Module ICT3715

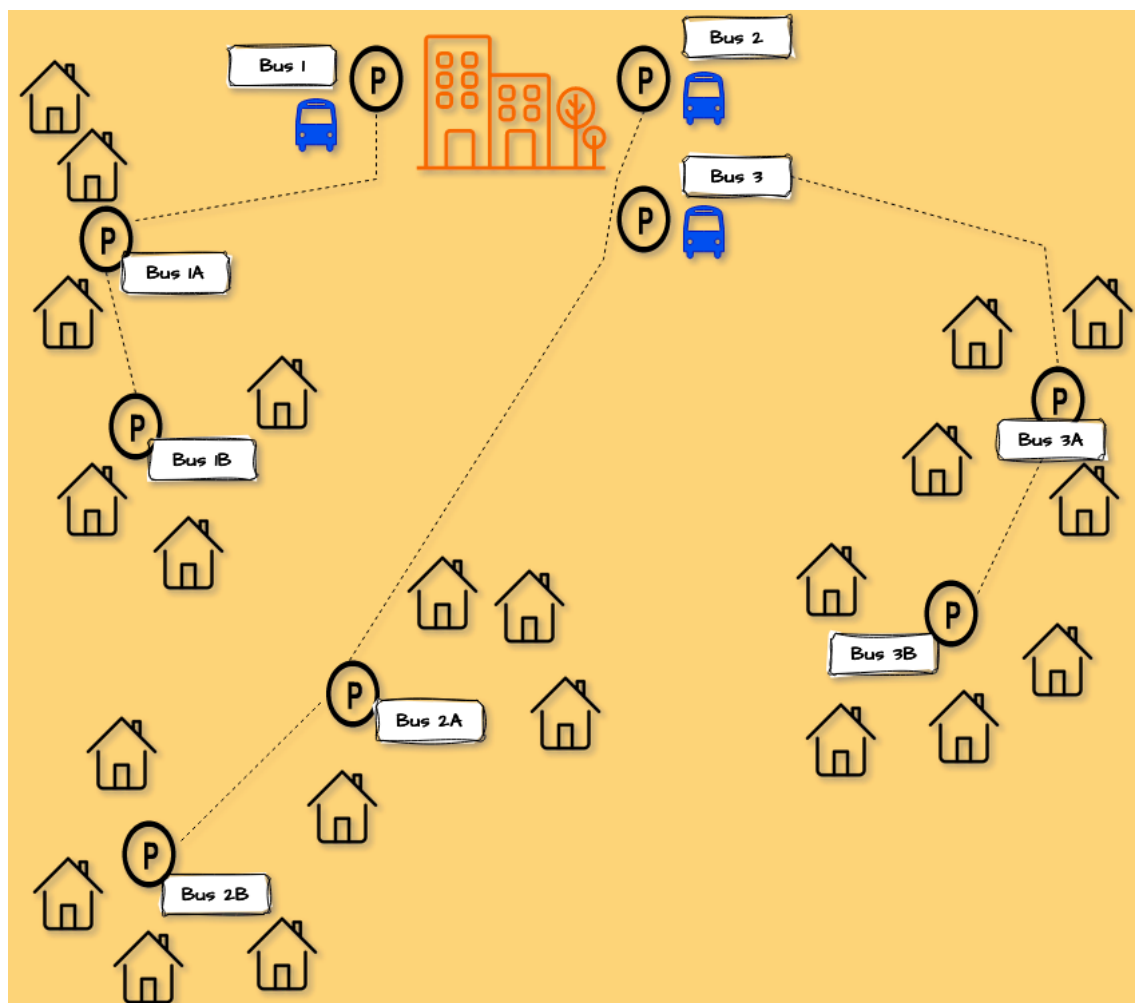**Practical System 2024**

Online Bus Registration System

ASSESSMENT 1 GENERAL FEEDBACK

Business Perspective

Due to excessive administrative actions, the Strive High Secondary School preferred to move from a paper base bus registration system to an online bus registration system. The purpose of this Module is to examine the paper base bus registration system and to **design, develop, implement, test, and demonstrate the new system for your final examination.**

Note: You are not allowed to develop any other system or use any other data that was not prescribed or provided to you.

The system must be designed and developed as an online system, that is both web-based and mobile-friendly. *For demonstration purposes, the system and database must be hosted locally.*

The outcome of this assessment will form part of the design, development, and implementation
of the database and the system. Your implementation effort will be greatly reduced if you take care with the preparation phases of the system.

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1.1 Section A [4]

1.1.1 Programming Languages (3)

You may only select from the following programming languages presented below, if you want to use any other programming language(s) you had to acquire approval from the lecturer (per e-mail) and you have to enclose the e-mail in your assessment as evidence.

The following are the prescribed requirements for the programming language(s) that you will use for your system:

Programming language: ✓
Any of the following programming languages are allowed:
- Java, PHP, C#, VB.Net, and Python

Graphical user interfaces: ✓
- PHP, HTML, JQuery, and JavaScript for the GUI development and API's

Style sheets are recommendable, including the use of any open-source front-end framework, such as Bootstrap

Report generation and presentation: ✓
- PHP, XML, XHTML5, or any other report generator that you can present in an online environment

1.1.2 Database (1)

You may only select from the following databases presented below, if you want to use any other databases you had to acquire approval from the lecturer (per e-mail) and you have to enclose the e-mail in your assessment as evidence.

1.2 Section B [28]

1.2.1 Activity Diagram (16)

Note(s):

When the parent apply for the learner, the parent apply for the bus transport for the year - 2025 the parent cannot apply for the learner only for 1 day or 2 weeks in the year to use the bus transport.

Buses have limited space thus:
- Bus 1 can transport 35 learners
- Bus 2 can transport 8 learners
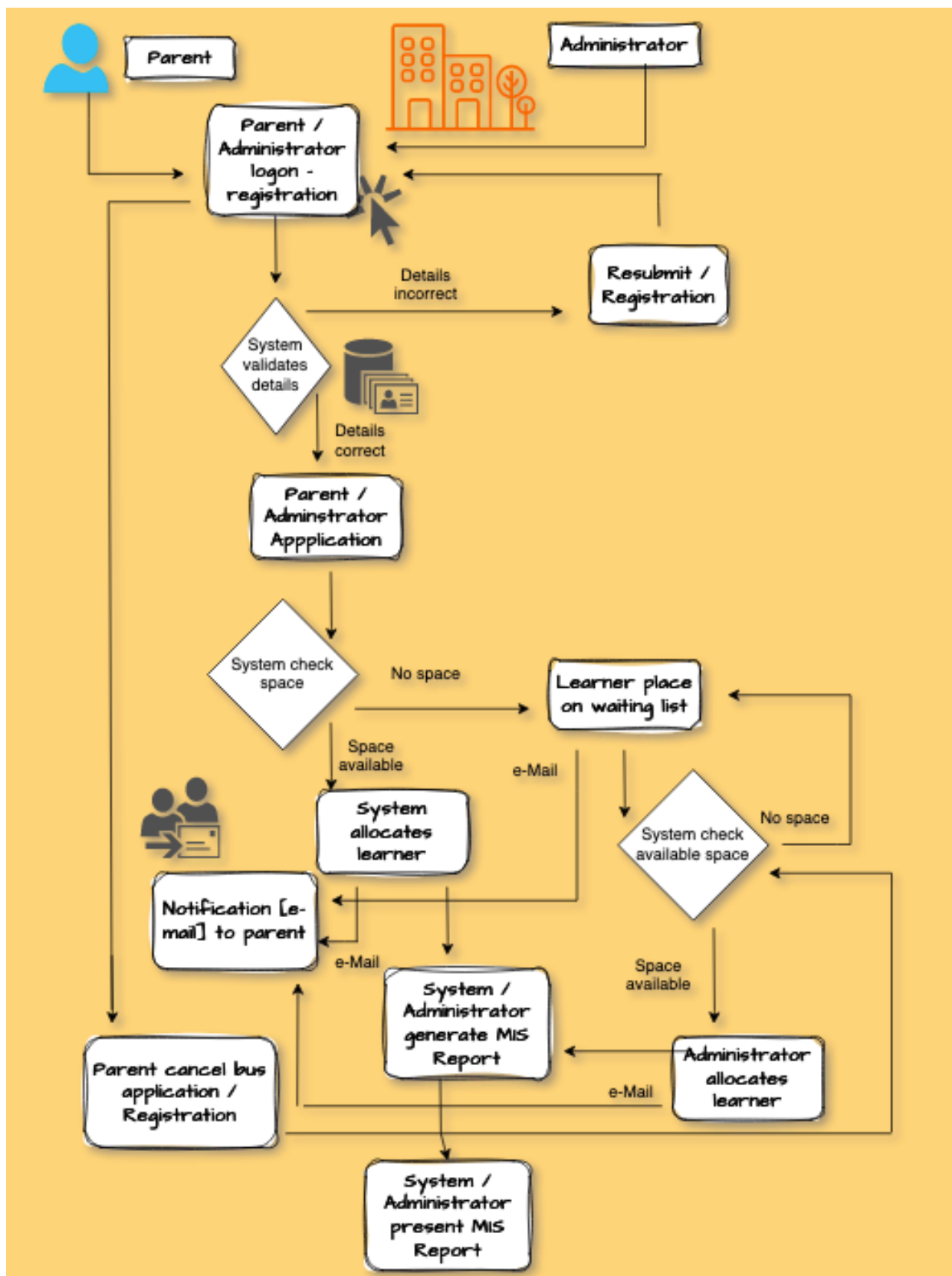- Bus 3 can transport 15 learners

Action(s) from the parent: 12 marks

1. Register his or her learner on the Online Bus Registration System.
2. Apply for the Bus Transport for 2025 for his or her learner.
3. The parent will receive an e-mail from the School to acknowledge the registration and application processes (if the application is successful?).
   a. Thus you have to create one e-mail address for one of the parents to test the practical system.
4. If the application was not successful the student will be placed <u>automatically</u> on a waiting list.
5. The parent will receive an e-mail if the learner is moved from the waiting list to the Online Bus Registration System.
6. Cancel the application for the Bus Transport for 2025.

Action(s) from the administrator: 4 marks

1. Register learners on the Online Bus Registration System.
2. Apply for the Bus Transport for 2025 on behalf of the learner.
3. Move learners from the waiting list to the Online Bus Registration System if space becomes available.
4. Use the MIS Reports to receive meaningful information regarding the bus transport system.
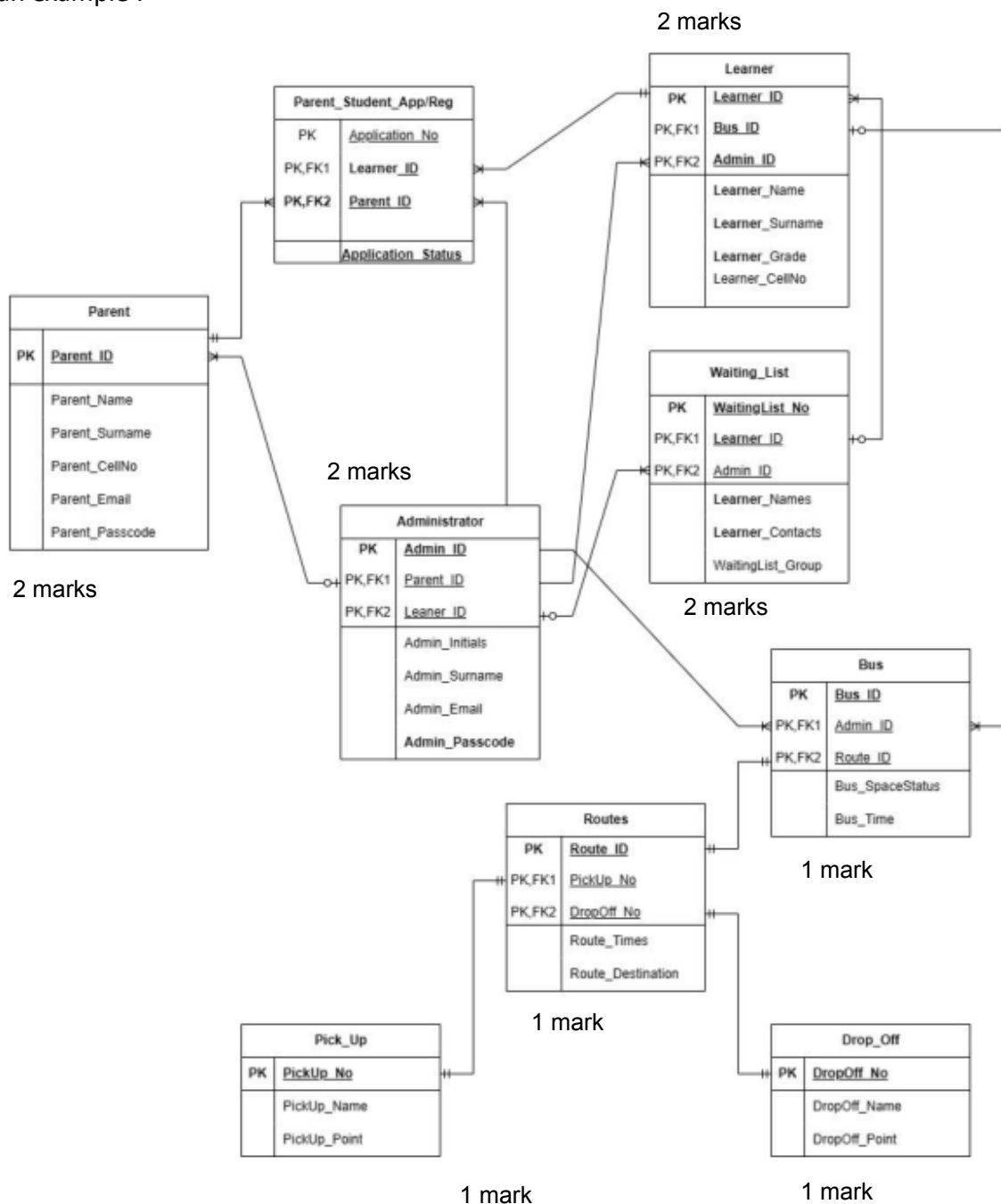
Here is an example :

1.2.2 ERD Diagram (12)

Remember that you have to have in your ERD <u>tables</u> for the parent, learner, and administrator, and tables to import the data for the bus routes, bus numbers, morning pick up and afternoon drop off numbers, morning pick up and afternoon drop off names and pick up and drop off times.

Here is an example :

2 marks

Learner

PK	Learner_ID
PK,FK1	Bus_ID
PK,FK2	Admin_ID
	Learner_Name
	Learner_Surname
	Learner_Grade
	Learner_CellNo

Parent_Student_App/Reg

PK	Application_No
PK,FK1	Learner_ID
PK,FK2	Parent_ID
	Application_Status

Parent

PK	Parent_ID
	Parent_Name
	Parent_Surname
	Parent_CellNo
	Parent_Email
	Parent_Passcode

2 marks

2 marks

Waiting_List

PK	WaitingList_No
PK,FK1	Learner_ID
PK,FK2	Admin_ID
	Learner_Names
	Learner_Contacts
	WaitingList_Group

Administrator

PK	Admin_ID
PK,FK1	Parent_ID
PK,FK2	Leaner_ID
	Admin_Initials
	Admin_Surname
	Admin_Email
	Admin_Passcode

2 marks

Bus

PK	Bus_ID
PK,FK1	Admin_ID
PK,FK2	Route_ID
	Bus_SpaceStatus
	Bus_Time

1 mark

Routes

PK	Route_ID
PK,FK1	PickUp_No
PK,FK2	DropOff_No
	Route_Times
	Route_Destination

1 mark

Pick_Up

PK	PickUp_No
	PickUp_Name
	PickUp_Point

Drop_Off

PK	DropOff_No
	DropOff_Name
	DropOff_Point

1 mark

1 mark

## 1.3   Section C (Backup and Recovery for the Database and Programming code) [4]

1.3.1   Backup and Recovery Software for the Database (2)

Remember software must be free and not have a trail period, that can expire before your examination of your system at the end of the year.
                                                                  2 marks

Free database backup software
From sources across the web

SQL backup	BackupPC	EaseUS Todo Backup
Free Endpoint Backup	NovaBACKUP	Arcserve
Bacula	Dbsync Cloud Replication	Duplicati
FBackup	Redstor backup and arch...	Comet Backup
Veeam Backup for AWS	AOMEI	SqlBak

GitHub

SQLBackupAndFTP

MySQL Workbench

MyPHP Admin

1.3.2   Backup and Recovery process for the Programming code and your Portfolio (assessments) (2)

Remember software must be free and not have a trail period, that can expire before your examination of your system at the end of the year

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Free backup and recovery software

From sources across the web

BackupPC ⌄	EaseUS Todo Backup ⌄	AOMEI Backupper Stand... ⌄
FBackup ⌄	Areca Backup ⌄	Paragon Backup & Recov... ⌄
Acronis True Image ⌄	Cobian Backup ⌄	MiniTool Partition Wizard ⌄
Microsoft Windows ⌄	UrBackup ⌄	Acronis Cyber Protect H... ⌄
Amanda ⌄	Stellar Data Recovery Ste... ⌄	Bacula ⌄
Clonezilla ⌄	Cloud backup ⌄	CrashPlan ⌄
Duplicati ⌄	EaseUS MobiSaver ⌄	Google Drive ⌄
HP Recovery Manager ⌄	Veeam Backup for Micro... ⌄	