

## ES-202

### Introduction to Programming in C

#### Assignment-II

#### C Programming Exercises

1. Write a C program to print all alphabets from a to z.

```
#include <stdio.h>
void main()
{
    for(int i=97;i<=122;++i)
        printf("%c ",i);
}
```

#### OUTPUT:

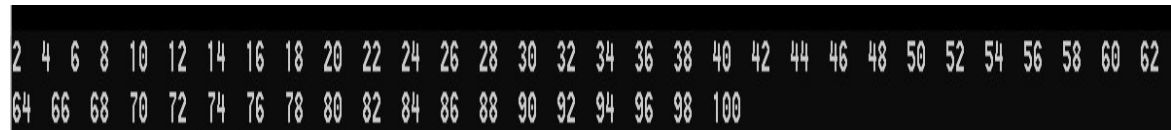


```
a b c d e f g h i j k l m n o p q r s t u v w x y z
Process returned 2 (0x2)    execution time : 0.020 s
```

2. Write a C program to print all even numbers between 1 to 100.

```
#include <stdio.h>
void main()
{
    for(int i=2;i<=100;++i)
    {
        if(i%2==0)
            printf("%d ",i);
    }
}
```

**OUTPUT:**

A screenshot of a terminal window with a black background and white text. It displays the output of a C program, which is a list of even numbers from 2 to 100. The numbers are arranged in two rows: the first row contains numbers from 2 to 62, and the second row contains numbers from 64 to 100. There is a space between each number.

2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62  
64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100

**3. Write a C program to find sum of all odd numbers between 1 to n.**

```
#include <stdio.h>
void main()
{
    int n;
    printf("Enter number of terms: ");
    scanf("%d",&n);
    int sum=0;
    for(int i=1;i<=n;++i)
    {
        if(i%2!=0)
            sum+=i;
    }
    printf("Sum of odd numbers till n terms: %d",sum);
}
```

**OUTPUT:**

```
Enter number of terms: 100
Sum of odd numbers till n terms: 2500
Process returned 37 (0x25)    execution time : 2.816 s
```

4. Write a C program to print multiplication table of any number.

```
#include <stdio.h>
void main()
{
    int n;
    printf("Enter number for which table is required: ");
    scanf("%d",&n);
    for(int i=1;i<=10;++i)
        printf("%d\tx\t%d\t=\t%d\n",n,i,n*i);
}
```

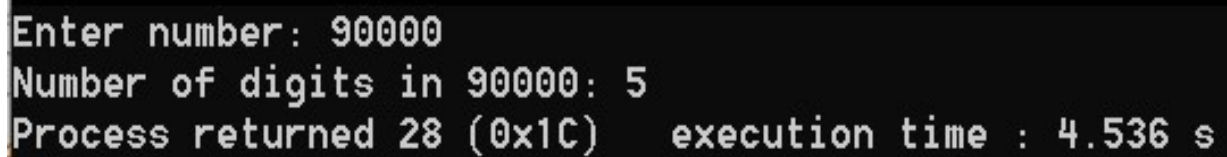
**OUTPUT:**

```
Enter number for which table is required: 7
7      x      1      =      7
7      x      2      =     14
7      x      3      =     21
7      x      4      =     28
7      x      5      =     35
7      x      6      =     42
7      x      7      =     49
7      x      8      =     56
7      x      9      =     63
7      x     10      =     70
```

5. Write a C program to count number of digits in a number.

```
#include <stdio.h>
void main()
{
    int n;int m=0;
    printf("Enter number: ");
    scanf("%d",&n);
    int t=n;
    while(n!=0)
    {
        n/=10;
        ++m;
    }
    printf("Number of digits in %d: %d",t,m);
}
```

**OUTPUT:**

A screenshot of a terminal window showing the execution of a C program. The text is as follows:  
Enter number: 90000  
Number of digits in 90000: 5  
Process returned 28 (0x1C) execution time : 4.536 s

**6. Write a C program to find first and last digit of a number.**

```
#include <stdio.h>
#include <math.h>
void main()
{
    int n,int m=0;
    printf("Enter number: ");
    scanf("%d",&n);
    int c=0,t=n;
    while(t!=0)
    {
        t/=10;
        ++c;
    }
    int a=(int)pow(10,c-1);
    printf("First term of the digit %d: %d\nLast term of the digit %d: %d",n,n/a,n,n%10);
}
```

**OUTPUT:**

```
Enter number: 321456789
First term of the digit 321456789: 3
Last term of the digit 321456789: 9
Process returned 72 (0x48)   execution time : 5.893 s
```

**7. Write a C program to swap first and last digits of a number.**

```
#include <stdio.h>
#include <math.h>
void main()
{
    int n,m;
    printf("Enter number: ");
    scanf("%d",&n);
    int c=0,t=n;
    while(t!=0)
    {
        t/=10;
        ++c;
    }
    int f=n/(int)pow(10,c-1);
    int l=n%10;
    m=l;
    m*=(int)pow(10,c-1);
    m+=n%((int)pow(10,c-1));
    m=m-l+f;
    printf("Required Number: %d",m);
}
```

**OUTPUT:**

```
Enter number: 321456789
Required Number: 921456783
Process returned 26 (0x1A)    execution time : 3.664 s
```

8. Write a C program to find frequency of each digit in each integer.

```
#include <stdio.h>
void main()
{
    int n,t=n,c=0;
    printf("Enter number: ");
    scanf("%d",&n);
    while(t!=0)
    {
        t/=10;
        ++c;
    }
    int num[]={0,0,0,0,0,0,0,0,0,0};
    while(n!=0)
    {
        int a=n%10;
        ++num[a];
        n/=10;
    }
    for(int i=0;i<10;++i)
    if(num[i]!=0)
        printf("Frequency of %d: %d\n",i,num[i]);
}
```

**OUTPUT:**

```
Enter number: 236543
Frequency of 2: 1
Frequency of 3: 2
Frequency of 4: 1
Frequency of 5: 1
Frequency of 6: 1
```



**9. Write a C program to enter a number and print it in words.**

```
#include <stdio.h>
void main()
{
    int n,num;
    printf("Enter number: ");
    scanf("%d",&n);
    while(n != 0)
    {
        num = (num * 10) + (n % 10);
        n /= 10;
    }
    while(num!=0)
    {
        int a =num%10;
        switch(a)
        {case 0: printf("ZERO ");
            break;
        case 1: printf("ONE ");
            break;
        case 2: printf("TWO ");
            break;
        case 3: printf("THREE ");
            break;
        case 4: printf("FOUR ");
            break;
        case 5: printf("FIVE ");
            break;
        case 6: printf("SIX ");
            break;
        case 7: printf("SEVEN ");
            break;
        case 8: printf("EIGHT ");
            break;
        case 9: printf("NINE ");
```

```
        break;
    }
    num/=10;
}
}
```

**OUTPUT:**

```
Enter number: 987654
NINE EIGHT SEVEN SIX FIVE FOUR
```

## 10. Write a C program to print all ASCII character with their values.

```
#include <stdio.h>

void main()
{
    printf("Character : ASCII Code\n");
    for(int i=0;i<=256;++i)
        printf("%c :%d\n",i,i);
}
```

### OUTPUT:

```
Character : ASCII Code
0 :48      a :97      Æ :146      † :195      ∫ :244
1 :49      b :98      ö :147      ‡ :196      ∫ :245
2 :50      c :99      ÷ :148      + :197      ÷ :246
3 :51      d :100     ÷ :149      + :198      ÷ :247
4 :52      e :101     ù :150     || :199     ° :248
5 :53      f :102     ù :151     || :200     ° :249
6 :54      g :103     Ÿ :152     || :201     ° :250
7 :55      h :104     Ÿ :153     || :202     ° :251
8 :56      i :105     Ÿ :154     || :203     ° :252
9 :57      j :106     € :155     || :204     ° :253
: :58      k :107     £ :156     || :205     ° :254
; :59      l :108     ¤ :157     || :206     ° :255
< :60      m :109     ¤ :158     || :207     ° :256
= :61      n :110     ¤ :159     || :208
> :62      o :111     â :160     † :209
? :63      p :112     í :161     † :210
@ :64      q :113     ó :162     † :211
A :65      r :114     ú :163     † :212
B :66      s :115     ñ :164     † :213
C :67      t :116     Ñ :165     † :214
D :68      u :117     ã :166     † :215
E :69      v :118     é :167     † :216
F :70      w :119     ç :168     † :217
G :71      x :120     ¸ :169     † :218
H :72      y :121     ¸ :170     † :219
I :73      z :122     ¼ :171     † :220
J :74      { :123     ½ :172     † :221
K :75      | :124     ¾ :173     † :222
L :76      } :125     « :174     † :223
M :77      ~ :126     » :175     α :224
N :78      Δ :127     // :176     β :225
O :79      Ç :128     // :177     γ :226
P :80      Ù :129     // :178     π :227
Q :81      é :130     // :179     Σ :228
R :82      à :131     // :180     σ :229
S :83      ä :132     // :181     μ :230
T :84      à :133     // :182     γ :231
U :85      ä :134     // :183     ε :232
V :86      ç :135     // :184     θ :233
W :87      è :136     // :185     ñ :234
X :88      è :137     // :186     ò :235
Y :89      è :138     // :187     ω :236
Z :90      ÿ :139     // :188     ø :237
[ :91      ÿ :140     // :189     € :238
\ :92      ÿ :141     // :190     ñ :239
] :93      ÿ :142     // :191     ≡ :240
^ :94      ÿ :143     // :192     ± :241
_ :95      ÿ :144     // :193     ≥ :242
/ :96      æ :145     T :194     ≤ :243
```