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Program : BSCS 3RD
Grand Assignment : #3

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#include<iostream>
#include<cstring>
#include<conio.h>
using namespace std;
 leapyear(){       int year;
        cout<<"Enter current Year\n";
         cin>>year;
        if(year%4==0)
                if(year%100==0)
                 if(year%400==0)
                        cout<<year<<" is leap year";
                else
                 cout<<year<<" is not leap year";
          else
        cout << year << " is a leap year.";
   else
```

```
        cout << year << " is not a leap year.";
        return 0;

 }
int minimum(int,int,int,int){
        int a , b,c,d;
        cout<<"Enter four integers value: ";
        cin>>a>>b>>c>>d;
        if(a<b)
        cout<<a<<" is minimun. \n";
        else if(c<d)
        cout<<c<<" is minimum . \n";
   else if(b<a)
        cout<<b<<" is minimum . \n";
        else if(d<c)
        cout<<d<<" is minimum . \n";
}
AscendingDescending(){
   int arr[5],num[5],i, j, ascending,desc;
     cout<<"Enter elements for array \t ";
    for(i=0; i<5; i++)
        cin>>arr[i];
```

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 for(i=0; i<5; i++)   //Sorting an array in ascending order
{ for(j=i+1; j<5; j++)
   {  //If there is a smaller element found on right of the array then swap it.
      if(arr[j] < arr[i]) {
    ascending = arr[i];
    arr[i] = arr[j];
    arr[j] = ascending;   }}}
cout<<"Elements of array in sorted ascending order:"<<endl;
for(i=0; i<5; i++)
      cout<<arr[i]<<endl;

 for (i = 0; i < 5; i++)   //  'for' loop is used for sorting the numbers in descending order
{ for (j = i + 1; j < 5; j++){
if (arr[j] > arr[i])  {
desc = arr[i];
arr[i] = arr[j];
arr[j] = desc;
    }}}
cout<<"\n Numbers in Descending Order : \n";
for (i = 0; i < 5; i++)
```

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 cout<<arr[i]<<endl;
  }

   transformArray(){      //Question 17
 int arr[10];
 for(int i=0;i<5;i++)
 cin>>arr[i];
 int temp=0;

  for(int i=0;i<=5/2;i++){
        int temp = arr[5-i-1];
        arr[5-i-1] = arr[i];
        arr[i]=temp;
  }
    cout<<" Array ";
    for(int i=0;i<5;i++)
    cout<<"\t"<<arr[i];
}
  strcopy(){
        char a[20]= {" Strings in C++ \n"};
        cout<<a;
        char b[30] ;
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      cout<<"This is a copy of string : ";
      cout<<strcpy(b,a);
};

lengthofstr(){
            int length = 0;
      char string[20];
      cout<<"Enter string :\t";
      gets(string);

      for (int i = 0 ; string [i] != '\0'; i++)
            length ++;

      cout<<"Lenth of string '"<<string<<" is :"<<length;
}
  ReverseOfString(){   //question 20
     char rev[10] ={"I am iman"};
      cout<<rev<<"\nReverse of This string is :  ";

      for(int i=10;i>=0; i--)
         cout<<rev[i];
        };
```

```
  boolexample(){   //Question 21
        int x;
        (x-5!=5)&&(x-5==5);
        cout<<x;   //Answer is 0.
}

int main(){
        int a,b,c,d, press;
 do{
    cout<<"This is a Grand Assignment 2\n Question from 13 to 23.\n Enter a Program number .\n PRESS 0 for EXIT.\n";

    cin>>press;
    switch(press){

        case 0:
                exit(0);
        break;

        case 13:
                cout<<"****Leap Year Function***** \n";
                leapyear();
```

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        break;

        case 14:
                cout<<"****Minimum User defined function *****\n";
                minimum(a,b,c,d);
        break;

        case 15:
                cout<<”Ascending and descending Program\n”;
     AscendingDescending();
Break;


        case 17:
                cout<<"***Program rotate a single dimension array in 180
degree***\n";
                transformArray();
        break;

        case 18:
                cout<<"***Function copy a string into other string\n";
                strcopy();
```

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        break;

        case 19:
                cout<<"***User defined function calculate a length of
string***\n";
                lengthofstr();
        break;

        case 20:
         cout<<"***Reverse of string function***\n";
          ReverseOfString();
         break;



         default:
                cout<<"Invalid Value!!!";



         } }
         while(1);        //loop will run infinite times
        return 0;
```

```
}
```