

CSED232 Object Oriented Programming (Spring 2019)

Programming Assignment #2

질문 사항 정리

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1. 소스코드 관련

소스코드 버그 관련 수정 및 배포 하여 공지 하였습니다. 배포된 코드 사용여부는 점수에 반영 되지 않습니다. 본인 상황에 따라 사용하셔도 좋고, 사용하지 않으셔도 됩니다.

* 수정사항

1) 메뉴 선택 시 엔터만 입력하는 경우

Selected Menu:(공백) 출력-> Undefined Menu Selection 출력 -> 해당 입력에 대해서는 로그 기록 안하도록 수정.

2) 로그에 빈 줄이 있는 경우

해당 라인을 읽은 뒤, Selected Menu:(공백) 출력 -> Undefined Menu selection 출력 -> 다음 메뉴 선택 화면 출력 하도록 수정

3) 메뉴에 없는 기능 선택시 로그파일 기록 하도록 수정

4) 모든 커맨드 읽은 뒤, Undefined menu selection 출력 버그 -> 수정

5) commandLog.txt 파일의 마지막 빈 줄 읽고 Undefined menu selection 출력 오류 수정

2. 메뉴 기능 수행 관련

1) 실패 케이스 처리시 해당 입력을 모두 입력 받은 뒤 처리해야 하는가?

-> 모든 입력 받은 후 처리 부탁 드립니다. 예를 들어, 이미 로그인 되어있는 사용자가, 다시 로그인 요청하는 경우 라면,

ID: id1

Password: pwd1

와 같이 모든 입력 받은 뒤, 실패 메시지 출력하고, 로그파일 상에는 다음과 같은 기록이 남게 됩니다.

...

3 id1 pwd1

...

2) 다른 회원으로 로그인 하고 싶은 경우/ 중복 로그인 관련

-> 이미 로그인 된 상태에서, 다른 회원으로 로그인 하고 싶은 경우, 로그 아웃 후 진행해야 합니다. 중복 로그인 불가하며, 로그 아웃시에도 현재 로그인 된 회원 한 명의 사용자만이 로그 아웃 될 수 있습니다. 즉, 시스템 상에는 최대 1명의 회원만이 로그인 상태가 존재할 수 있습니다.

3) 회원탈퇴 하는 경우 해당 회원이 제안한 투표는 어떻게 되는가?

-> 회원 탈퇴 시에도 해당 회원이 제안한 투표는 시스템상에 남게 되며, 해당 회원이 투표한 기록도 남게 됩니다.

4) 메뉴 파싱 토큰 수 및 액세스 위반 예러 관련

-> 모든 입력 정보는 띄어쓰기 없는 것으로 간주하며, 로그 파일 상의 최대 토큰의 수는 4개입니다. 따라서 5번째 토큰을 액세스할 경우는 고려하지 않고 구현하시면 됩니다. 따라서 액세스 위반 예러가 날 경우도 없어야 하며, 토큰 수가 4개임에도 불구하고, 다른 소스코드상의 오류로 프로그램 예러가 나는 경우, 감점이 됩니다.

5) STL 관련

-> 리스트 구현시 배열 사용, string STL 사용 가능.

6) 메뉴 기능수행 제한 사항 관련 추가 설명

과제 기술서에 명시된 제한 사항 관련 추가 설명입니다. 편의상 아래 명시된 Maximum 값 이하의 경우만 테스트할 예정입니다. 따라서, 이를 넘는 경우에 대한 예외 처리는 하지 않으셔도 됩니다.

저장 가능한 최대 회원 수: 50	시스템 상에 등록 가능한 최대 회원 수, 탈퇴 한 회원 수 포함
저장 가능한 최대 투표 수: 100	시스템 상에 등록 가능한 최대 투표 수, 삭제 한 투표 수 포함
각 투표별 최대 투표 항목 수: 10	각 투표 별 최대 항목 수, 각 투표 제안시, 투표 항목 수는 1개이상 10개이하로 설정 가능.
RRN, ID, Password, 투표 주제 최대 길이: 32	입력으로는 공백이 포함되지 않는 것으로 가정하고, 그러한 문자열의 길이를 의미함
커맨드 로그 파일 이름: "commandLog.txt"	로그 입출력을 수행하는 파일 명. 사용자 입력도 해당 파일에 기록되며, read시에도 해당 파일에서 읽어 들임.

7) 성공/실패 메시지 형식

별도의 형식은 없고, 성공/실패 여부만 알아 볼 수 있게 출력 부탁드립니다. 실패 사유등은 출력하지 않아도 됩니다.

3. 로그 관련

1) 잘못된 로그는 기록하지 않는가?

-> Failure case에 관련한 로그는 기록하며, 사용자 입력 할 수 없는 경우의 입출력은 고려하지 않아도 됩니다. 예를 들어, 다음과 같은 형태의 내용은 로그파일에 존재 하지 않는 것으로 생각합니다.

```
...
1 1111 id1 pwd1 extra extra extra
...
```

그 이유는, 예를 들어 1. 회원 가입 진행을 로그 파일이 아닌 stdin로부터 입력 받아 수행 하는 경우,

```
...
RRN: 1111
ID: id1
Password: pwd1
...
```

와 같이 입력 정보를 받아 온 후, 바로 다시 메뉴 선택 화면으로 돌아가게 됩니다. 메뉴 선택 화면으로 돌아가서 다시 다음 메뉴 입력을 받는 경우, 로그 파일 상에 다음 라인에 입력이 기입되므로, 결과적으로는 "extra"에 해당하는 부분의 정보는 기입되지 못할 것입니다. 로그 파일은 사용자 사용 기록을 남기는 파일이므로, 마찬가지로 사용자 입력에 의해 받을 수 없는 형태의 로그는 존재하지 않게 됩니다. stdin 모드에서 입력 받을 수 없는 형태의 로그 형태는 없다고 생각하면 되고, 채점시에도 그러한 형태의 로그는 없습니다.

2) 로그 입출력 파일명?

->입력 출력 모두 commandLog.txt로 부탁드립니다

3) 4. Logout, 7 List All Vote Item의 경우 추가 입력을 받지 않는데, 로그 기록 형태는 어떻게 되는가?

기존에 공지된 과제기술서 4.2 로그 파일 형식을 참고하시면 해당 로그는

메뉴명만 기록 됩니다. 예시 형태는 다음과 같습니다.

```
...
4
7
....
```

4) loadMode 입력은 0 또는 1로만 가정하면 되는가?

그렇습니다.

4. 추가 실행 화면

1~8까지의 모든 기능의 성공/실패 case가 포함된 예시 화면 입니다.

commandLog.txt

```
1 1111 id1 pwd1
1 1111 id1 pwd1
3 id1 pwd1
3 id1 pwd1
2 id1 pwd1
2 id1 pwd1
1 1111 id1 pwd1
4
3 id1 pwd1
4
3 id1 pwd1
5 vote1
6 vote1 4
6 vote2 10
7
8 vote1 1
7
8 vote1 2
7
8 vote2 10
7
4
1 1112 id2 pwd2
3 id2 pwd2
8 vote1 2
7
8 vote2 10
7
2 id2 pwd2
3 id1 pwd1
7
2 id1 pwd1
1 1113 id3 pwd3
3 id3 pwd3
7
4
```

```
7
6 vote3 9
3 id3 pwd3
5 vote1
7
```

실행 화면

```
$ ./example.exe
Load log file?(1:yes, 0:no (log will be deleted)):
1
```

```
=====
```

```
Num: 1
```

```
=====
```

1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit

```
=====
```

```
Select Menu:1
```

```
Selected Menu: 1. Register as a Member
```

```
1. Resident Registration Number: 1111
```

```
ID: id1
```

```
Password:pwd1
```

```
Registration Done!
```

```
=====
```

```
Num: 2
```

```
=====
```

1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit

```
=====
```

```
Select Menu:1
```

```
Selected Menu: 1. Register as a Member
```

```
1. Resident Registration Number: 1111
```

```
ID: id1
```

```
Password:pwd1
```

```
Registration Fail
```

```
=====
```

```
Num: 3
```

```
=====
```

1. Register as a Member
2. Unsubscribe from System
3. Login

```
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
```

=====

Select Menu:3

Selected Menu: 3. Login

ID: id1

Password: pwd1

Login Success!

=====

Num: 4

=====

```
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
```

=====

Select Menu:3

Selected Menu: 3. Login

ID: id1

Password: pwd1

Login Failed

=====

Num: 5

=====

```
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
```

=====

Select Menu:2

Selected Menu: 2. Unsubscribe from System

ID: id1

Password: pwd1

Unsubscribed from System!

=====

Num: 6

=====

```
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
```

```
8. Cast a Vote
9. Program Exit
=====
Select Menu:2
Selected Menu: 2. Unsubscribe from System
ID: id1
Password: pwd1
Cannot unsubscribe from the system!
```

```
=====
Num: 7
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:1
Selected Menu: 1. Register as a Member
1. Resident Registration Number: 1111
ID: id1
Password:pwd1
Registration Done!
```

```
=====
Num: 8
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:4
Selected Menu: 4. Logout
Logout Failed
```

```
=====
Num: 9
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:3
Selected Menu: 3. Login
```

ID: id1
Password: pwd1
Login Success!

=====

Num: 10

=====

1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit

=====

Select Menu:4

Selected Menu: 4. Logout

Logout Success

=====

Num: 11

=====

1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit

=====

Select Menu:3

Selected Menu: 3. Login

ID: id1

Password: pwd1

Login Success!

=====

Num: 12

=====

1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit

=====

Select Menu:5

Selected Menu: 5. Delete Existing Vote Item

Vote Subject to Delete: vote1

Request Failed

=====

Num: 13


```

=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:6
Selected Menu: 6. Add a New Vote Item
Vote Subject: vote1
Number of Vote Items: 4
Vote Added!

=====
Num: 14
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:6
Selected Menu: 6. Add a New Vote Item
Vote Subject: vote2
Number of Vote Items: 10
Vote Added!

=====
Num: 15
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:7
Selected Menu: 7. List All Vote Items.
Vote Subject: vote1, Vote Counts per Item - item1: 0 item2: 0 item3: 0 item4: 0 Vote
Subject: vote2, Vote Counts per Item - item1: 0 item2: 0 item3: 0 item4: 0 item5: 0 item6: 0
item7: 0 item8: 0 item9: 0 item10: 0

=====
Num: 16
=====
1. Register as a Member
2. Unsubscribe from System
3. Login

```

```
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:8
Selected Menu: 8. Cast a Vote
Vote Subject: vote1
Vote for: 1
Request processed successfully!

=====
Num: 17
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:7
Selected Menu: 7. List All Vote Items.
Vote Subject: vote1, Vote Counts per Item - item1: 1 item2: 0 item3: 0 item4: 0 Vote
Subject: vote2, Vote Counts per Item - item1: 0 item2: 0 item3: 0 item4: 0 item5: 0 item6: 0
item7: 0 item8: 0 item9: 0 item10: 0

=====
Num: 18
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:8
Selected Menu: 8. Cast a Vote
Vote Subject: vote1
Vote for: 2
Vote casting failed!

=====
Num: 19
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
```

```

8. Cast a Vote
9. Program Exit
=====
Select Menu:7
Selected Menu: 7. List All Vote Items.
Vote Subject: vote1, Vote Counts per Item - item1: 1 item2: 0 item3: 0 item4: 0 Vote
Subject: vote2, Vote Counts per Item - item1: 0 item2: 0 item3: 0 item4: 0 item5: 0 item6: 0
item7: 0 item8: 0 item9: 0 item10: 0

=====
Num: 20
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:8
Selected Menu: 8. Cast a Vote
Vote Subject: vote2
Vote for: 10
Request processed successfully!

=====
Num: 21
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:7
Selected Menu: 7. List All Vote Items.
Vote Subject: vote1, Vote Counts per Item - item1: 1 item2: 0 item3: 0 item4: 0 Vote
Subject: vote2, Vote Counts per Item - item1: 0 item2: 0 item3: 0 item4: 0 item5: 0 item6: 0
item7: 0 item8: 0 item9: 0 item10: 1

=====
Num: 22
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:4

```

Selected Menu: 4. Logout
Logout Success

=====
Num: 23
=====

1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit

=====
Select Menu:1
Selected Menu: 1. Register as a Member
1. Resident Registration Number: 1112
ID: id2
Password:pwd2
Registration Done!

=====
Num: 24
=====

1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit

=====
Select Menu:3
Selected Menu: 3. Login
ID: id2
Password: pwd2
Login Success!

=====
Num: 25
=====

1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit

=====
Select Menu:8
Selected Menu: 8. Cast a Vote
Vote Subject: vote1
Vote for: 2
Request processed successfully!

=====

Num: 26

=====

1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit

=====

Select Menu:7

Selected Menu: 7. List All Vote Items.

Vote Subject: vote1, Vote Counts per Item - item1: 1 item2: 1 item3: 0 item4: 0 Vote

Subject: vote2, Vote Counts per Item - item1: 0 item2: 0 item3: 0 item4: 0 item5: 0 item6: 0
item7: 0 item8: 0 item9: 0 item10: 1

=====

Num: 27

=====

1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit

=====

Select Menu:8

Selected Menu: 8. Cast a Vote

Vote Subject: vote2

Vote for: 10

Request processed successfully!

=====

Num: 28

=====

1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit

=====

Select Menu:7

Selected Menu: 7. List All Vote Items.

Vote Subject: vote1, Vote Counts per Item - item1: 1 item2: 1 item3: 0 item4: 0 Vote

Subject: vote2, Vote Counts per Item - item1: 0 item2: 0 item3: 0 item4: 0 item5: 0 item6: 0
item7: 0 item8: 0 item9: 0 item10: 2

=====

Num: 29

=====

```
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:2
Selected Menu: 2. Unsubscribe from System
ID: id2
Password: pwd2
Unsubscribed from System!

=====
Num: 30
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:3
Selected Menu: 3. Login
ID: id1
Password: pwd1
Login Success!

=====
Num: 31
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:7
Selected Menu: 7. List All Vote Items.
Vote Subject: vote1, Vote Counts per Item - item1: 1 item2: 1 item3: 0 item4: 0 Vote
Subject: vote2, Vote Counts per Item - item1: 0 item2: 0 item3: 0 item4: 0 item5: 0 item6: 0
item7: 0 item8: 0 item9: 0 item10: 2

=====
Num: 32
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
```

```
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:2
Selected Menu: 2. Unsubscribe from System
ID: id1
Password: pwd1
Unsubscribed from System!
```

```
=====
Num: 33
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:1
Selected Menu: 1. Register as a Member
1. Resident Registration Number: 1113
ID: id3
Password:pwd3
Registration Done!
```

```
=====
Num: 34
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:3
Selected Menu: 3. Login
ID: id3
Password: pwd3
Login Success!
```

```
=====
Num: 35
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
```

```
8. Cast a Vote
9. Program Exit
=====
Select Menu:7
Selected Menu: 7. List All Vote Items.
Vote Subject: vote1, Vote Counts per Item - item1: 1 item2: 1 item3: 0 item4: 0 Vote
Subject: vote2, Vote Counts per Item - item1: 0 item2: 0 item3: 0 item4: 0 item5: 0 item6: 0
item7: 0 item8: 0 item9: 0 item10: 2

=====
Num: 36
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:4
Selected Menu: 4. Logout
Logout Success

=====
Num: 37
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:7
Selected Menu: 7. List All Vote Items.
Unable to view list of votes

=====
Num: 38
=====
1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit
=====
Select Menu:6
Selected Menu: 6. Add a New Vote Item
Vote Subject: vote3
Number of Vote Items: 9
Request failed! - user not logged in
```


=====

Num: 39

=====

1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit

=====

Select Menu:3

Selected Menu: 3. Login

ID: id3

Password: pwd3

Login Success!

=====

Num: 40

=====

1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit

=====

Select Menu:5

Selected Menu: 5. Delete Existing Vote Item

Vote Subject to Delete: vote1

Vote Deleted!

=====

Num: 41

=====

1. Register as a Member
2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit

=====

Select Menu:7

Selected Menu: 7. List All Vote Items.

Vote Subject: vote2, Vote Counts per Item - item1: 0 item2: 0 item3: 0 item4: 0 item5: 0
item6: 0 item7: 0 item8: 0 item9: 0 item10: 2

=====

Num: 42

=====

1. Register as a Member

2. Unsubscribe from System
3. Login
4. Logout
5. Delete Existing Vote Item
6. Add a New Vote Item
7. List All Vote Items
8. Cast a Vote
9. Program Exit

=====

Select Menu: