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SECTION – P2

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ASSIGNMENT OF -
COMPUTER PROGRAMING

- CONTANT-

1- BASIC CODE using loop and arithematic operation.
2- Conditional operator.
3- Switch.
4- Patterns.
5- Array 1d or 2d.
6- Strings
7- Pointers
8- Function.

1- Basic codes.

Q1 check Armstrong number.

```c
#include <stdio.h>

int main()
{ int a=371,b,c,g=a;
  while(a>10){
    b=a%10;
    c=c+(b*b*b);
    a=a/10;
  }
  c=c+(a*a*a);
  printf("%d",c);
  if (c==g)
  printf("yes");
  else
  printf("no");

    return 0;
}
```

Q2 check palindrome number.

```c
#include <stdio.h>

int main()
{
    int a=1641,b=a,c,d=0;
    while(a!=0){
       c=a%10;
       d =(d*10)+c;
       a/=10;
    }
    if (d==b)
    printf("it is palindrome");
    else{
        printf("it is not palindrome");
    }

    return 0;
}
```

Q3 fabonacci series.

```c
#include <stdio.h>

int main()
{
    int a=10,b=0,c=1,d;
    printf("%d,",b);
    printf("%d,",c);
    while(a!=0){
     d=b+c;
     printf("%d,",d);
     b=c;
     c=d;
     a=a-1;
    }

    return 0;
}
```

Q4 check perfect number.

```c
#include <stdio.h>

int main()
{
    int a,i=0,c=0;
    printf("enter the number-");
    scanf("%d",&a);
    for (i=1;i<=a;i++){
      if(a%i==0){
        c=c+i;
      }

    }
    if (c==a)
    printf("it is not aperfect num");
    else
    printf("it is a perfect num");
    return 0;
}
```

Q5 print prime up to n number.

```c
#include <stdio.h>

int main()
{
    int a,c=0,i,j;
    printf("enter the number -");
    scanf("%d",&a);
    for (i=1;i<=a;i++){
      for (j=2;j<i;j++){
        if(i%j==0){
            c=c+1;
        }

      }
    if (c==0)
    printf("%d,",i);
    c=0;
    }

    return 0;
}
```

2-Conditional operators.

Q1 check divisibility of a number.

```c
#include <stdio.h>
int main(){
int a,b,c;
printf("enter the num-");
scanf("%d",&a);
b = a%5;
c = a%11;
b==0? printf("num is divisibility by 5 \n"):printf("num is not divisibility by
5\n");
```

```
c==0? printf("num is divisibility by 11\n"):printf("num is not divisibility by
11\n");
}
```

Q2 check leap year.

```
#include <stdio.h>
int main(){
    int a,b,c,d;
    printf("enter the year \n");
    scanf("%d",&a);
    b=a%4;
    c=a%100;
    d=a%400;
    b==0?(c==0?(d==0?printf("it is leap year."):printf("it is not leap
year.")):printf("it is not a leap year")):printf("it is not leap year");
}
```

Q3 find max number along three numbers.

```
#include <stdio.h>
int main(){
    int a,b,c;
    printf("enter the number 1-");
    scanf("%d",&a);
    printf("enter the number 2-");
    scanf("%d",&b);
    printf("enter the number 3-");
    scanf("%d",&c);
    a>b? (a>c? printf("1 is bigger \n") :printf("1 is middle number\n")) :
(a>c? printf("1 is middle\n") :printf("1 is small number\n"));
    b>a? (b>c? printf("2 num is bigger\n") :printf("2 num is middle\n")) :
(b>c? printf("2 num is middle \n") :printf("2 num is small number\n"));
    c>a? (c>b? printf("3 num is bigger\n") :printf("3 num is middle\n")) :
(c>b? printf("3 num is middle\n ") :printf("3 num is small number\n"));

}
```

Q4 check number is positive or negative.

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

```
    printf("enter the number-\n");
    scanf("%d",&a);
    a>0? printf("%d is positive number",a) : (a<0? printf("%d is negative
number-",a):printf("number is zero."));

}
```

3-Switch

Q1 check even or odd.

```
#include <stdio.h>
int main(){
    int a,b,c;
    printf("enter the number");
    scanf("%d",&a);
    b =a>0;
    switch (b)
    {
    case 1:
    printf("%d is even",a);
        break;

    case 0:
    switch (a)
    {
    case 0:
        printf("%d it is zero",a);
        break;
    default:
    printf("%d it is odd number",a);
    break;

    }
    }

}
```

Q2 check vowel.

```c
#include <stdio.h>
int main(){
    char n;
    printf("enter the alphabet=");
    scanf("%c",&n);
    switch (n)
    {
    case 'a':
    case 'e':
    case 'i':
    case 'o':
    case 'u':
    printf(" %c it is vowel",n);
    break;

    default:
    printf("%c it is consonant",n);
    break;


    }
}
```

Q3 find maximum number.

```c
#include <stdio.h>
int main(){
    int a,b,c;
    printf("enter the number 1");
    scanf("%d",&a);
    printf("enter the number 2");
    scanf("%d",&b);
    c =a>b;
    switch (c)
    {
    case 1:
    printf("%d is bigger\n%d is smaller",a,b);
        break;

    case 0:
    printf("%d is bigger\n%d is smaller",b,a);
        break;
```

```
    }

}
```

Q4 simple calculater.

```
#include <stdio.h>
int main(){
    char c;
    int a,b,z=1;
    printf("what you want to perform");
    scanf("%c",&c);
    printf("enter the number 1");
    scanf("%d",&a);
    printf("enter the number 2");
    scanf("%d",&b);
    while (z==1)
    {
    switch (c)
    {
    case '+':
    printf(" sum of %d and %d = %d\n",a,b,a+b);
    printf("to exit press 0 \n to continue press 1 =");
    scanf("%d",&z);
    if (z==1){
    printf("what you want to perform");
    scanf("%c",&c);
    }
    break;

    case '-':
    printf(" subtract of %d and %d =%d\n",a,b,a-b);
    printf("to exit press 0 \n to continue press 1 =");
    scanf("%d",&z);
        break;

    case '*':
    printf(" multiple of %d and %d =%d\n",a,b,a*b);
    printf("to exit press 0 \n to continue press 1 =");
    scanf("%d",&z);
        break;

    case '/':
    printf(" divided of %d and %d =%f\n",a,b,(float)a/b);
    printf("to exit press 0 \n to continue press 1 =");
    scanf("%d",&z);
```

```
        break;
    }

    }


}
```

4- Patterns.

Q1 pattern of 1type.

```
#include <stdio.h>

int main()
{ int i,j;
    for (i=1;i<=5;i++)
    {
       for (j=1;j<=i;j++)
       {
        printf("%d",i);
       }
       printf("\n");

    }

    return 0;
}
```

Q2 pattern of 2 type.

```
#include <stdio.h>

int main()
{ int i,j;
    for (i=1;i<=5;i++)
    {
       for (j=1;j<=i;j++)
       {
        printf("%d",j);
       }
       printf("\n");
```

```
    }

    return 0;
}
```

Q3 pattern of 3 type.

```
#include <stdio.h>
int main()
{
    int i,k,j,a=1,b=5;
    for(i=1;i<=5;i++){
        for(k=1;k<=b-1;k++){
            printf(" ");
        }
        for(j=1;j<=a;j++){
            if(j%2==0)
            printf("A");
            else
            printf("*");
        }
        a=a+2;
        b=b-1;
        printf("\n");

    }
    return 0;
}
```

Q4 pattern of 4 type.

```
#include <stdio.h>

int main()
{ int i,j,a=65;
    for (i=1;i<=5;i++)
    {
       for (j=1;j<=i;j++)
       {
        printf("%c",a);
        a+=1;
       }
```

```
        printf("\n");
        a=65;

    }

    return 0;
}
```

5- Array 1d or 2d.

Q1 bubble sort.

```
#include <stdio.h>
int main(){
    int i,n,temp;
   printf("enter the size of array=");
    scanf("%d",&n);

    int class[n];
    for(int r=0;r<n;r++){
        printf("enter the element =");
        scanf("%d",&class[r]);
    }
    for ( i=1;i<n;i++)
    {
    for (int j = 0; j <n-1; j++)
    {
       if(class[j]>class[j+1]){
           temp=class[j];
           class[j]=class[j+1];
           class[j+1]=temp;
           temp=0;

       }

    }
    }
    for (int g=0;g <n; g++)
    {
```

```
        printf("%d",class[g]);
    }
    return 0 ;
}
```

Q2 count frequency.

```
#include <stdio.h>
int main(){
int n,c=1;
printf("enter the size of array=");
scanf("%d",&n);
int a[n];
for(int i=0;i<n;i++){
    printf("enter the element in array=");
    scanf("%d",&a[i]);
}
for (int i = 0; i <n; i++)
{
   if (a[i]!=-1){
       for (int j = i; j <n-1; j++)
   {
       if (a[i]==a[j+1]){
           c=c+1;
           a[j+1]=-1;
       }
   }

   }
  if(a[i]!=-1){
 printf("frequency of %d = %d \n",a[i],c) ;
  c=1;
  }
}

    return 0 ;
}
```

Q3 reverse the given array.

```
#include <stdio.h>
int main(){
    int a[10]={1,2,3,4,5,6,7,8,9,10},b[10],c=9;
    for (int i = 0; i <10; i++)
    {
```

```
          b[i]=a[c];
          c=c-1;


    }
    for (int k = 0; k < 10; k++)
    {
        printf("%d",b[k]);
    }


    return 0 ;
}
```

Q4 search in given array.

```
# include <stdio.h>
int main(){
    int book[10]={1,2,3,4,5,6,7,8,9,10},b,a;
    printf("enter the number to search-");
    scanf("%d",&a);
    for (int i = 0; i <10; i++)
    {
        if(book[i]==a){
            printf("yes \n");
            printf("at %d index",i+1);
            break;
        }
        else if (i==9)
        {
            printf("no match");
        }

    }

    return 0;
}
```

6-Strings

Q1 check string is anagram or not.

```c
#include <stdio.h>
void main(){
int b[26]={0},l1=0,l2=0,u=0;
char a[100];
char c[100];
printf("enter the string =");
scanf("%s",&a);
printf("enter the string 2 =");
scanf("%s",&c);
for (int i = 0 ; a[i] ; i++)
{
   l1++;
}
for (int i = 0 ; c[i] ; i++)
{
   l2++;
}
if (l1==l2){
for (int i = 0; a[i]; i++)
{
  if(a[i]>64 && a[i]<91)
  {
      b[a[i]-65]++;
  }
  if (a[i]>96 && a[i<123])
  {
      b[a[i]-97]++;
  }
  if(c[i]>64 && c[i]<91)
  {
      b[c[i]-65]++;
  }
  if (c[i]>96 && c[i<123])
  {
      b[c[i]-97]++;
  }
}
for (int i = 0; i < 26; i++)
{
if(b[i]%2==0)
u++;
}
if(u==0)
printf("not anagram");
else
printf("anagram");
```

```
}
else
printf("not anagram");

}
```

Q2 check string is panagram or not.

```
#include <stdio.h>
void main(){
int b[26]={0},c=0;
char a[100];
printf("enter the string=");
scanf("%s",&a);
for (int i = 0; i < 26; i++)
{
    b[i]=0;
}

for (int i = 0; a[i]; i++)
{
    if(a[i]>64 && a[i]<91)
    {
        b[a[i]-65]++;
    }
if(a[i]>96 && a[i]<123)
    {
        b[a[i]-97]++;
    }

}
for (int i = 0;i<26; i++)
{
    if(b[i]==0)
    {
        c++;
    }
}
if(c==0)
printf("it is panagram");
else
printf("not a panagram");

}
```

Q3 find frequency of all.

```c
#include <stdio.h>
void main()
{int c=0;
char a[10];
printf("enter the string=");
scanf("%s",&a);
for (int i = 0; a[i]; i++)
{
for (int k = 0; a[k]; k++)
{
   if(a[i]==a[k])
   {
   c++;
   }
}
printf("%c is %d time \n",a[i],c);
c=0;
}
}
```

Q4 compare two array.

```c
#include <stdio.h>
int  main(){
    int c=0;
char a[10], b[10] ;
printf("enter string a =");
scanf("%s",&a);
printf("enter string b =");
scanf("%s",&b);
for (int i = 0; a[i]; i++)
{
   if ( a[i]!=b[i])
   {

   c++;
   }

}
if(c==0)
printf("both are equal");
else
printf(" both are not equal ");
```

```
return 0;
}
```

7-Pointers.

Q1 input array using pointers.

```
//input array using pointers.
#include <stdio.h>
int main(){
int a,b,*p=&a,d;
printf("enter the size of array=");
scanf("%d",&a);
int x[*p],*m=x;
for (int i = 0; i <*p; i++)
{printf("enter the element in array=");
    scanf("%d",m++);
}
for (int i = 0; i < *p; i++)
{
    printf(" %d ",x[i]);
}

return 0 ;
}
```

Q2 swap two numbers.

```
#include <stdio.h>
int main(){
int a,b,*p=&a,*m=&b,d=0;
printf("enter the first element=");
scanf("%d",&a);
printf("enter the second element=");
scanf("%d",&b);
d=*p;
*p=*m;
*m=d;
printf("first number = %d \n",*p);
```

```
printf("second number = %d",*m);
return 0 ;
}
```

Q3 print 2d array using pointers.

```
//input array using pointers.
#include <stdio.h>
int main(){
int a[3][3]={1,2,3,4,5,6,7,8,9};
int(*p)[3]=a;

for (int i = 0; i <3; i++)
{
    for (int j = 0; j <3 ; j++)
    {
        printf("%d",p[i][j]);
    }printf("\n");

}


return 0 ;
}
```

Q4 count even in array using pointers.

```
#include <stdio.h>
void main(){
int a[8]={2,4,3,4,5,6,7,8},*p,c=0;
p = &a;
for (int i = 0; i<8; i++)
{
    if(*(p+i) %2==0)
    {c++;
    }
}
printf("%d",c);
}
```

Thank you ....