* There shouldn’t be any permission related issues on the hadoop cluster. The host operating system should take of permitting all the requests to the hadoop cluster from the interface layer.

**5.2.2 Mode of Operation of a System**

The system is capable of operating in two different modes

|  |  |
| --- | --- |
| **Voting Ballot** | Uses the user interface for logic by the user which is designed using twitter bootstrap and foundation frame work. Then the deployment descriptor does the mapping of the requests to the existing servlets in the back end. Then comes the layer which performs registration, login , logout, Casting a vote, entering the OTP Database layer to store the user interface information for authentication purpose like OTP. |
| **Voting Server** | The user interface only for the admin which will be designed using the twitter bootstrap an foundation framework Deployment descriptor does the mapping of the requests to the existing servlets in the back end. Then comes the layer which has operations such as—New election process, Participate, results of the election, Authentication, Other admin operations and also security Database layer to store the data regarding the election process |

Table 5.1 Mode of Operation

**5.2.3 User Operations**

|  |  |
| --- | --- |
| **Vote** | User should be securely casting his vote through multiple encryption techniques |
| **View Elections** | User should be able to view the list of all elections scheduled |
| **Add Elections** | Admin will be able to schedule new election or cancel an existing election |
| **Participants** | Admin will be able to add or remove the participants from the elections |
| **Results** | Both user and admin should be able to view the results of election |

Table 5.2 User Operations

**5.3 Data Flow Diagram**

A DFD (Data Flow Diagram) is the graphical representation of the flow of data through an information system. DFD is very useful in understanding a system and can be efficiently used during analysis.

A DFD shows the flow of data through a system. It views a system as a function that transforms the inputs into desired outputs. Any complex systems will not perform this transformation in a single step and a data will typically undergo a series of transformations before it becomes the output.

With a data flow diagram, users are able to visualize how the system will operate that the system will accomplish and how the system will be implemented, old system data flow diagrams can be drawn up and compared with a new systems data flow diagram to draw comparisons to implement a more efficient systems.

Data flow diagrams can be used to provide the end user with a physical idea of where the data they input, ultimately as an effect upon the structure of the whole system.



Figure 5.1 DFD

In figure 5.1, there is a DAO layer which would act as an intermediary between the front end the back end.

The front end will consist of the registration to the portal and the then OTP generated for the user will be sent to the mail and then the portal can be accessed. The user can then cast his vote or do the election look up or go through the election analysis of the previous elections that have taken place.

**Back End**

**Election analytics** will have 2 sub operations i.e result, report

* Result will have the result of the elections
* Report will have any issues related to the elections... any important information

**Admin** based operations will have 2 sub operations i.e. access, manage users.

* Access -The admin is the only person who has access to the electoral portal.
* Manage users - the operations will be to manage the users who is found suspicious or is a person who doesn’t have a citizen ship to vote.

**Election process** has 3 sub operations i.e. start, close, new

* New - creation of a new election
* Start - Started of the previously created election
* Close - closing of the voting option when the election time is finished