DATA STRUCTURE AND ALGORITHM INNOVATIVE PROJECT

ELECT'21

INSTITUTE OF ENGINEERING AND MANAGEMENT, KOLKATA

DEPARTMENT OF CSE-IOT CSBT, 2ND YEAR (2020-24)

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Aman Kumar

ANALYSIS-

In this digital era, some places of India still electing their Sarpanch via 'Parchi' system. Consequently, most of the times, we found dissatisfactory result. As casting of the false votes are huge in number.Many good candidates had suffered due tovarious kind of fraud activities.To diminish this problem, Elect'21 can be used in small panchayati election, where voters can cast their vote more conveniently and safely.

WHAT IS ELECT'21?

Elect'21 is an online forum for voting. It has features like casting vote, live vote count and live announcement of leading candidate.

ABOUT- For this project we used C language programming for all the coding needed for the project.The data structure we have used to make this project is Array.

During the covid-19 pandemic,In all the collegesand universities, college and university elections are put on hold. Our goal is to make an online forum for voting so that people can vote while they are at their places.

By using this software voters can cast their votes to their favourite candidate, can see the live vote counts and get updated with the leading candidate. They will use their unique id to cast their vote and cannot vote again with the same unique id.

APPLICATION – It can also be used for electing class representative, presidential election can be held as well. In short, it is beneficial for all types of small election. Small election can be held easily and more efficiently.

Short Description On Its Function

- To propose a candidate name, we use #define as a constant candidate name throughout the election.
- To hold the screen after every input by user, we used getch()/getchar().
- To cast and count the no. of vote, there are functions called castVote and votesCount respectively.
- We use insertSorted function which confirmed that voters can't vote twice. To check the user's id, a loop(j) is being used via which after casting their vote, their database will go into another array[arr].
- To store the voter details, a simple array[M] is used.
- For cross checking, we built a function seqSearch(), which insures that whether the following voter can vote or not.
- Through getLeadingCandidate(), voters will get the desired candidate name.

PROJECT CODE

CODE LINK :
https://drive.google.com/file/d/1mn77H2l0cDrQNjkx_sm1BoBRunjnJkcR/view?usp=drivesdk

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

#define CANDIDATE_COUNT

#define CANDIDATE1 "Aman Kumar"
#define CANDIDATE2 "Umesh Raj"
#define CANDIDATE3 "Rachana kumari"
#define CANDIDATE4 "Prateek prasoon"

int votesCount1=0, votesCount2=0, votesCount3=0, votesCount4=0, spoiledtvotes=0;
int arr[30]={0};
int p=1;
void castVote(){
//int M[]={1,2,3,4,5,6,7,8,9,10};
//int data;
//printf("\nEnter your unique id:-");
//scanf("%d",&data);

int choice;
printf("\n\n ### Please choose your Candidate ####\n\n");
printf("\n 1. %s", CANDIDATE1);
```

```
printf("\n 2. %s", CANDIDATE2);
printf("\n 3. %s", CANDIDATE3);
printf("\n 4. %s", CANDIDATE4);
printf("\n 5. %s", "None of These");
printf("\n\n Input your choice (1 - 5) : ");
scanf("%d",&choice);

switch(choice){
   case 1: votesCount1++; break;
   case 2: votesCount2++; break;
   case 3: votesCount3++; break;
   case 4: votesCount4++; break;
   case 5: spoiledtvotes++; break;
   default: printf("\n Error: Wrong Choice !! Please retry");
         //hold the screen
getchar();
}
printf("\n thanks for vote !!");
getch();
}
int insertSorted(int arr[], int p, int data,  int capacity)
{
// Cannot insert more elements if n is
 // already more than or equal to capacity
 if (p >= capacity)
return p;
arr[p] = data;
  return (p + 1);
```

```
}
void votesCount(){
printf("\n\n ##### Voting Statics ####");
printf("\n %s - %d ", CANDIDATE1, votesCount1);
printf("\n %s - %d ", CANDIDATE2, votesCount2);
printf("\n %s - %d ", CANDIDATE3, votesCount3);
printf("\n %s - %d ", CANDIDATE4, votesCount4);
printf("\n %s - %d ", "None of the above", spoiledtvotes);
printf("\n");
getch();
}

void getLeadingCandidate(){
printf("\n\n  #### Leading Candiate ####\n\n");
   if(votesCount1>votesCount2 && votesCount1>votesCount3 && votesCount1
>votesCount4)
printf("[%s]",CANDIDATE1);
   else if (votesCount2>votesCount3 && votesCount2>votesCount4 && votesCount2
>votesCount1)
printf("[%s]",CANDIDATE2);
   else if(votesCount3>votesCount4 && votesCount3>votesCount2 && votesCount3
>votesCount1)
printf("[%s]",CANDIDATE3);
   else if(votesCount4>votesCount1 && votesCount4>votesCount2 && votesCount4
>votesCount3)
printf("[%s]",CANDIDATE4);
   else
printf("----- Warning !!! No-win situation----");
```

```
getch();

}

void seqsearch()
{
        int i,n,j,data,x;
        int M[]={1,2,3,4,5,6,7,8,9,10};
        printf("You want to vote???");
        printf("\n1.Yes \n2.No\n");
        printf("Enter your choice:");
        scanf("%d",&x);
        if(x==1)
        {
        printf("\nEnter your unique id:-");
scanf("%d",&data);
   for(j=0;j<10;j++)
   {
   if(arr[j]==data)
   {
        printf("\nYou can't vote\nYou have already voted");
        getch();
        break;
   }
   }
   if(arr[j]!=data)
   {
        for(i=0;i<10;i++)
```

```
        {
                if(M[i]==data)
                {
                        printf("Welcome\nYou can vote");
                        castVote();
                        break;
                }
        }
        if(M[i]!=data)
        {
                printf("\nYou can't vote");

        }
   }
        }
   if(x==2){
        printf("\nThank you");
        getch();
        getch();
  }
if(x!=2 && x!=1)
  {
        printf("Invalid input");
        getch();
   }
   int capacity = sizeof(arr) / sizeof(arr[0]);
insertSorted(arr,p,data,capacity);
   p=p+1;
```

```
}


int main()
{
int i;
int choice;
int arr[30]={0};

do{
printf("\n\n ###### Welcome to Election/Voting 2021 #####");
printf("\n\n 1. Cast the Vote");
printf("\n 2. Find Vote Count");
printf("\n 3. Find leading Candidate");
printf("\n 4. Exit");

printf("\n\n Please enter your choice : ");
scanf("%d", &choice);

switch(choice)
{
case 1: seqsearch();getch();break;
case 2: votesCount();getch();break;
case 3: getLeadingCandidate();getch();break;
case 4: exit(0);
default: printf("\n Error: Invalid Choice");getch();getch();continue;
}
```

```
}while(choice!=0);

//hold the screen
getchar();

return 0;
}
```

Result discussion

The execution of the program written for “Elect21” is successfully done. The voter is successfully casting their votes to elected candidates. Live voting count after voting is successfully showing and leading candidate is successfully updating according to the vote count. When we run the program, it will show the below screen,

Here we can choose any of the given choices.

Let’s suppose we choose 1st option that is ‘cast the vote’.

It will show the following screen,

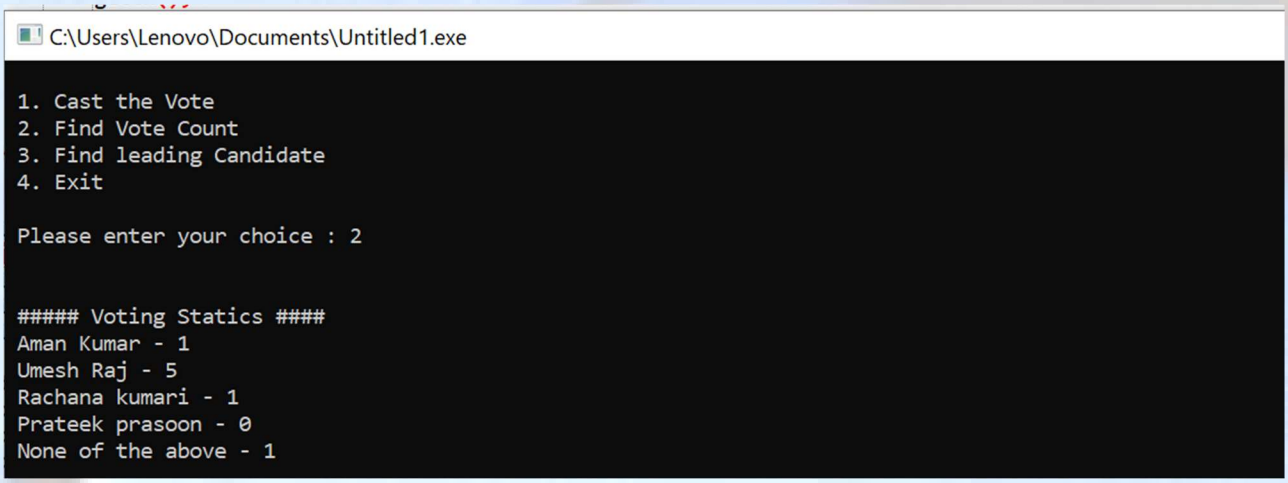
```
###### Welcome to Election/Voting 2021 #####

 1. Cast the Vote
 2. Find Vote Count
 3. Find leading Candidate
 4. Exit

 Please enter your choice : 1
You want to vote???
1.Yes
2.No
Enter your choice:1

Enter your unique id:-1
Welcome
You can vote

 ### Please choose your Candidate ####


 1. Aman Kumar
 2. Umesh Raj
 3. Rachana kumari
 4. Prateek prasoon
 5. None of These

 Input your choice (1 - 5) : 1

 thanks for vote !!
```

Here we have given that the unique id should be between 1-10. It can be change accordingly.

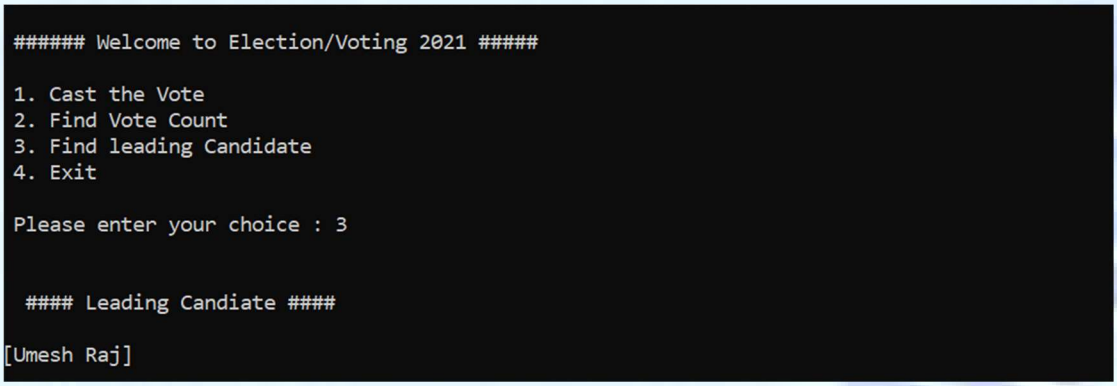
Now, suppose after voting once we went to vote again with the same unique id, then below screen will be shown,

```
###### Welcome to Election/Voting 2021 #####

 1. Cast the Vote
 2. Find Vote Count
 3. Find leading Candidate
 4. Exit

 Please enter your choice : 1
You want to vote???
1.Yes
2.No
Enter your choice:1

Enter your unique id:-1

You can't vote
You have already voted
```

Now to look at the vote count, we can choose 2nd choice that is “Find vote count”.



To see the leading candidate, choose 3rd choice i.e. “Finding leading candidate”



Lastly we can exit by choosing 4th option.

DISCUSSION

The whole programming is done keeping in view of what voter will see on their screen which is frontend view. We will keep updating the code in the near future as per the requirement. We can also show here the list of voter through their unique id which is subject to privacy. We can

also include registration and login function in the near future for prior registration of voters.

CONCLUSION

Our project "Elect'21" is successfully executed. Through this project we tried to create a safe and convenient form of election for class representative, college/universities presidential election etc through online voting. After further modification in the program and inclusion of file handling may lead to the practical implementation of "Elect'21".