ENDSEMS : SOFTWARE ENG. LAB

BRANCH : CSE   SEM: 5   BTECH

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① Solutions to que no. 1:

a) Problem Statement:

1) Given that New Branch School District currently is operational with a fleet of 40 Buses.

2) Covering and catering needs of 1000 students

3) District employs 12 permanent human resource category to cater routing needs and 25-30 part time employees

4) Dispatcher does the message relay and establishes co-ordinations among the drivers

5) Dispatcher also deals with the parents and students in actions of information elicitation.

6) Information stores:

    a) student info subscribed to faculty.
    b) information regarding buses employed
    c) info of bus employees.
    d) Routing information.

Sol 1) Objective :- 1) To draw the use case diagram and specify the role of each of the actors

         2) State a) pre conditions

            b) post condition

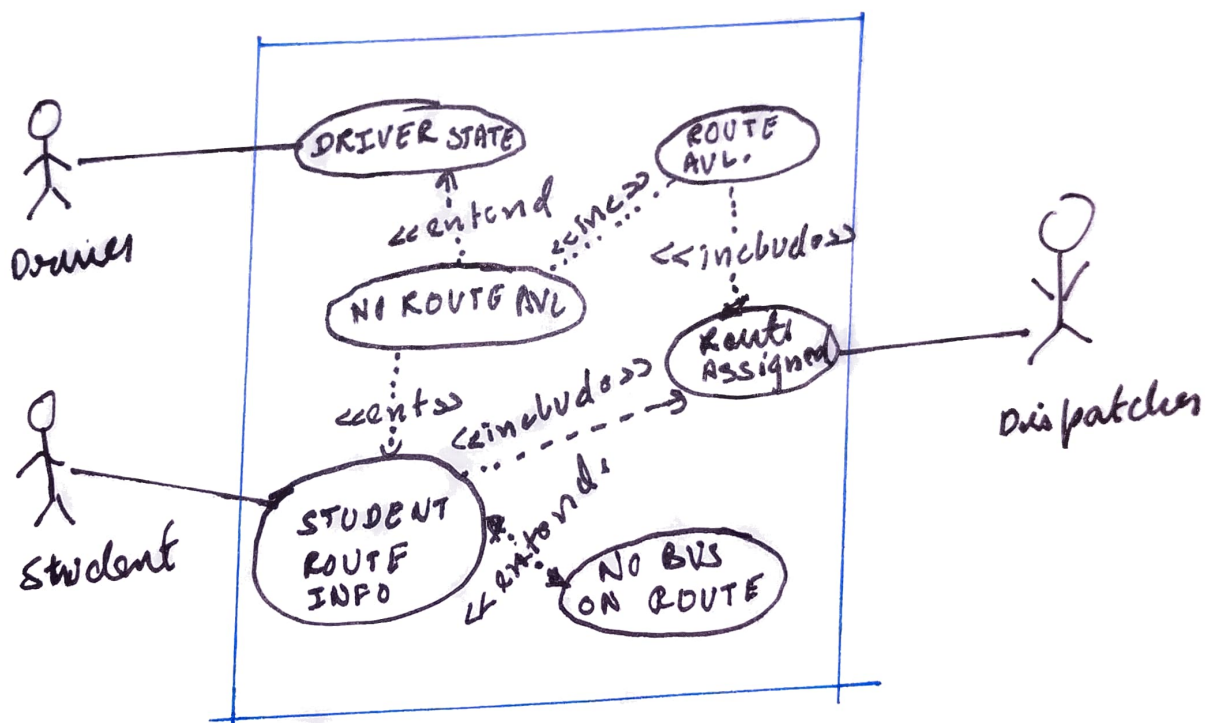   c) Functions.

Solution :

Use case : Dispatcher allocating oroutes to the drivers based on the dependencies, and to the students -

1) **Name** : Route allocation.

2) **Actor** : Dispatcher, Driver, Student.

3) **Pre condition** : Drivers must not be assigned a route already.

4) **Post conditions** : Route allocated to the driver and students.

5) **Successful Execution** :- 1) Driver details entered by dispatcher in route mapping

           2) Driver gets necessary resources

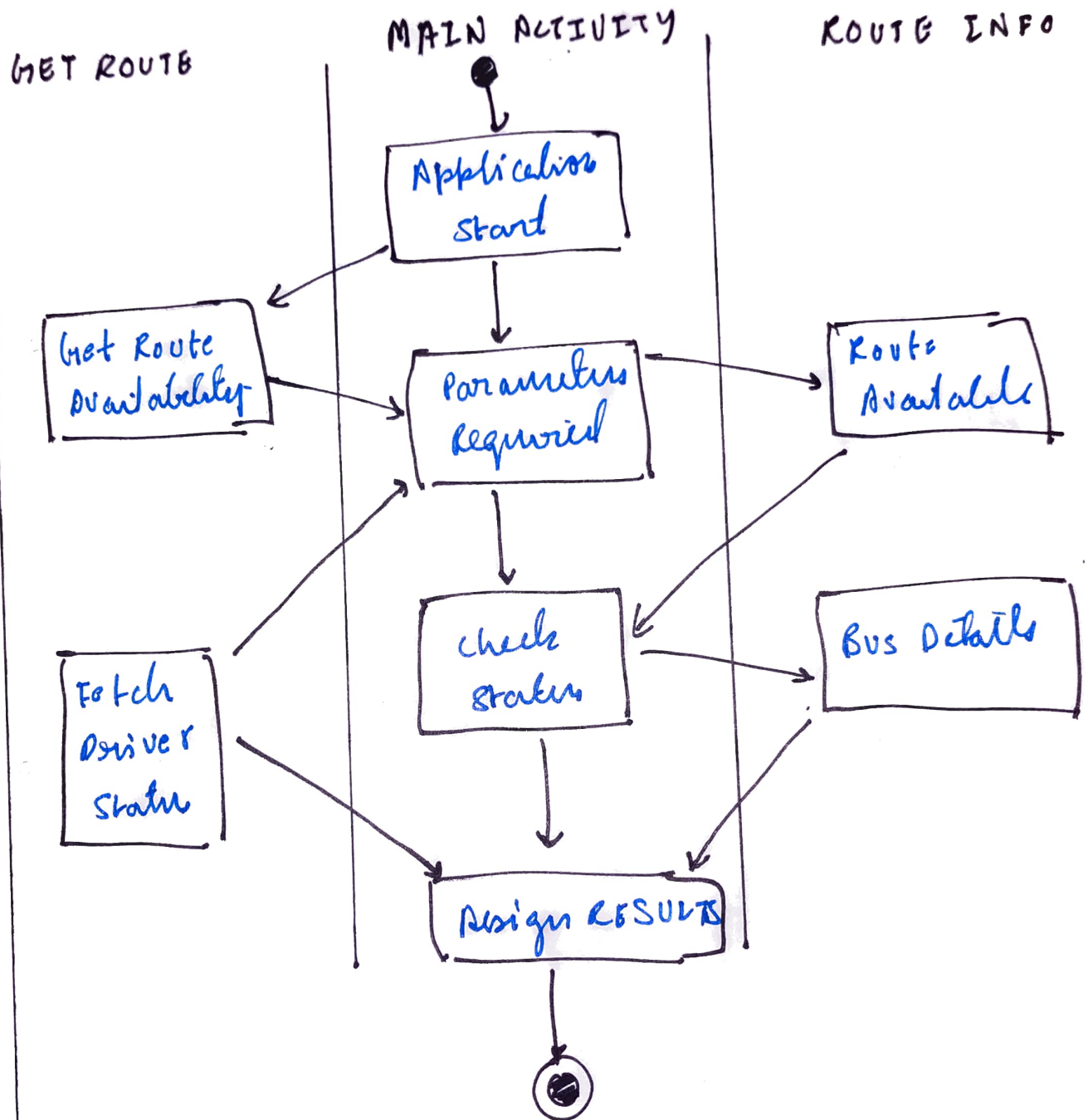   3) Students notified for the assigned route.

(f) **Alternative Provided :**

a) Driver assigned some non functional route

Rectification : Reassignment.

b) Student not notified : Stimulation made.

Use case diagrams

Solution: 2   ACTIVITY DIAGRAM

GET ROUTE   MAIN ACTIVITY   ROUTE INFO

Application Start

Get Route Availability

Parameters Required

Route Available

Fetch Driver Status

Check Status

Bus Details

Assign RESULT

Sol3 : Objective : Classify the classes and draw the class diagram.

classes.

1) District school.
2) Dispatcher
3) Routes Management
4) Student
5) Details Elicitation.
6) Employee Management
7) Employee PR
8) Employee NPR

Classification : Relationship

Class Name	District	Dispatcher	Route	Student	Details	Employee
① District		Strong	Strong	Strong		Strong.
② Dispatcher			WEAK			WEAK
③ Route		WEAK				WEAK
④ Student	Strong		WEAK			
⑤ Details		STRONG	STRONG			STRONG
⑥ Employee		STRONG			STRONG	
⑦ EmployeePR	STRONG				STRONG	
⑧ NPR	WEAK				WEAK	

DISTRICT

STUDENT RECORD
EMPLOYEE RECORD

HIRE DRIVER()
EMPLOY HELPER()

ROUTE

ROUTE DETAILS

Allocate ()
Availability ()

DISPATCHER

DRIVER MAP
STUDENT MAP

1

STUDENT

REG NO.

GET ROUTE

DETAILS ELICIT.

QUERY

GET QUERY()

EMPLOYEE

LICENSE
EMPLOYMENT
REG NO.

GET ROUTE()

PERM. DRIVER

PERM LICENSE

GET SAVA ey()

NON PERMANENT

TEMP ID

GET_ STATUS()

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