printReverse (n-1);

{}

{}

③ #include <stdio.h>
void printEven(int);
int main()
{
 int n;
 printf("Enter how many numbers you want to be printed.\n");
 scanf("%d", &n);
 printf("%d natural Even Numbers are : \n", n);
 printEven(n);
 return 0;

?

Void printEven(int n)
{
 if(n > 0)
 {
 printEven(n-1);
 printf("%d ", 2*n);
 }
}

?

?

① printEven(n)	: 2 4 6 8 ... 2n
② printEven(n-1)	: 2 4 6 8 ... 2(n-1) <u>2n</u>
③ if(n > 0)	printEven(n-1); printf("%d ", 2*n);

(4) #include <stdio.h>

void printEvenReverse(int n);

int main()

{

int n;

printf("Enter number of Even Reverse Number you want to
print\n");

scanf("%d", &n);

printf("%d Even numbers in Reverse Order : %n", n);

printEvenReverse(n);

return 0;

}

:

Void printEvenReverse (int n)

{

if (n > 0)

{

printf("%d ", 2*n);

printEvenReverse(n);

}

}

printEvenReverse (n)

: 2n , 2n-2 , 2n-4...

printEvenReverse (n-1)

: — 2n-2 , 2n-4...

printf("%d ", 2*n)

printEvenReverse(n);

if (n > 0)

(5) #include <stdio.h>
 void printOdd(int);
 int main()
 {
 int n;
 printf("Enter number of odd numbers you want to print\n");
 scanf("%d", &n);
 printf("%d. Natural Odd Numbers are: \n", n);
 printOdd(n);
 return 0;
 }

void printOdd(int n)
{

if (n > 0)
{
 printOdd(n - 1);
 printf("%d ", 2 * n - 1);
}

}

3

printOdd(n)

: 1 3 5 7 ... 2*n - 1

printOdd(n-1)

: 1 3 5 7 ... 2*n - 3

printOdd(n-1);

printf("%d ", 2*n - 1);

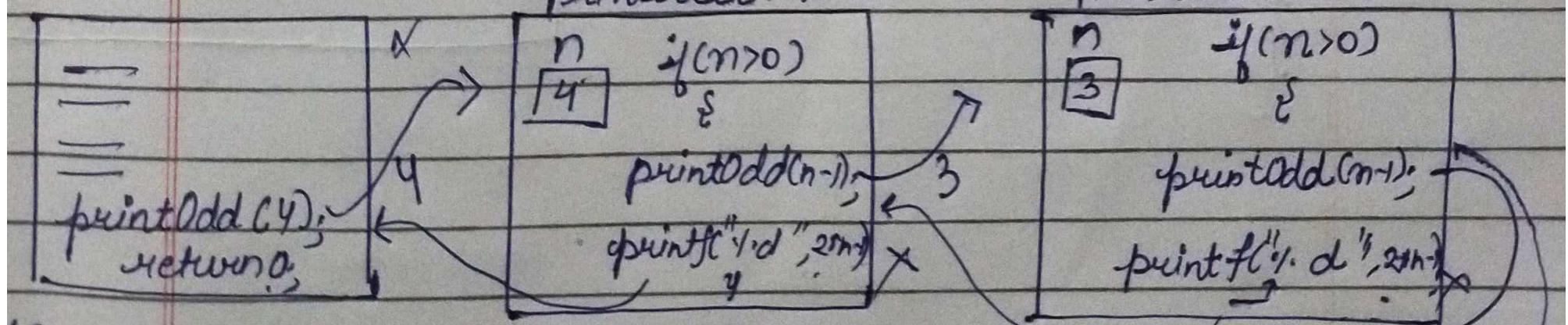
if (n > 0)

1 3 5 7

Example \Rightarrow n = 4

printOdd(int n)

printOdd(int n)



3 5 7

n if (n > 0)
{ }
3

n if (n > 0)
{ }
1

n if (n > 0)
{ }
2

GOOD WRITE

-t

(6) #include <stdio.h>

Void printOddReverse(int);

int main()

{

int n;

printf(" Enter number of odd. numbers you want \n");

scanf("%d", &n);

printf("\.d Odd Natural Numbers in Reverse Order: \n", n);

printOddReverse(n);

return 0;

{}

Void printOddReverse(int n)

{

if(n>0)

{

printf("\.d ", 2*n-1);

printOddReverse(n-1);

{}

{}

printOddReverse(n)

2*n-1, 2*n-3, 2*n-5,

printOddReverse(n-1)

- 2*n-1, 2*n-3,

printf("\.d ", 2*n-1);

printOddReverse(n-1);

if(n>0?)

⑦ #include <stdio.h>
void printSquare(int);
int main()
{
 int n;
 printf("Enter number of natural numbers\n");
 scanf("%d", &n);
 printf("The squares of %d natural numbers are: \n", n);
 printSquare(n);
 return 0;
}

Void printSquare(int n)
{ if(n>0)
 {
 printSquare(n-1);
 printf("%d ", n*n);
 }
}

printSquare(n):
 $1^2 \ 2^2 \ 3^2 \ 4^2 \ 5^2 \dots n^2$
printSquare(n-1):
 $1^2 \ 2^2 \ 3^2 \ 4^2 \ 5^2 \dots (n-1)^2$
printSquare(n-1):
printf("%d ", n*n);
if(n>0)

(8)

```
#include<stdio.h>
```

```
void printBinary(int),  
int main()  
{  
    int number;  
    printf("Enter a number.\n");  
    scanf("%d", &number);  
    printf("Binary of %d is : %b", number);  
    printBinary(number);  
    return 0;  
}
```

3

```
Void printBinary(int n)  
{
```

```
    if(n>0)  
    {
```

```
        printBinary(n/2);  
        printf(".%d", n%2);  
    }
```

3

3

```
printBinary(242)
```

```
11110010
```

```
printBinary(121)
```

```
-1110010
```

⑨ #include <stdio.h>

int void.printOctal(int);

int main()

{

int number;

printf("Enter a number.\n");

scanf("%d", &number);

printf("Octal representation of %d is : \n", number);

printOctal(number);

return 0;

}

void.printOctal(int number)

{

if (number > 0)

{

printOctal(n/8);

printf("%d", n%8);

}

}

(10) #include <stdio.h>
void printReverse(int n, int r)
{ int main()
{
 int number, r=0;
 printf("Enter the number\n");
 scanf("%d", &number);
 printf("Reverse of a %d is : %d", number);
 printReverse(number, r);
 return 0;
}

Void printReverse(int n, int r)
{
 int a;
 if (n > 0)
 {
 a = n % 10;
 r = r * 10 + a;
 printReverse(n / 10, r);
 }
 else
 printf("%d", r);
}

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