Election Management System: Innovative Assignment

Course Code and Name: 2CS101-Computer Programming

Group Members:

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TITLE:

Election Management System

OBJECTIVE:

The given project aims to introduce the students to the field of programming using C language with an objective to enhance their logic building skills and use the same for writing programs in C.
In this project, we are implementing the concepts of C language to make Election Management System.

INTRODUCTION:

In today's era, we consider technology for our backup. From wake up Alarms to national security everything is in the hands of technology. And so, it plays a vital role in choosing a leader. By leader, we don't mean a school or a college leader but a leader who leads the country. The leader which we choose with the help of a procedure or a system known as Election Management System. A System designed and built in such a way that there is no room for corruption like exchanging votes. A user-friendly, enhancing user-interaction in a positive way.

METHODOLOGY:

Features of C language used:

- **File handling**

  In this project we need to store the data fetched from voter. So one such way to store the fetched information in a file is by using a feature known as File Handling in C.

- **Functions**

  While coding when we have to repeat a code more than once. We use function so that there is just this one line in program that can be repeated without making it tiresome. Some of the Functions used in this program are: castVote(), voteCount(), getLeadingCandidate().

- **Structure**

  A user defined data type used to group items of possibly different types into a single type. A structure of details has been declared using “struct” declaration statements which includes name character and code (integer data type).

- **Conditional Statements**

  What if I vote for BJP or Congress. For this kind of situations where when we vote for a particular party we need to display its result we use the switch-case statements.

- **Pointers**

  These are used to store address of variables or a memory location. We can use pointer to modify the data of variable and to read the value/data of variable.

- **Concepts of Array and Searching the element using index**

  When we have to store a large number of objects we store them under one variable as array. Through array we can do several operations. Here index (starting from 0) are indicated to an element in array.

- **Global and Local Declaration of the variables**

- **Character Array**

  To store the name of voters.

- **Mathematical and Relational Operators**

PART OF CODE/PROJECT DONE BY:

21CEJ033 Urvish Patel

➢ File Handling:

I have implemented the file handling feature in this project. In which using file handling, the final report of how many voters are there, who votes which candidate, the final vote counts of each candidates and final result of the election session will be documented.

```
//FILE HANDLING

FILE *fp;
```

```
fprintf(fp,"\n\n### Final Vote Count ###\n");
fprintf(fp,"\n CANDIDATE[1] %s - %d ", CANDIDATE1, votesCount[0]);
fprintf(fp,"\n CANDIDATE[1] %s - %d ", CANDIDATE2, votesCount[1]);
fprintf(fp,"\n CANDIDATE[1] %s - %d ", CANDIDATE3, votesCount[2]);
fprintf(fp,"\n CANDIDATE[1] %s - %d ", CANDIDATE4, votesCount[3]);
fprintf(fp,"\n CANDIDATE[1] %s - %d ", CANDIDATE5, votesCount[4]);
```

```
printf("\n\n### Final Voted Candidate ###\n\n");
int max=getLeadingCandidate();

if(j==1)
{
    fprintf(fp,"\n\nCANDIDATE[%d] is leading having %d votes\n\n",(max_i[j-1]+1),max);
}

else
{
    for(int i=0;i<j;i++)
        fprintf(fp,"CANDIDATE[%d] ",(max_i[i]+1));

    fprintf(fp,"are leading having same %d votes",max);
}

fprintf(fp,"\n\nTotal Voters = %d\n",voters);

fprintf(fp,"\nThank You!!!");

printf("Thank You!!!\n");

fclose(fp);
```

➢ Flowchart:

I have prepared the flowchart in this project. Flowchart is used to tell how code works in pictorial way. It represent step in which code is running.

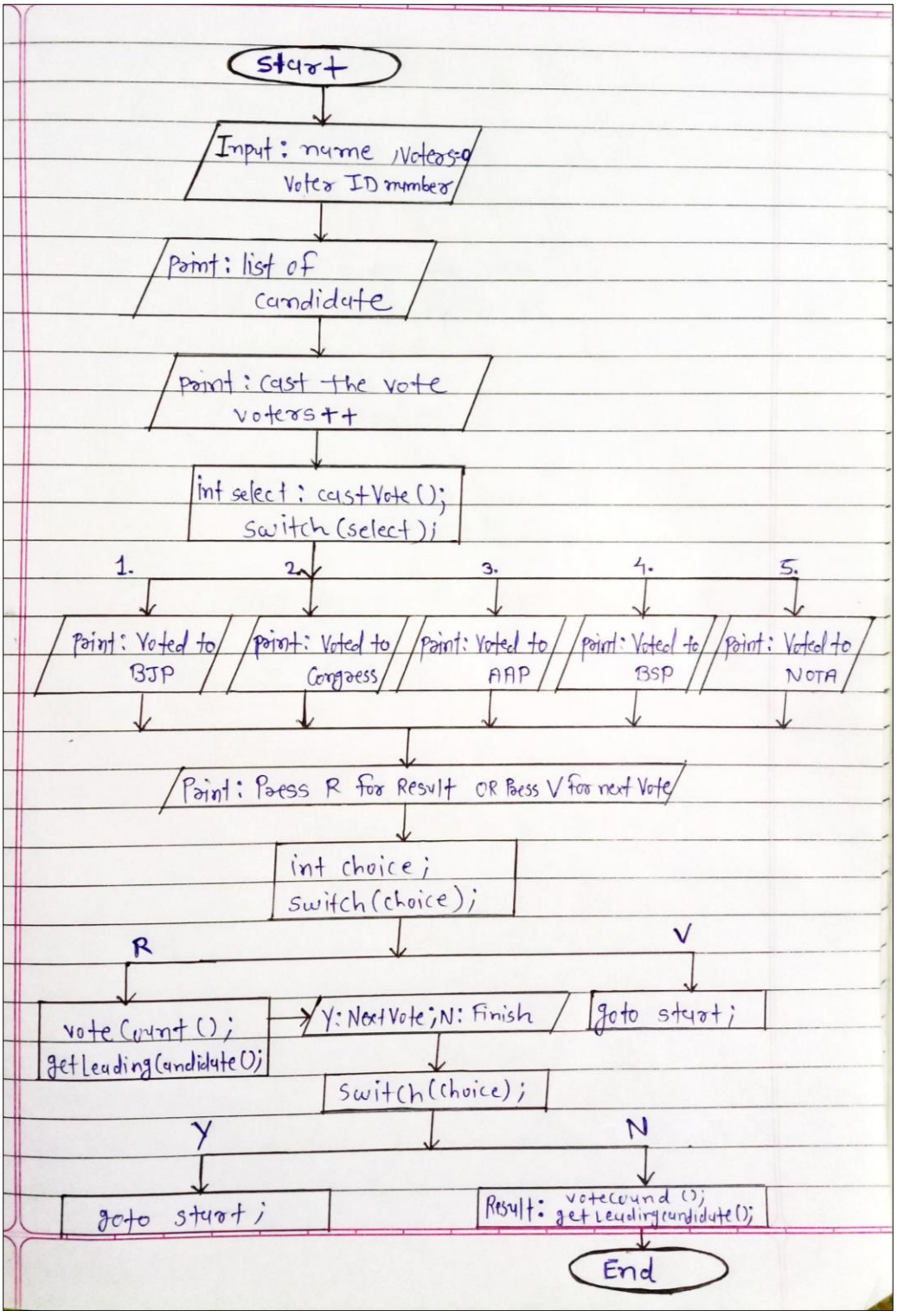
I have prepared the flowchart for main function, castVote() function, voteCount() function and getLeadingCandidate() function.

➢ Basic Editing in overall code:

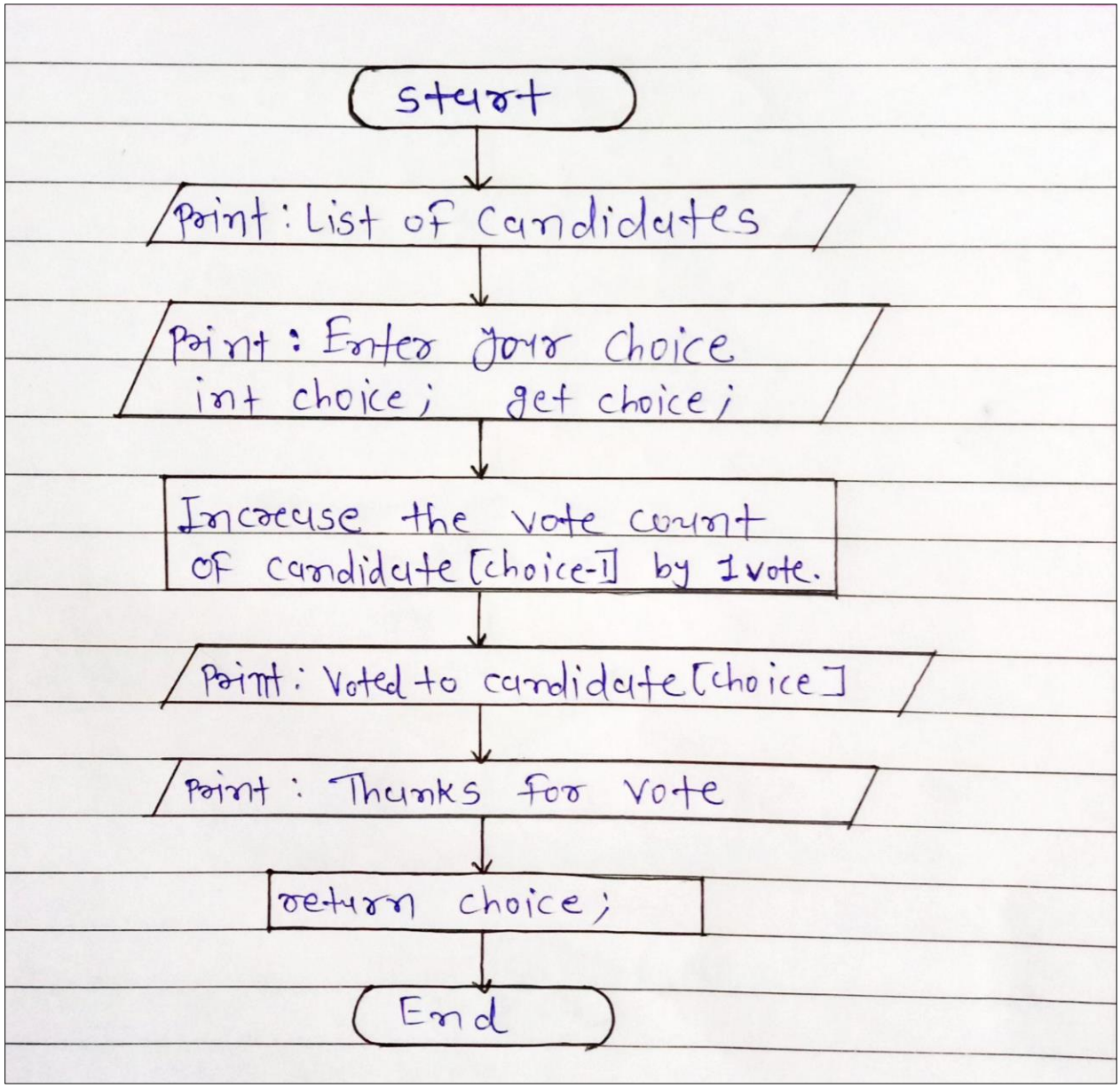
Debugging the code, Error Rectification and Modifications.

Flowcharts:

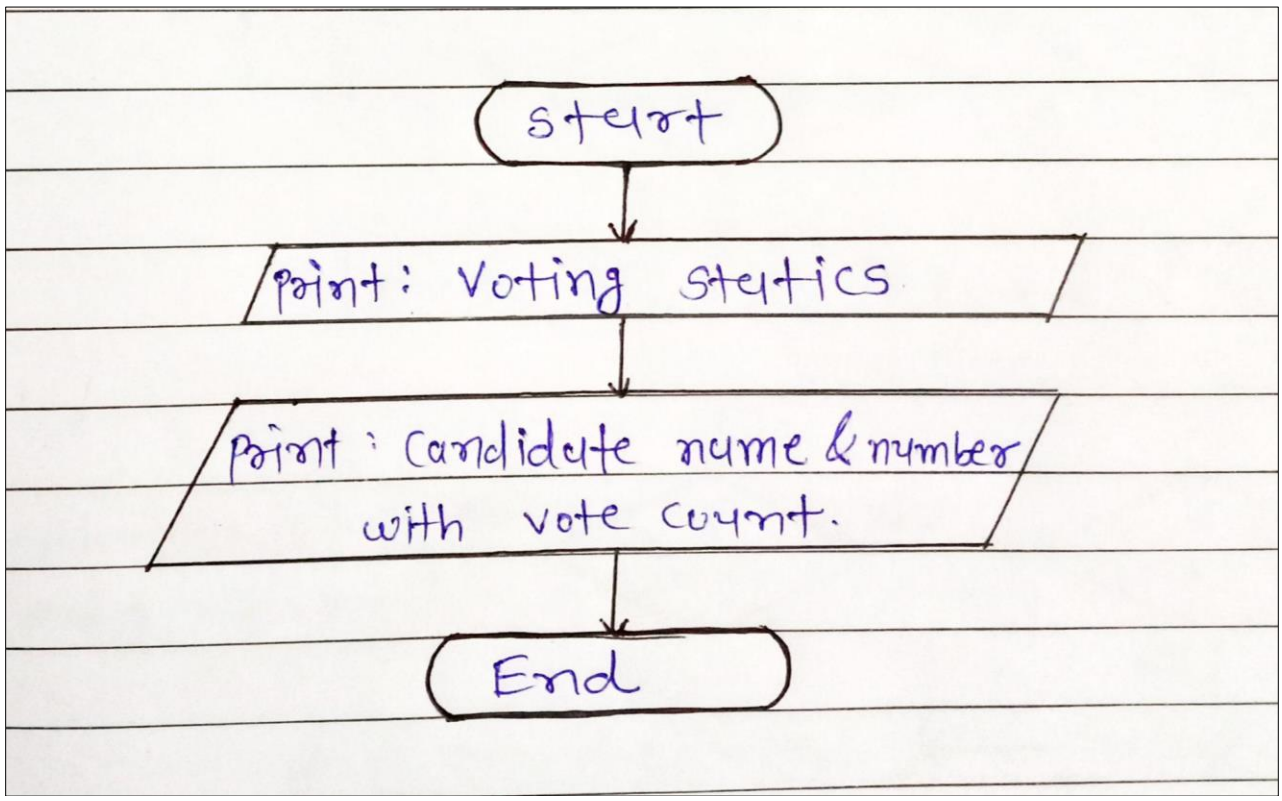
Flowchart for Main Function:



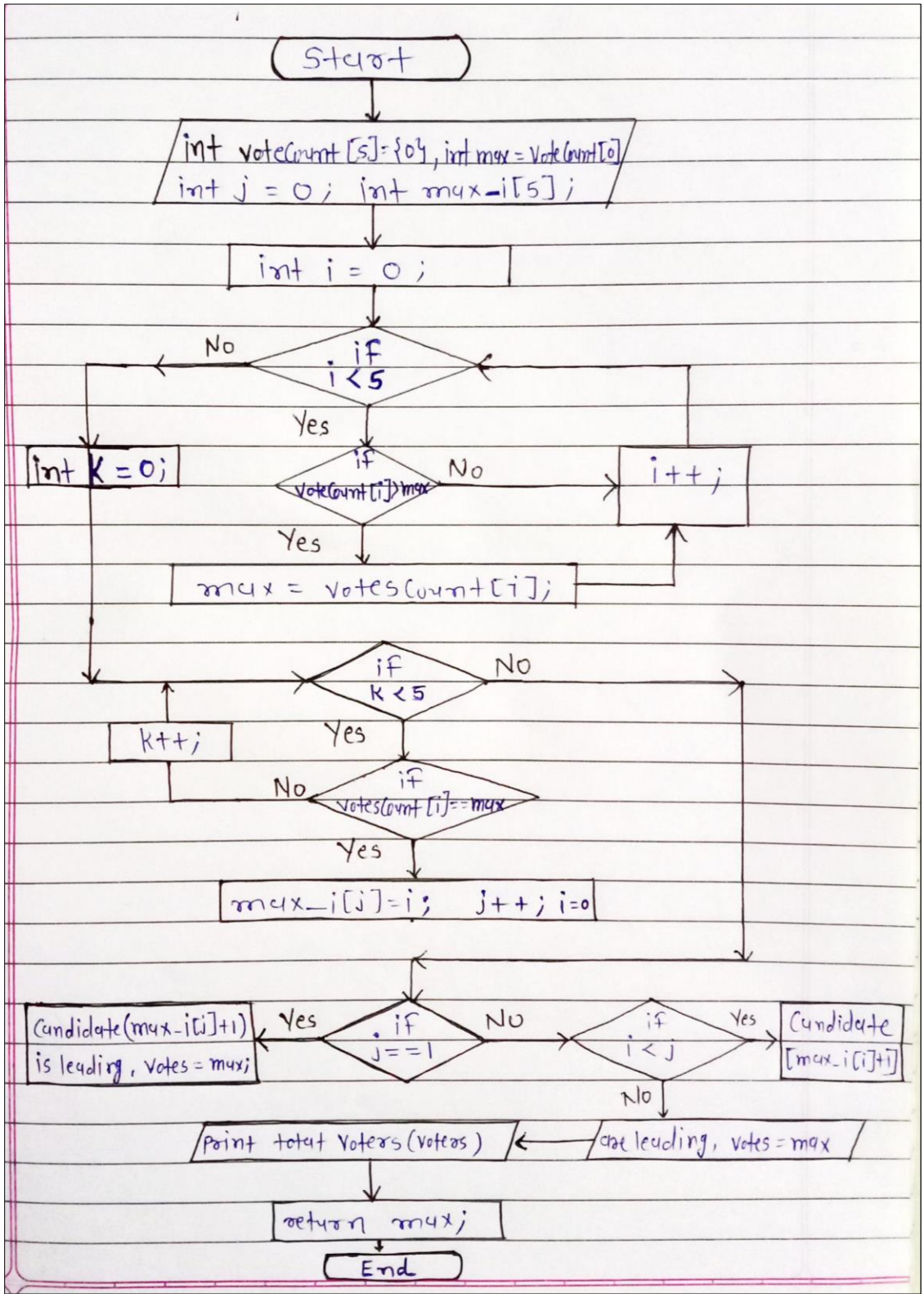
Flowchart for Cast Vote Function:



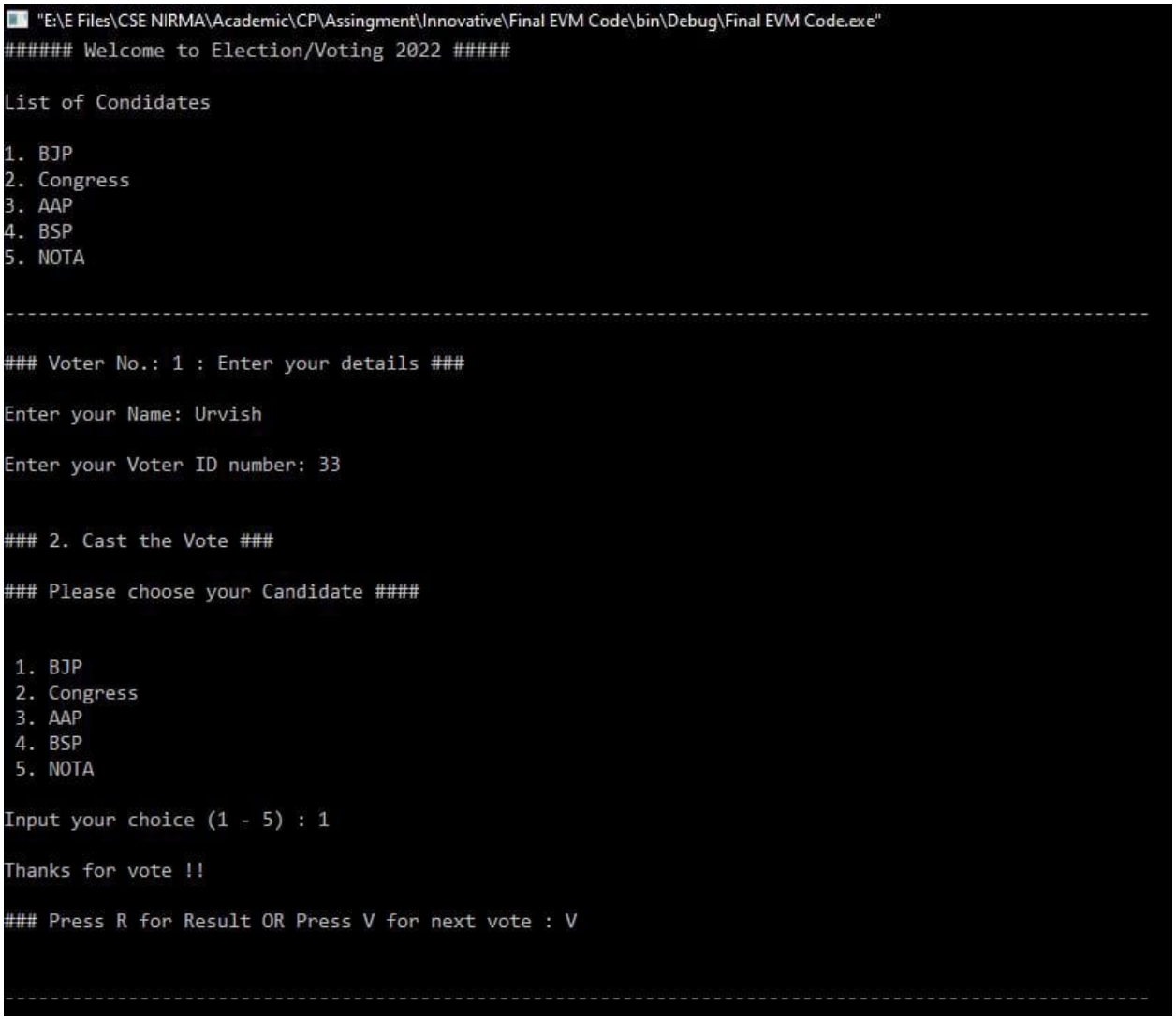
Flowchart For Vote Count Function:



Flowchart for Get Leading Candidate Function:



OUTPUT:


"E:\E Files\CSE NIRMA\Academic\CP\Assingment\Innovative\Final EVM Code\bin\Debug\Final EVM Code.exe"
Welcome to Election/Voting 2022
List of Condidates
1. BJP
2. Congress
3. AAP
4. BSP
5. NOTA
Voter No.: 1 : Enter your details
Enter your Name: Urvish
Enter your Voter ID number: 33
2. Cast the Vote
Please choose your Candidate
1. BJP
2. Congress
3. AAP
4. BSP
5. NOTA
Input your choice (1 - 5) : 1
Thanks for vote !!
Press R for Result OR Press V for next vote : V

```
--------------------------------------------------------------------------------------------------------

### Voter No.: 2 : Enter your details ###

Enter your Name: Nisarg

Enter your Voter ID number: 101


### 2. Cast the Vote ###

### Please choose your Candidate ####


 1. BJP
 2. Congress
 3. AAP
 4. BSP
 5. NOTA

Input your choice (1 - 5) : 1

Thanks for vote !!

### Press R for Result OR Press V for next vote : R
```

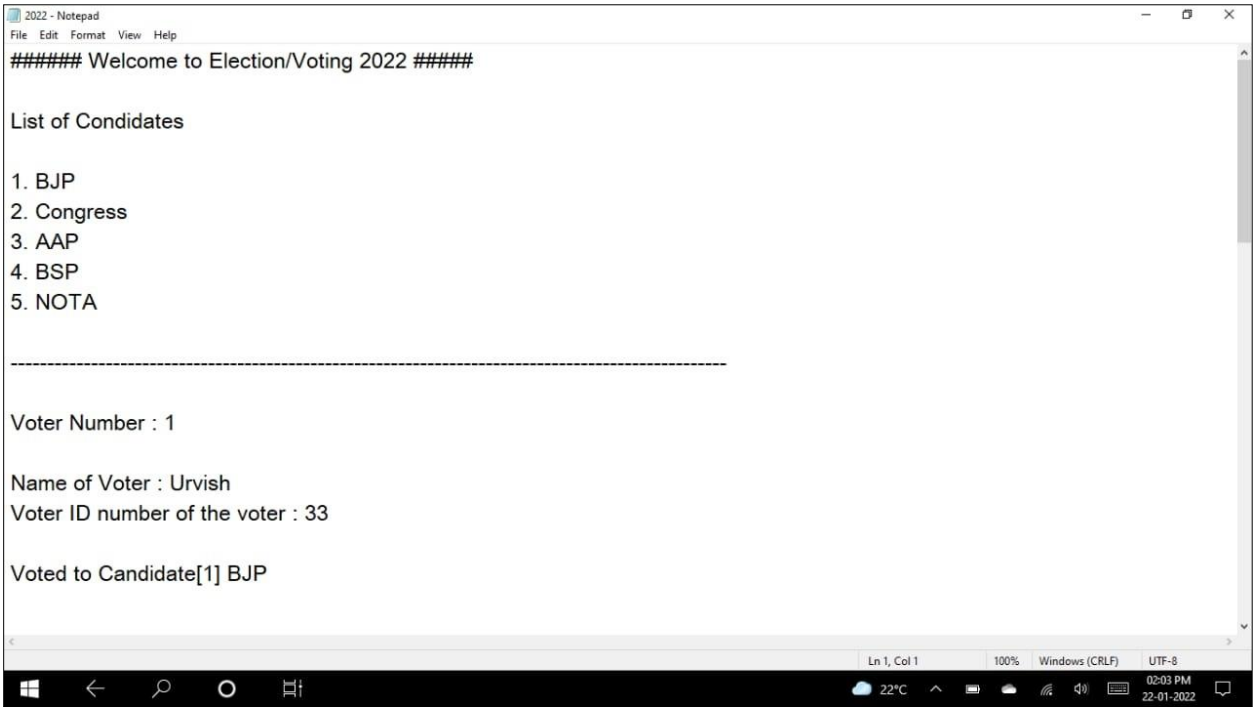
```
### Press R for Result OR Press V for next vote : R


### Vote Count ###

##### Voting Statics ####
 BJP - 2
 Congress - 0
 AAP - 0
 BSP - 0
 NOTA - 0

### Leading Candidate ###

CANDIDATE[1] is leading having 2 votes

Total Voters = 2



### Do you want to proceed for next vote?

Press Y for Yes and N for No : Y
```

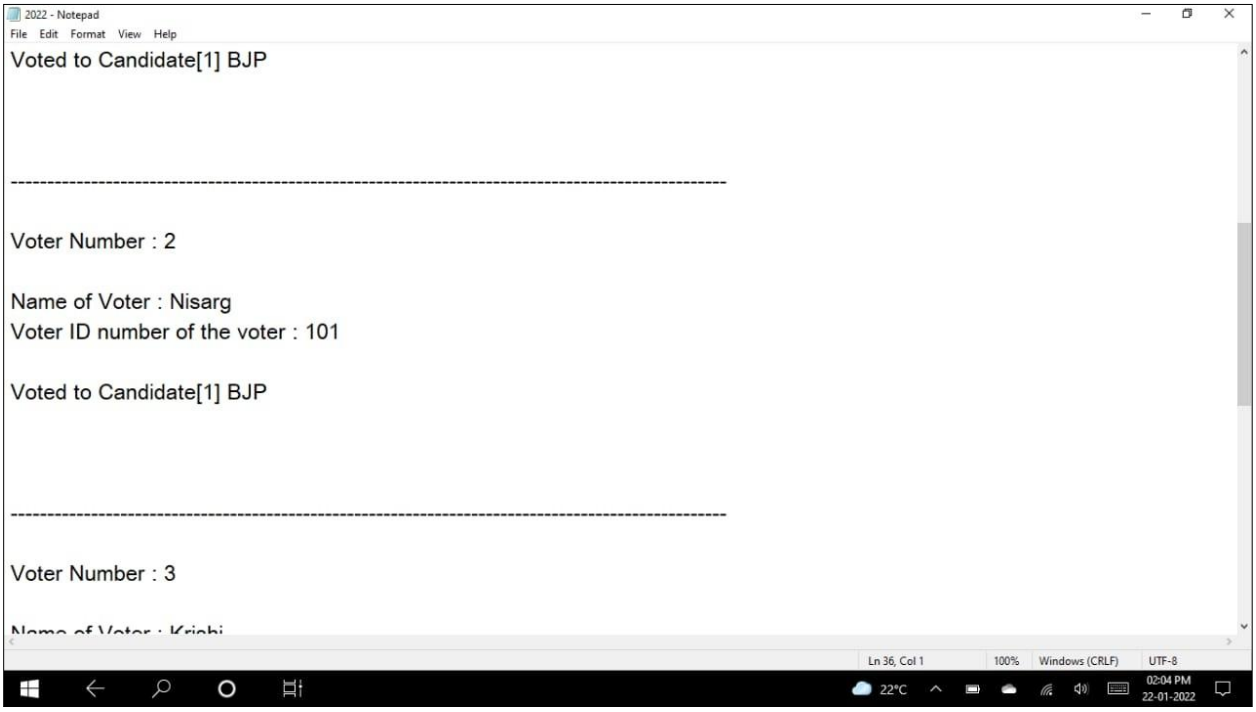
```
---------------------------------------------------------------------------------------------------

### Voter No.: 3 : Enter your details ###

Enter your Name: Krishi

Enter your Voter ID number: 38


### 2. Cast the Vote ###

### Please choose your Candidate ####


 1. BJP
 2. Congress
 3. AAP
 4. BSP
 5. NOTA

Input your choice (1 - 5) : 2

Thanks for vote !!

### Press R for Result OR Press V for next vote : R
```

```
### Press R for Result OR Press V for next vote : R


### Vote Count ###

##### Voting Statics ####
 BJP - 2
 Congress - 1
 AAP - 0
 BSP - 0
 NOTA - 0

### Leading Candidate ###

CANDIDATE[1] is leading having 2 votes

Total Voters = 3



### Do you want to proceed for next vote?
```

```
### Do you want to proceed for next vote?

Press Y for Yes and N for No : N


Thanks for voting



### Final Vote Count ###

##### Voting Statics ####
 BJP - 2
 Congress - 1
 AAP - 0
 BSP - 0
 NOTA - 0

### Final Voted Candidate ###

CANDIDATE[1] is leading having 2 votes

Total Voters = 3

Thank You!!!

Process returned 0 (0x0)   execution time : 38.727 s
Press any key to continue.
```

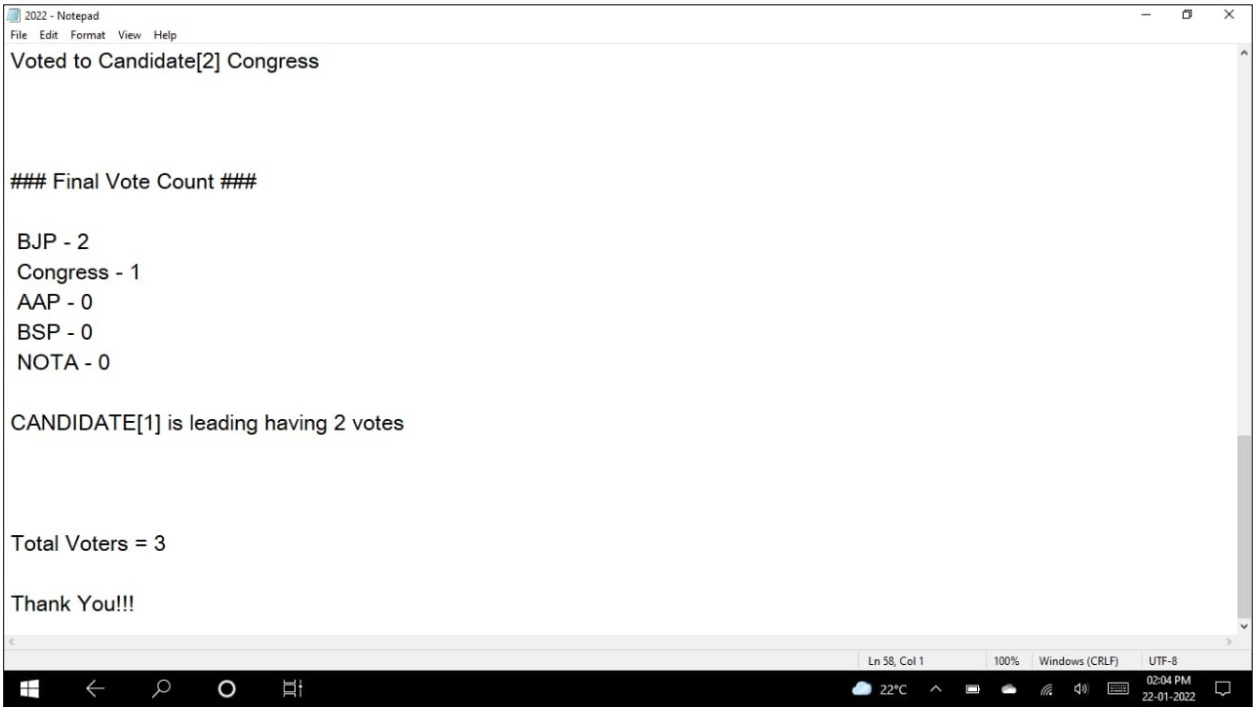
File Handling:






2022 - Notepad
File Edit Format View Help

Voter Number : 3
Name of Voter : Krishi
Voter ID number of the voter : 38
Voted to Candidate[2] Congress
Final Vote Count
BJP - 2
Congress - 1
AAP - 0
BSP - 0
NOTA - 0
Ln 47, Col 1
100%
Windows (CRLF)
UTF-8
22°C
02:04 PM
22-01-2022


2022 - Notepad
File Edit Format View Help
Voted to Candidate[2] Congress
Final Vote Count
BJP - 2
Congress - 1
AAP - 0
BSP - 0
NOTA - 0
CANDIDATE[1] is leading having 2 votes
Total Voters = 3
Thank You!!!
Ln 58, Col 1
100%
Windows (CRLF)
UTF-8
22°C
02:04 PM
22-01-2022

Code:

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

//GLOBAL DECLARATIONS

#define CANDIDATE1 "BJP"
#define CANDIDATE2 "Congress"
#define CANDIDATE3 "AAP"
#define CANDIDATE4 "BSP"
#define CANDIDATE5 "NOTA"


int votesCount[5]={0,0,0,0,0},max_i[5]={0},j=0,voters=0;


//FILE HANDLING

FILE *fp;


//STRUCTURE

struct details
{

   char name[50];
   int code;
};


//FUNCTIONS

int castVote();

void voteCount();

int getLeadingCandidate();
```

```
//Main Function

int main()
{

fp=fopen("2022.txt","a");


printf("###### Welcome to Election/Voting 2022 #####");
printf("\n\nList of Condidates\n\n");
printf("1. %s \n2. %s \n3. %s \n4. %s \n5.
%s",CANDIDATE1,CANDIDATE2,CANDIDATE3,CANDIDATE4,CANDIDATE5);


fprintf(fp,"###### Welcome to Election/Voting 2022 #####");
fprintf(fp,"\n\nList of Condidates\n\n");
fprintf(fp,"1. %s \n2. %s \n3. %s \n4. %s \n5.
%s",CANDIDATE1,CANDIDATE2,CANDIDATE3,CANDIDATE4,CANDIDATE5);



vote:

printf("\n\n----------------------------------------------------------------------------------------------------
-");
fprintf(fp,"\n\n----------------------------------------------------------------------------------------------------
-");
voters++;
printf("\n\n### Voter No.: %d : Enter your details ###",voters);
fprintf(fp,"\n\nVoter Number : %d",voters);

struct details det;

printf("\n\nEnter your Name: ");
fflush(stdin);
gets(det.name);

printf("\nEnter your Voter ID number: ");
scanf("%d",&det.code);


fprintf(fp,"\n\nName of Voter : %s \nVoter ID number of the voter :
%d\n",det.name,det.code);
```

```
printf("\n\n### 2. Cast the Vote ###");
int select=castVote();

switch(select)
{
case 1:
fprintf(fp,"\nVoted to Candidate[%d] BJP\n\n",select);
break;

case 2:
fprintf(fp,"\nVoted to Candidate[%d] Congress\n\n",select);
break;

case 3:
fprintf(fp,"\nVoted to Candidate[%d] AAP\n\n",select);
break;

case 4:
fprintf(fp,"\nVoted to Candidate[%d] BSP\n\n",select);
break;

case 5:
fprintf(fp,"\nVoted to Candidate[%d] NOTA\n\n",select);
break;

}

printf("\n\n### Press R for Result OR Press V for next vote : ");
char choice;
scanf(" %c",&choice);

main_option:

switch(choice)
{

case 'R':
{
printf("\n\n### Vote Count ###");
voteCount();

printf("\n\n### Leading Candidate ###\n\n");
getLeadingCandidate();


option:
```

```
printf("\n\n### Do you want to proceed for next vote? \n\nPress Y for Yes and N for No :
");
scanf(" %c",&choice);

if(choice=='Y')
   goto vote;
else if(choice=='N')
   {
      printf("\n\nThanks for voting\n\n");
      goto final_result;
   }
else
{
   printf("\n\n!!! Invalid Input ~ Error");
   goto option;
}
}

case 'V':
{
   goto vote;
}

default:
{
   printf("\n\n!!! Invalid Input ~ Error");
   goto main_option;
}

}


final_result:

printf("\n\n### Final Vote Count ###");
voteCount();

fprintf(fp,"\n\n### Final Vote Count ###\n");
fprintf(fp,"\n %s - %d ", CANDIDATE1, votesCount[0]);
fprintf(fp,"\n %s - %d ", CANDIDATE2, votesCount[1]);
fprintf(fp,"\n %s - %d ", CANDIDATE3, votesCount[2]);
fprintf(fp,"\n %s - %d ", CANDIDATE4, votesCount[3]);
fprintf(fp,"\n %s - %d ", CANDIDATE5, votesCount[4]);
```

```
printf("\n\n### Final Voted Candidate ###\n\n");
int max=getLeadingCandidate();

if(j==1)
{
   fprintf(fp,"\n\nCANDIDATE[%d] is leading having %d votes\n\n",(max_i[j-1]+1),max);
}

else
{
   for(int i=0;i<j;i++)
      fprintf(fp,"CANDIDATE[%d] ",(max_i[i]+1));

   fprintf(fp,"are leading having same %d vote count",max);
}

fprintf(fp,"\n\nTotal Voters = %d\n",voters);

fprintf(fp,"\nThank You!!!");

printf("Thank You!!!\n");

fclose(fp);

return 0;
}
```

//Cast Vote Function

```
int castVote()
{
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", CANDIDATE5);

printf("\n\nInput your choice (1 - 5) : ");
scanf("%d",&choice);

votesCount[choice-1]++;

printf("\nThanks for vote !!");

return choice;
}
```

//Vote Count Function

```
void voteCount()
{
printf("\n\n##### Voting Statics ####");
printf("\n %s - %d ", CANDIDATE1, votesCount[0]);
printf("\n %s - %d ", CANDIDATE2, votesCount[1]);
printf("\n %s - %d ", CANDIDATE3, votesCount[2]);
printf("\n %s - %d ", CANDIDATE4, votesCount[3]);
printf("\n %s - %d ", CANDIDATE5, votesCount[4]);
}
```

//Get Leading Candidate Function

```
int getLeadingCandidate()
{

int max=votesCount[0];

for(int i=0;i<5;i++)
{
   if(votesCount[i]>max)
   {
      max=votesCount[i];
   }
}

j=0;
for(int i=0;i<5;i++)
{
   if(votesCount[i]==max)
   {
      max_i[j]=i;
      j++;

   }
}

if(j==1)
{
   printf("CANDIDATE[%d] is leading having %d votes",(max_i[j-1]+1),max);
}

else
{
   for(int i=0;i<j;i++)
      printf("CANDIDATE[%d] ",(max_i[i]+1));

   printf("are leading having same %d vote count",max);
}

printf("\n\nTotal Voters = %d\n\n",voters);

return max;

}
```