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Course Code and Name *: 2CS101 Computer Programming*

Practical No: 4(a)

AIM: To do the following pattern

Theory applied: usage of entry controlled loop(for loop)

A A B A B C A B C D	

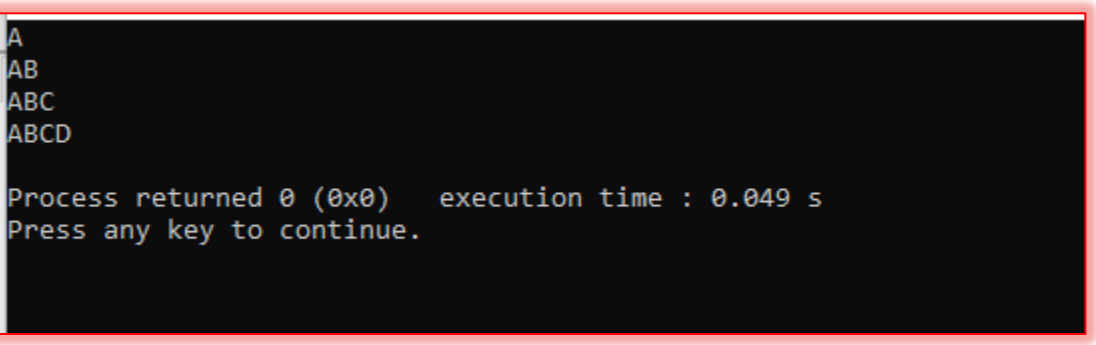
Methodology :

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

   int main()
{
  for(char i='A';i<='D';i++)
  {
     for(char j='A';j<=i;j++)
  {
        printf("%c",j);
   }
  printf("\n");
```

```
  }
   return 0
}
```

Input/output



Practical 4(a)ii

```
1
01
101
0101
```

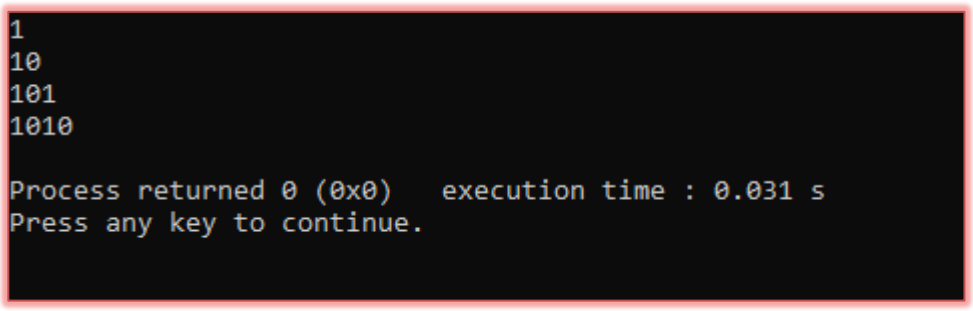
Methodology :

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

int main()
{
    int c=0,s=1;
     for(int i=1;i<=4;i++)
   {
      for(int j=1;j<=i;j++)
      {
         if(j%2!=0)
         printf("%d",s);
         else
          printf("%d",c);
      }
      printf("\n");
   }
```

```
    return 0;
}
```

Input/output



Practical No: 4(b)

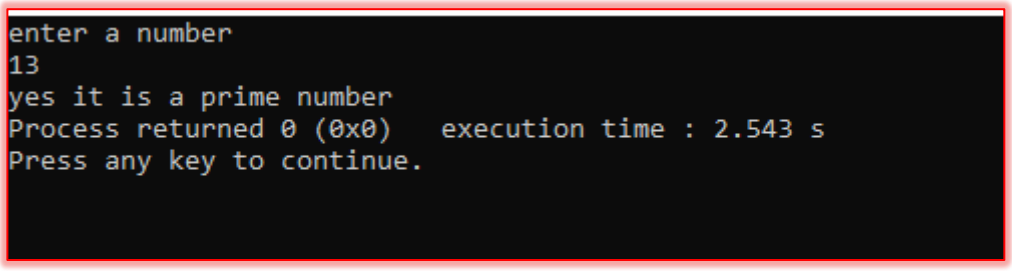
AIM : To enter a number and check whether it is a prime number or not

Methodology :

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

int main()
{
    int a,c;
    printf("enter a number ");
    scanf("%d",&a);
    for(int i=1;i<=a;i++)
    {
        if(a%i==0)
        c++;
    }
    if(c==2)
        printf("yes it is a prime number");
    else
        printf("no it is not a prime number");
   return 0;
}
```

***Input / output* :**



Practical No: 4(c)

AIM : Enhance the number guessing game developed earlier. The program should now display more appropriate messages (Greater, Smaller or Correct).It should allow a maximum of 5 attempts from the user and still if the user cannot guess the number correctly, it should display “Sorry”.

Methodology :

```
#include <stdio.h>
#include <time.h>
int main()
{
srand(time(NULL));
int t = rand() % 100;
int x,c=0;
for(int i=1;i<=5;i++)
{
printf("Enter any number: ");
scanf("%d",&x);
if (x==t)
{
printf("Correct guess!\n");
break;
}
else if (x>t)
{
printf("smaller\n");
```

```
c++;
}
else
{
printf("greater\n");
c++;
}
}
if(c>=5)
    printf("sorry");

}
```

Input / output **:**

```
Enter any number:
14
greater
Enter any number: 55
smaller
Enter any number: 40
greater
Enter any number: 45
smaller
Enter any number: 42
smaller
sorry
Process returned 0 (0x0)   execution time : 22.116 s
Press any key to continue.
```

Conclusion **:** Understanding loop usage and how to form various shapes using loop , checking different types of number