

System Analysis & Design

Project Documentation for

“BLUE BRAIN” (BB)

Version: 2.0 (Approved)

Submitted To

Ms. Tasnim Rahman

Lecturer

Department of Software Engineering (SWE)

Daffodil International University (DIU)

Prepared By

Ibne Sayad- 172-35-2115

Tamanna Ahmed- 172-35-2150

Muntaha Maherin- 172-35-2104

Afrin Akter- 172-35-2121

Md. Redwanul Haque- 172-35-2116

Shajjatur Rahman-172-35-2103

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1.1 Project description

The goal of the “Blue Brain” Project is to build biologically detailed digital reconstructions and simulations of the rodent, and ultimately the human brain. Understanding the brain is one of the largest Big Data challenges we have today. After years of theory and experimentation, simulation is the evolved phase of many of the sciences and engineering fields. Simulation neuroscience is fundamental to understanding the brain as a complex multi-scale system. Therefore, the supercomputer-based simulations and reconstructions built by Blue Brain offer a radically new approach for understanding the multi-level structure and function of the brain.

So, this system will change the now-a-days lifestyle. Everything will be much more accurate, perfect & optimum. Human’s daily life will be much easier. People will be able to consume their time by it. Human will go through with the time management more properly. Initially it can be costly but all over it will be actually save the money because the possibility at error will be deducted.

2.0 Project Requirements

2.1.1 Functional requirements for User:

- System Access
- Input data
- Data analysis
- Output data
- Get suggestion
- Take Decision
- Work separation
- IOT control
- Personal assistant
- Health support
- Communication

2.1.2 Functional requirements for Admin:

- Admin access
- Change user
- Add doctor
- Add new social media
- Add new IOT object

2.2 Nonfunctional Requirements:

- Maintainability
- Reliability
- Security
- Capacity.
- Recoverability.
- Availability.
- Recoverability.
- Serviceability.

3.0 system design

3.1 Use Case diagram for user

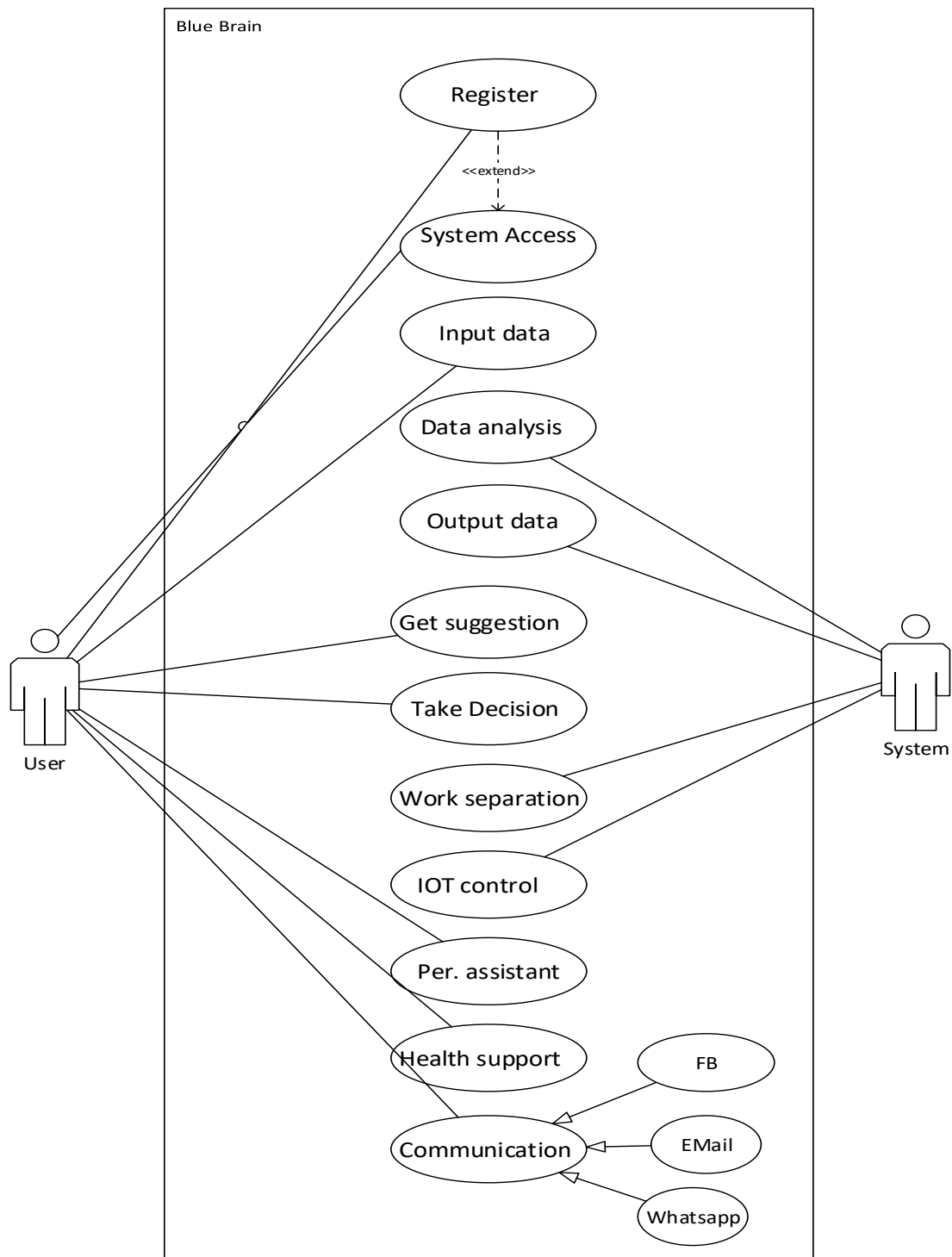


Fig: Use case for User

3.1.1 Use Case diagram for admin

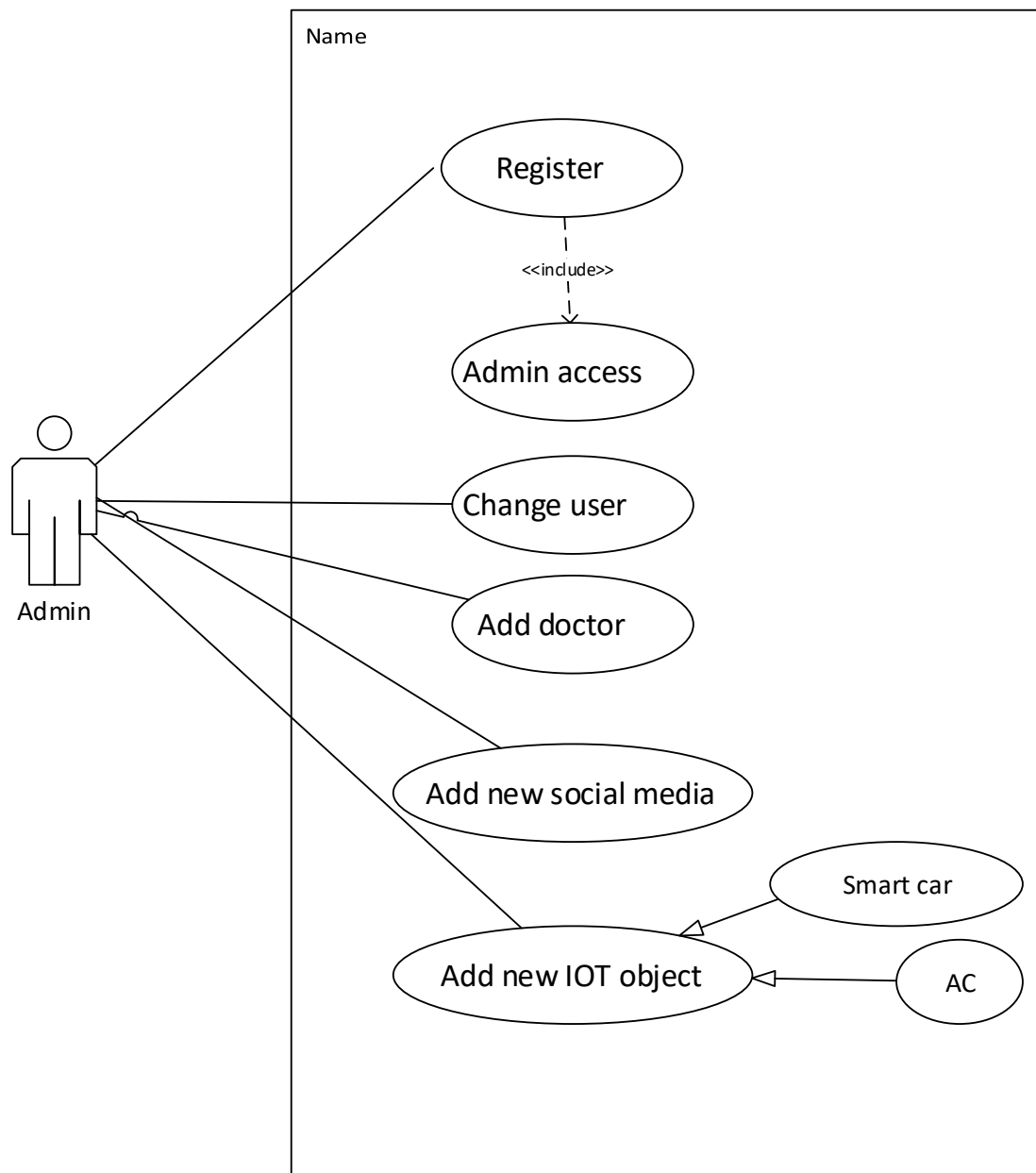


Fig: Use case for Admin

3.2 Use case description

3.2.1 Data Analysis

Use case ID	BB -101
Use case	Data Analysis
Actors	System
Description	System will analysis data of user , It also help user to make a decision
Pre-condition	Must have logged in
Flow of events	1.User login 2.System will ask for User all information 3. User provide information 4.Impressive welcome screen will come 5. User can See many information by using this. 6. User can update his information 7. System will analyze data about user 8.System provide update information 9. System provide alert Notification 10.user can logout
Post condition	User must have logged in
Alternative Flows	System will automatically generate when user fall in danger zone
priority	High
Non Functional Requirements	Security
Assumptions	User input
Source	Data

3.2.2 Decision making

Use case ID	BB -111
Use case	Decision making
Actors	System
Description	System make decisions by analyzing data of user
Pre-condition	User must have logged in
Flow of events	1.User login 2.System will ask for User all information 3. User provide information 4.Impressive welcome screen will come 5. User provide recent information 6. User will update his information 7. System will make decision by user information 8.System provide update information 9. System provide alert Notification 10. User logout
Post condition	User must have logged in
Alternative Flows	System take an attempt when user in critical moment
Priority	high
Non Functional Requirements	Reliability
Assumptions	User input
Source	Data

3.2.3 IOT control

Use case ID	BB-12
Use case	IOT control
Actors	System
Description	System will control Whole IOT System
Pre-condition	User provide IOT data
Flow of events	1.User login 2.System will ask for set all IOT data 3. User provide IOT data manually 4. User provide recent information 6. update data 7. System controls all IOT device 8. System provide alert Notification 9. User logout
Post condition	Every step generate normally
Alternative Flows	User can control IOT device manually
Priority	medium
Non Functional Requirements	reliability
Assumptions	User input
Source	Objects

3.3 Activity Diagram

3.3.1 Data Analysis

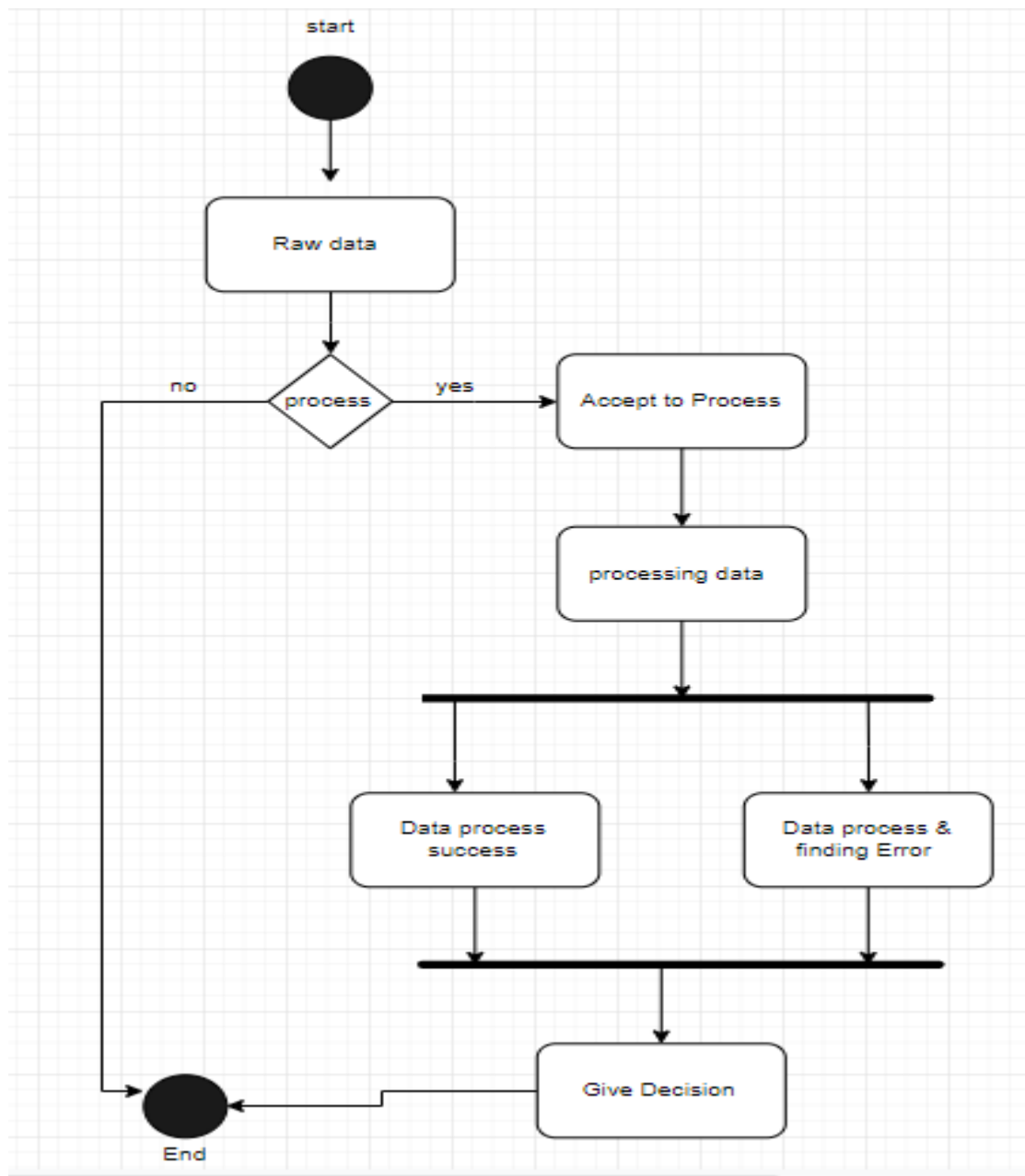


Fig: Activity Diagram For data Analysis

3.3.2 Decision Making

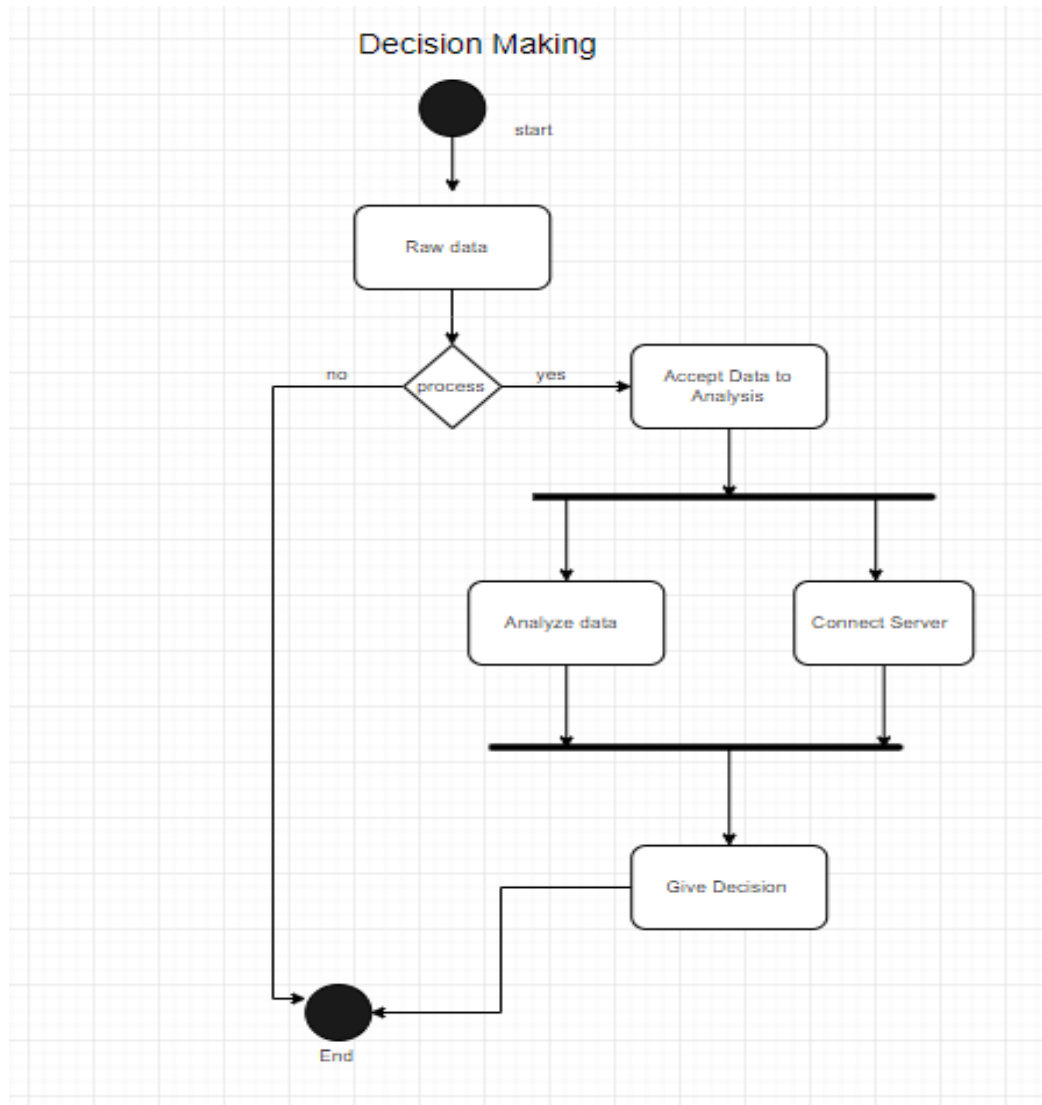


Fig: Activity Diagram For Decision Making

3.3.3 IOT Control

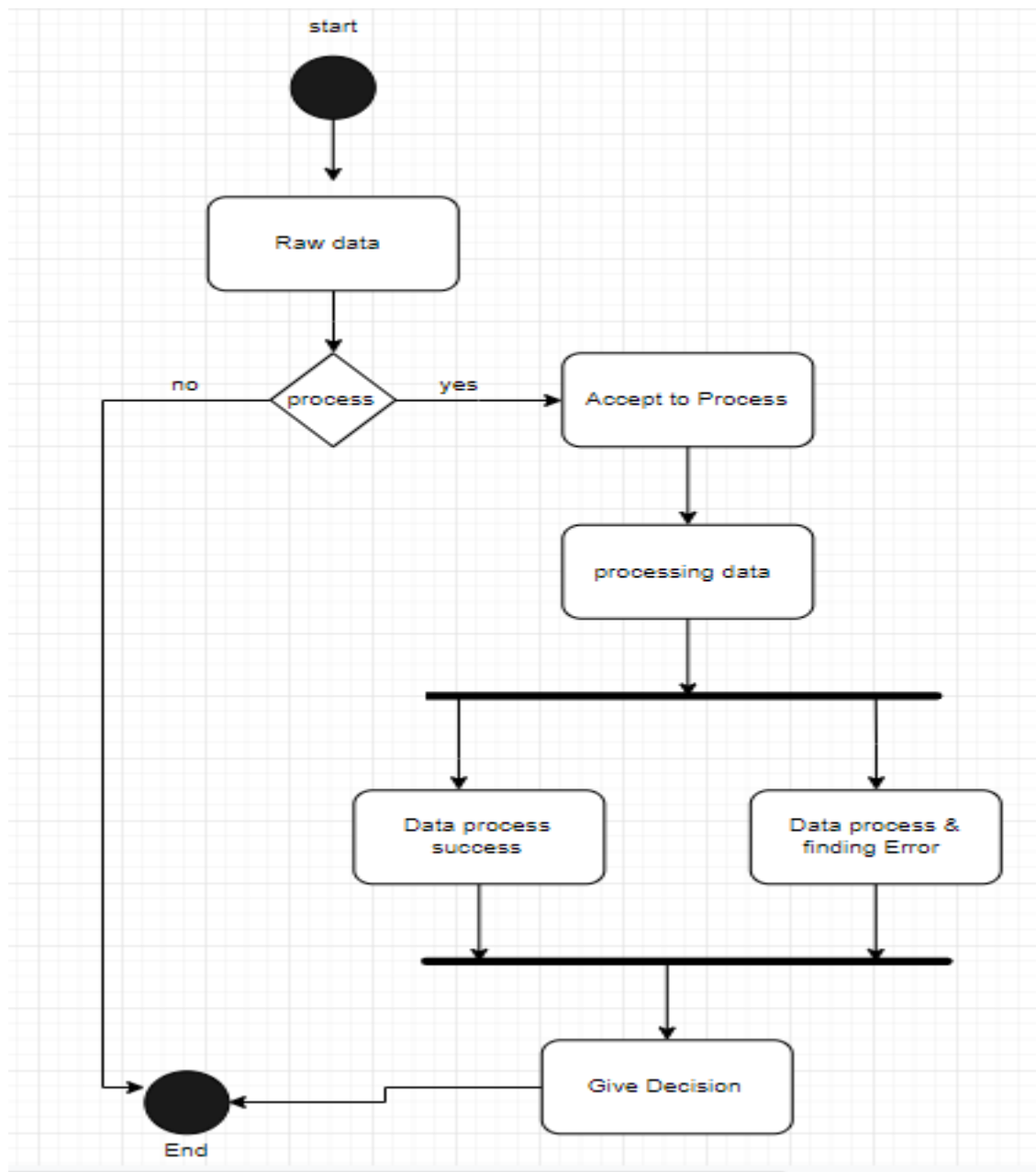


Fig: Activity Diagram for IOT control

3.4 Sequence Diagram

3.4.1 Data analysis & Decision Making

Sequence Diagram for Data Analysis & Decision Making:

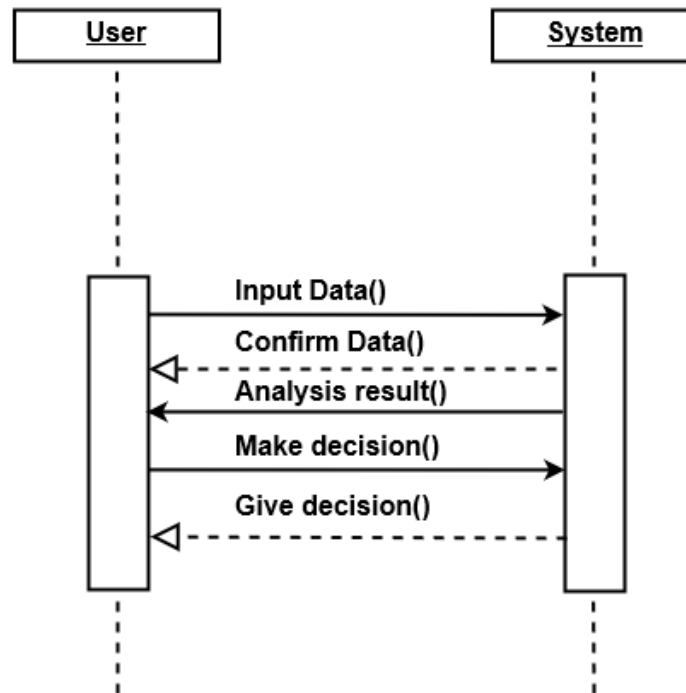


Figure:Sequence Diagram for Decision making & Data analysis.

3.4.2 IOT Control

Sequence Diagram for IOT control:

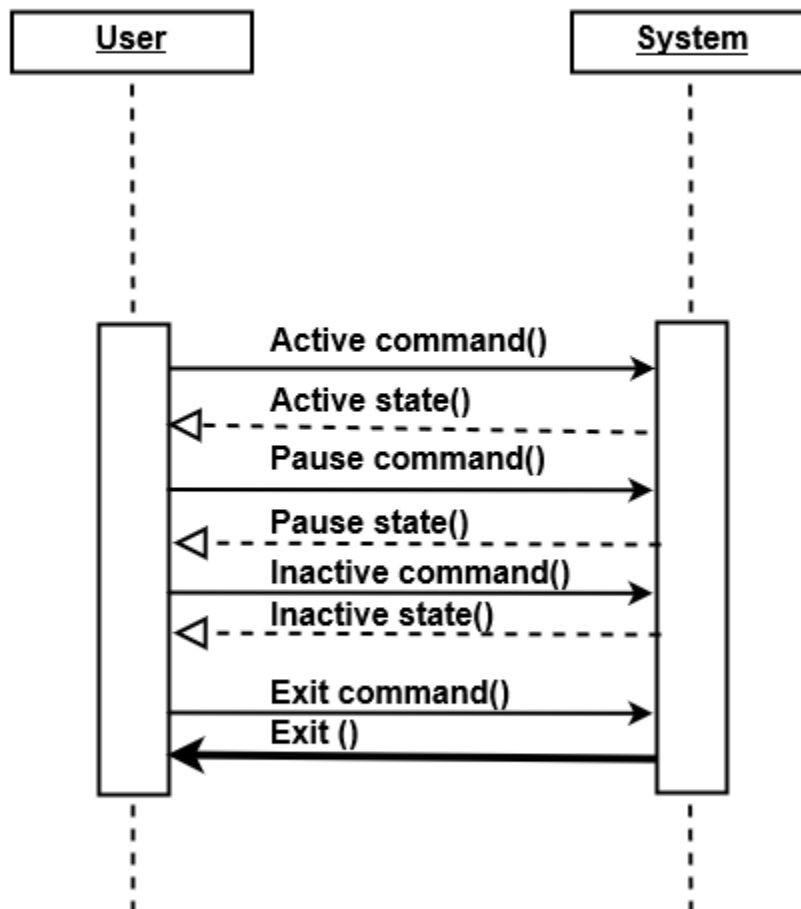


Figure:Sequence Diagram for IOT control.

3.5 Class Diagram for BB

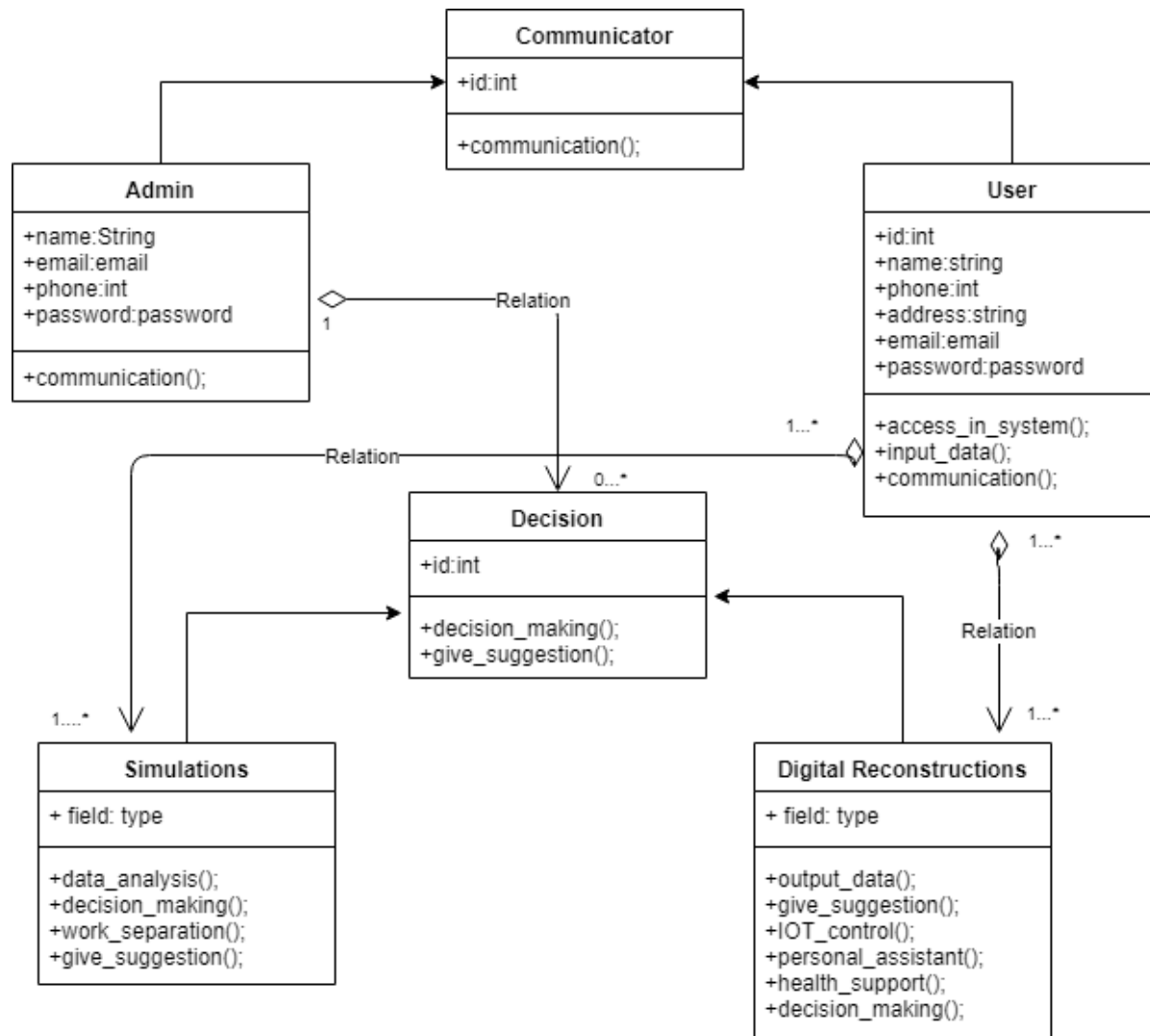


Fig: Class diagram

3.6 DFD

3.6.1 Context Level DFD

Data Flow Diagram(DFD):

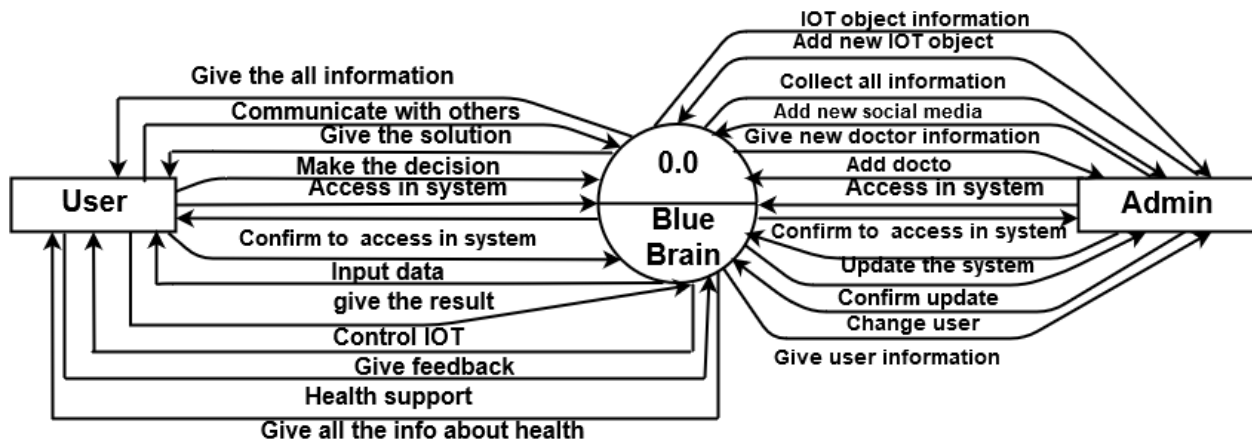


Figure:Context Level of DFD

3.6.2 0 Level DFD

Data Flow Diagram(0-Level):

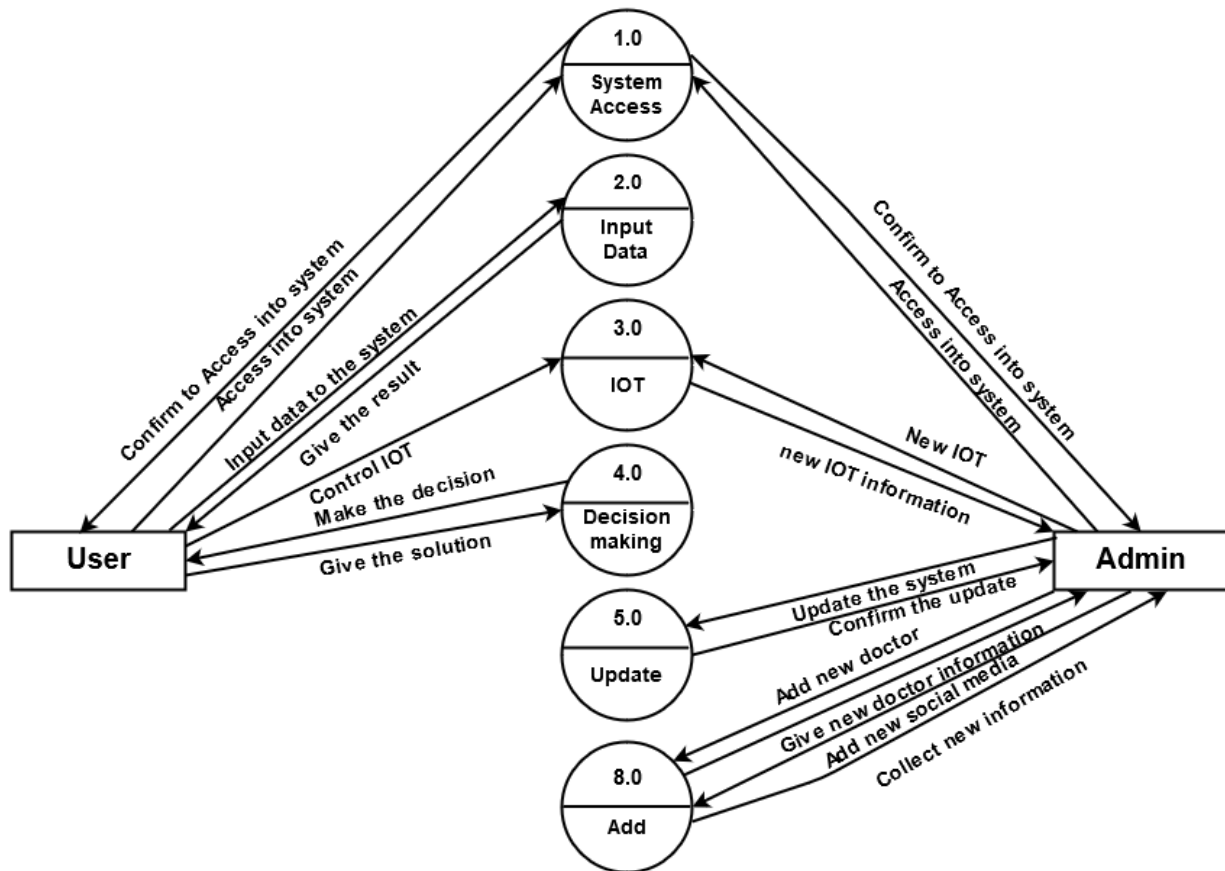


Figure:0-level of DFD

3.6.3 1 Level DFD

Level-1 Data Flow Diagram:

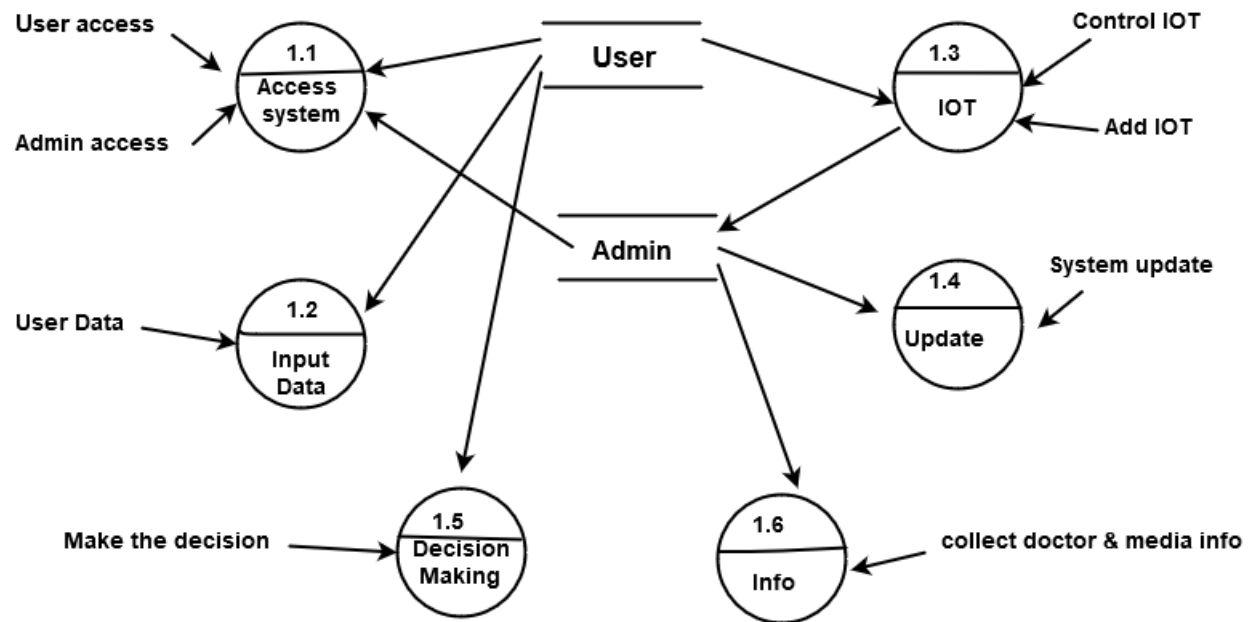


Figure:Level-1 for DFD

3.7 State Transition Diagram

3.7.1 Data Analysis

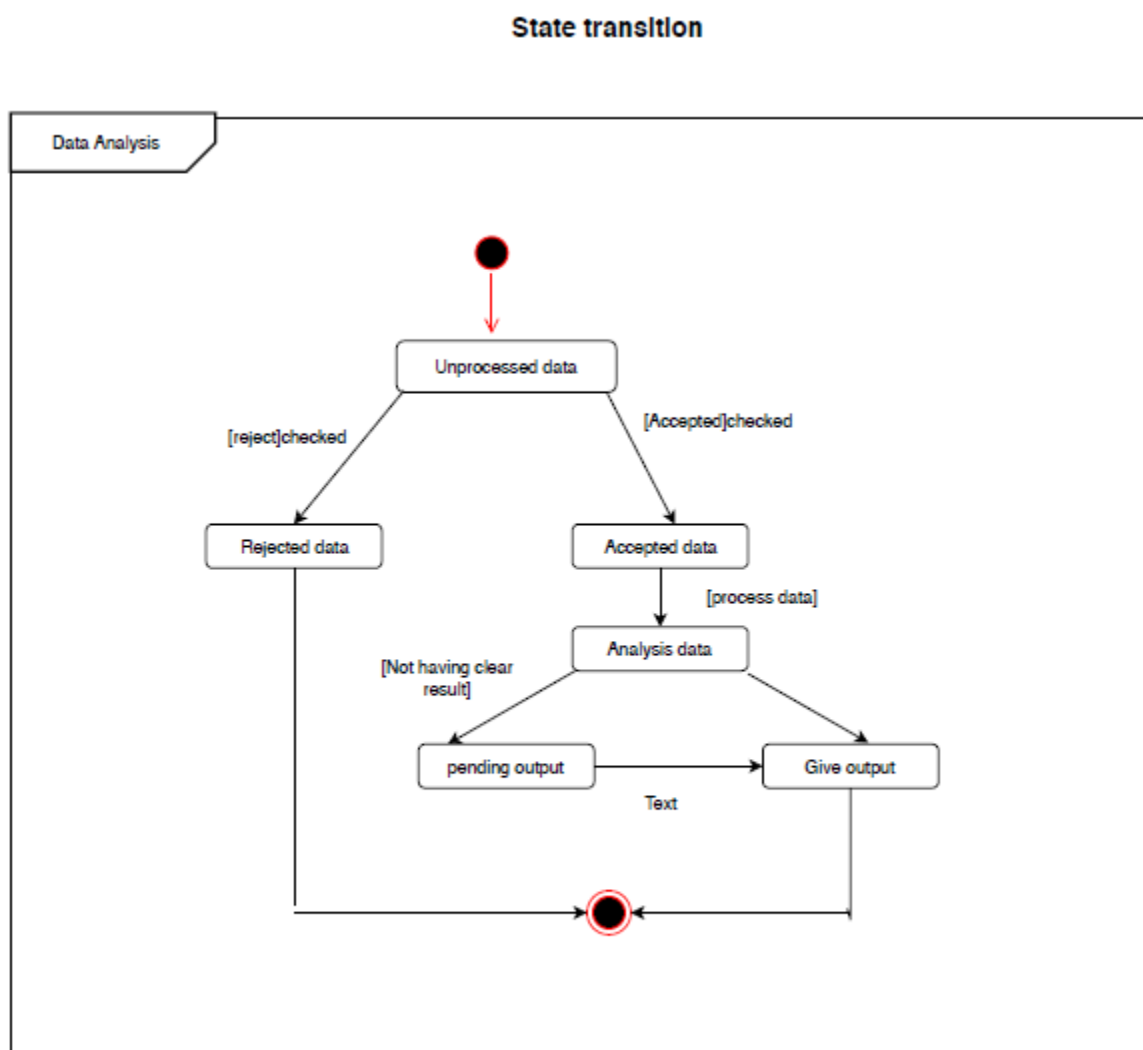
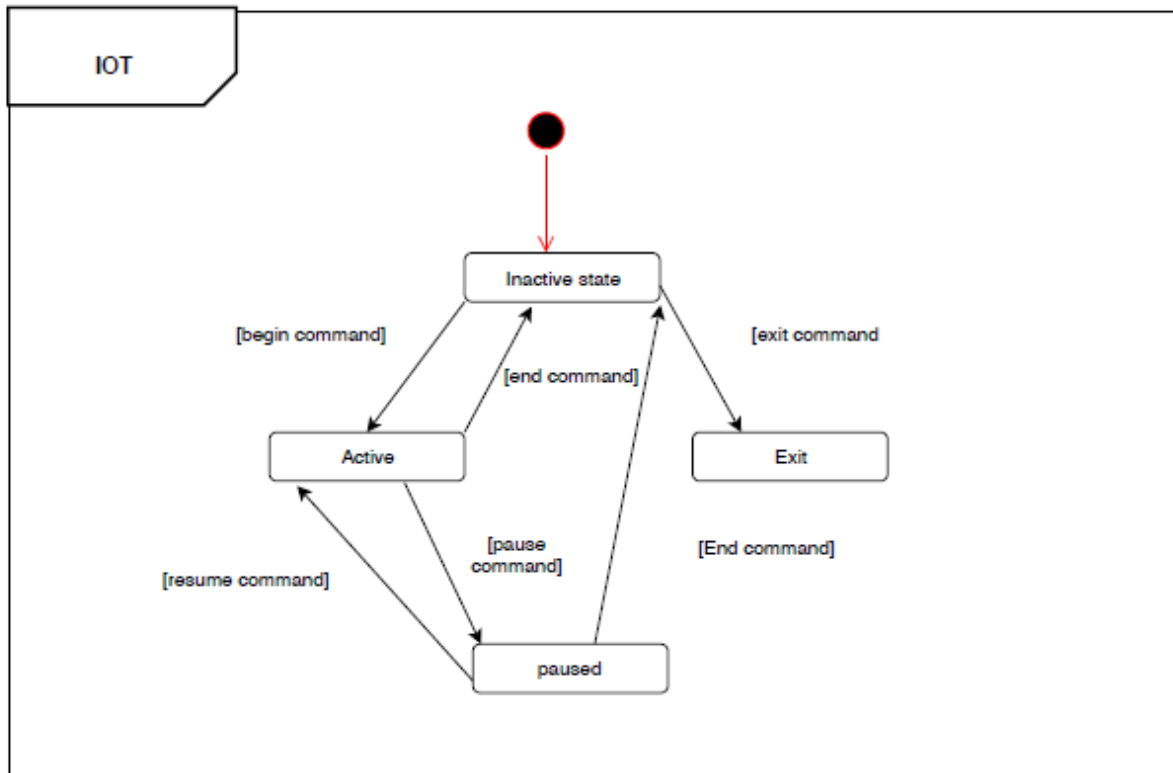


fig: Data Analysis state transition

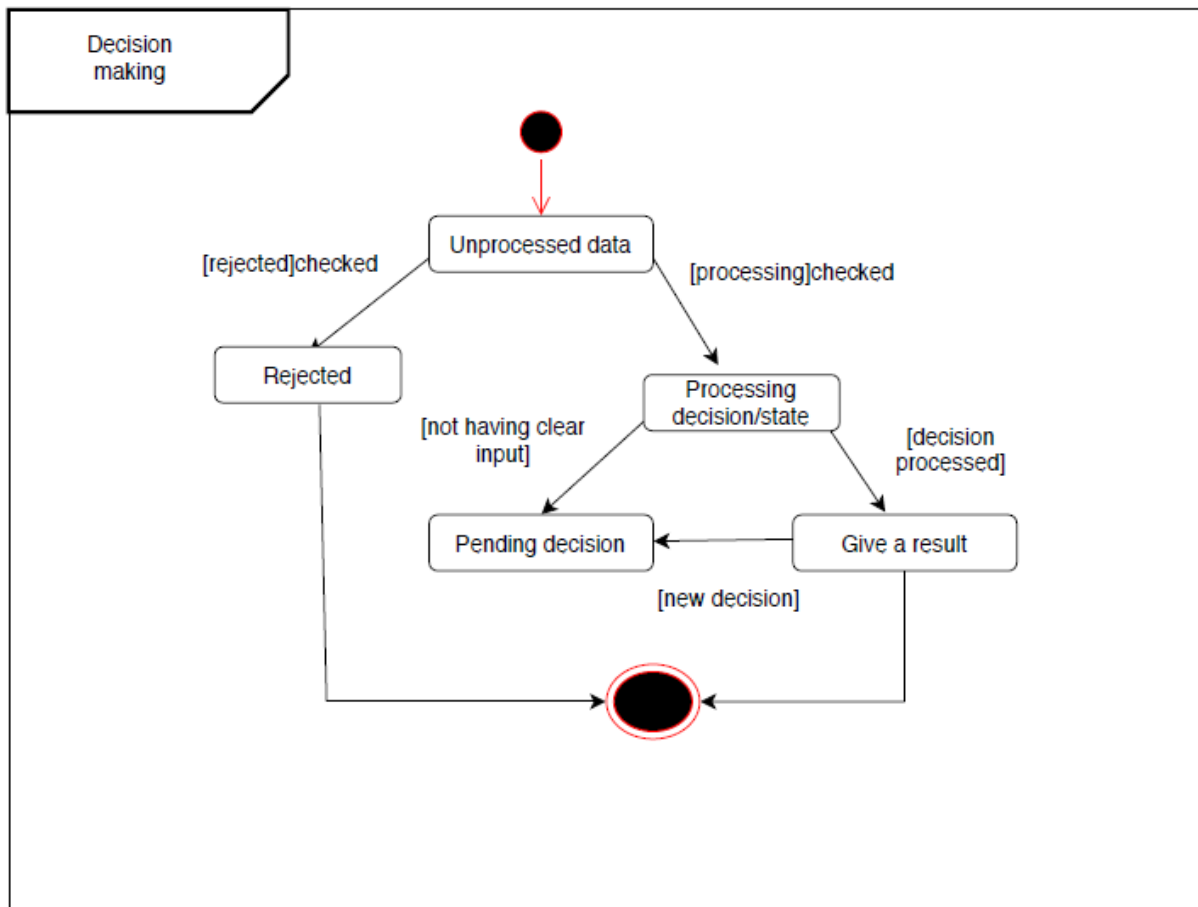
3.7.2 IOT Control



Fig; IOT state transition

3.7.3 Decision making

Decision Making



4.1 Conclusion

The project “BLUE BRAIN” will be a supercomputer based advance simulation system. As the project will simulate our brain functionality and work as our brain but the production or working efficiency will be marginally increase, its uses will reduce the cost of production up to 70%. As it also reduces the working hand it will also push to increase our living standard. This is just about the socio-economy advantages. “BLUE BRAIN” will release a new skyline in neuroscience. Moreover it will be a marginal success where science and engineering will contribute together for betterment of human.

Those industries which will use the advance “BLUE BRAIN” technology need less working-hand and the faux will be reduce to 0.001%. Besides that the production cost will also reduce marginally.

Thus we can say if we could develop the project “BLUE BRAIN” successfully it will be one of the biggest successes in 21 century.

The End