Development Practice 01

ActiveWear Line is a small, independent, sports shop who sells sports footwear to customers from their premises in Coventry.

They currently have a spreadsheet that records the shoes they have in stock but fails to record any sales. The spreadsheet can be downloaded from here.

They have asked you to design and make a relational database which expands their current stock sheet to handle sales as well. The date/time of each sale along with the shoes purchase, and total sale price needs recording but there is no requirement to record the customer who makes the purchase.

Activity 1 [8]
Produce an entity relationship diagram (ERD) for the database by normalising the given data to third normal form.

Save your entity relationship diagram in your folder for submission as **activity1erd**

- in your chosen software format
  and
- as a PDF

You are advised to spend ***1 hour and 10 minutes*** on this task.

Activity 2 [8]
Produce a data dictionary for your database using the given document. Duplicate the table, extend the box space and add extra rows to fit your answer as required.

Save your data dictionary in your folder for submission as **activity2data**

- in your chosen software format
  and
- as a PDF

You are advised to spend ***1 hour and 10 minutes*** on this task.

Activity 3 [6]
Produce designs for the required input / outputs including:

- A form to enter details of new shoes
- A form which can be used to add stock of shoes when they are delivered
- A form which can be used to process a sale of potentially many shoes in the same transaction
- A paper receipt
- A report which counts the number of each shoe sold in the last week (no matter of size) sorted by which are the most popular. The report shouldn't include any shoes with zero sales.

Save your designs in your folder for submission as **activity3interface**

- in your chosen software format
  and
- as a PDF

You are advised to spend ***1 hour and 45 minutes*** on this task.

Activity 5: Database development [20]

Develop your database using the information in the documents you produced for activities 1 to 3.

Record your database development as annotated screenshots in a single document.

Your screenshots should show:

- your tables, including the fields and attributes
- your table relationships
- your queries, including fields and criteria
- the output of your queries
- logging in as different users and the access levels provided
- the forms you have created
- the reports you have created
- evidence of working validation

Save your document in your folder for submission as **activity5database**

- in your chosen software format
  and
- as a PDF

You are advised to spend ***3 hours and 15 minutes*** on this activity.

Mark Scheme

Assessment focus	Band 0	Band 1	Band 2	Band 3	Band 4	Max. mark
Activity #1: ERD	**0**	**1-2**	**3-4**	**5-6**	**7-8**	**8**
	No rewardable material	ERD shows an attempt at normalisation with significant data redundancy. ERD is partially complete with some correct relationships shown.	ERD shows that most data is correctly normalised with minimal data redundancy. ERD is partially complete with correct relationships but the relationship types are not clear.	ERD shows that most data is correctly normalised with minimal data redundancy. ERD is largely complete with mostly correct relationships and relationship types shown.	The ERD shows that the data is correctly normalised with no data redundancy. ERD is fully drawn with correct relationships and relationship types shown throughout.	
Activity #2: Data Dictionary	**0**	**1-2**	**3-4**	**5-6**	**7-8**	**8**
	No rewardable material	Uses some meaningful field and table names with some inconsistencies. The data dictionary has limited use of correct data types. The data dictionary shows limited use of validation which may be inaccurate for some of the fields that require validation. The data dictionary identifies some primary and foreign key fields.	Uses meaningful field and table names with minor inconsistencies. The data dictionary has correct data types for most fields. The data dictionary has accurate validation rules The data dictionary identifies most primary and foreign key fields.	Uses a recognised naming convention is used with minor inconsistencies for fields and tables. The data dictionary has correct data types for most fields. The data dictionary has accurate validation rules for most of the fields that require validation. The data dictionary identifies all primary and most foreign key fields.	Uses a recognised naming convention is used consistently for fields and tables. The data dictionary has correct data types for all fields. The data dictionary has accurate validation rules for all fields that require validation. The data dictionary identifies all primary and foreign key fields.	
Activity #3: Data Dictionary	**0**	**1-2**	**3-4**	**5-6**	[redacted]	**6**
	No rewardable material	Interface design is limited, including some forms, queries and report required with some of the relevant fields. Interface design has details of some criteria and calculations required which may include inaccuracies. Design is vague, making implementation of the interface by a third party difficult.	Interface design is adequate, including most forms, queries and reports required with most of the relevant fields. Interface design includes accurate details of some criteria and calculations required. Design is informative but not always clear, allowing the interface to be implemented by a third party with minor difficulties.	Interface design is thorough, including the full range of forms, queries and reports required with relevant fields. Interface design includes accurate details of criteria and calculations required. Design is clear and informative, allowing for the interface to be easily implemented by a third party.		

Activity #5: Database	**0**	**1-5**	**6 - 10**	**11-15**	**16 -20**	**20**
	No rewardable material	Database structure is logical only in parts with limited data integrity. Object names are unclear making maintenance of the database by a third party difficult. Database user interface is unclear or provides limited information and there are inconsistencies and inaccuracies in formatting so a user would experience difficulty in using the database. The database uses minimal validation and checking procedures resulting in a system with limited capacity to reduce errors or handle unexpected events. The database provides limited access control. The database may not be fully functional and/or may have major errors that prevent the database from meeting the given criteria.	Database has structure that is mostly logical and enforces data integrity for some relationships. Some object names are clear allowing it to be maintained by a third party with minor difficulties. Database user interface is clear but there are some inconsistencies and inaccuracies in formatting allowing a user to use the database with minor difficulties. The database uses some accurate validation and checking procedures, resulting in a system that minimises the most common errors and handles some unexpected events. The database provides appropriate access to some defined user groups. The database is functional and meets most of the given criteria with minimal errors.	Database has structure that is mostly logical and enforces data integrity for some relationships. Some object names are clear allowing it to be maintained by a third party with minor difficulties. Database user interface is clear but there are some inconsistencies and inaccuracies in formatting allowing a user to use the database with minor difficulties. The database uses some accurate validation and checking procedures, resulting in a system that minimises the most common errors and handles some unexpected events. The database provides appropriate access to some defined user groups. The database is functional and meets most of the given criteria with minimal errors.	Database has a logical structure that fully enforces data integrity for relationships throughout. Appropriate and clear object names are used throughout allowing it to be easily maintained by a third party. Database user interface is clear and intuitive, consistently and accurately formatted allowing a user to easily use the database. Database uses accurate validation and checking procedures throughout, resulting in a robust system that minimises errors and handles unexpected events. The database provides appropriate access for defined user groups. The database is fully functional and fully meets the given criteria.	