iNeuron

Course Name: Job Ready Bootcamp in C++, DSA and IOT

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Assignment No:12

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1. Write a recursive function to print first N natural numbers.

Program

```
#include<stdio.h>
void natural(int);
int main()
{
   int n;
   printf("Enter a number:");
   scanf("%d",&n);
   natural(n);
   return 0;
}
void natural(int n)
{
   if(n<1)
      return;
   natural(n-1);
   printf("%d ",n);
}
```

2. Write a recursive function to print first N natural numbers in reverse order .

Program

```
#include<stdio.h>
void natural(int);
int main()
{
   int n;
   printf("Enter a number:");
   scanf("%d",&n);
   natural(n);
   return 0;
}
void natural(int n)
{
   if(n<1)
```

```
        return;
    printf("%d ",n);
    natural(n-1);
}
```

3. Write a recursive function to print first N odd natural numbers .

Program

```
#include<stdio.h>
void natural(int,int);
int count=0;
int main()
{
    int n,a=1;
    printf("Enter a number:");
    scanf("%d",&n);
    natural(a,n);
    return 0;
}
void natural(int a,int n)
{
    if(++count>n)
        return;
    else
    {
        printf("%d ",a);
        natural(a+2,n);
    }
}
```

4. Write a recursive function to print first N odd natural numbers in reverse order.

Program

```
#include<stdio.h>
void natural(int,int);
int count=0;
```

```
int main()
{
   int n,a=1;
   printf("Enter a number:");
   scanf("%d",&n);
   natural(a,n);
   return 0;
}
void natural(int a,int n)
{
   if(++count>n)
      return;
   else
   {
      natural(a+2,n);
      printf("%d ",a);
   }
}
```

5. Write a recursive function to print first N even natural numbers .

Program

```
#include<stdio.h>
void natural(int,int);
int count=0;
int main()
{
   int n,a=2;
   printf("Enter a number:");
   scanf("%d",&n);
   natural(a,n);
   return 0;
}
void natural(int a,int n)
{
   if(++count>n)
      return;
```

```
    else
    {
        printf("%d ",a);
        natural(a+2,n);
    }
}
```

6. Write a recursive function to print first N even natural numbers in reverse order .

Program

```
#include<stdio.h>
void natural(int,int);
int count=0;
int main()
{
    int n,a=2;
    printf("Enter a number:");
    scanf("%d",&n);
    natural(a,n);
    return 0;
}
void natural(int a,int n)
{
    if(++count>n)
        return;
    else
    {
        natural(a+2,n);
        printf("%d ",a);
    }
}
```

7. Write a recursive function to print squares of first N natural numbers .

Program

```
#include<stdio.h>
void natural(int);
int main()
{
   int n;
   printf("Enter a number:");
   scanf("%d",&n);
   natural(n);
   return 0;
}
void natural(int n)
{
   if(n<1)
      return;
   natural(n-1);
   printf("%d ",n*n);
}
```

8. Write a recursive function to print binary of a given decimal number .

Program

```
#include<stdio.h>
void binary(int);
int main()
{
   int n;
   printf("Enter a number:");
   scanf("%d",&n);
   binary(n);
   return 0;
}
void binary(int n)
{
   if(n==1)
```

```
        printf(“%d  ”,1);
    else
        binary(n/2);
        printf("%d  ",n%2);
  }
```

9. Write a recursive function to print octal of a given decimal number.

Program

```
#include<stdio.h>
void binary(int);
int main()
{
   int n;
   printf("Enter a number:");
   scanf("%d",&n);
   binary(n);
   return 0;
}
void binary(int n)
{
   if(n==1)
      return;
   binary(n/8);
   printf("%d ",n%8);

}
```

10. Write a recursive function to print reverse of a given number .

Program

```
#include<stdio.h>
void reverse(int);
int main()
{
   int n;
   printf("Enter a number:");
```

```
    scanf("%d",&n);
    reverse(n);
    return 0;
}
void reverse(int n)
{
    if(n==0)
        return;
    printf("%d",n%10);
    reverse(n/10);
}
```