**IT IS YOUR RESPONSIBILITY TO KEEP A RECORD OF ALL WORK SUBMITTED**

|  |
| --- |
| **Part B: Marking and Assessment**  **(to be completed by Module Lecturer)** |
| This is an INDIVIDUAL assessment.  This assignment will be marked out of 100%  This assignment contributes to 50% of the total module marks. |
| **Assessment Task:**  Using the simplified partial given ERD (appendix B), analyse the requirements (appendix A) and then:   1. Produce a script suitable for SQL Developer to create the tables in the ERD (appendix B). Remember to define a primary and foreign key(s) where necessary using constraints. Entity definitions are found in appendix C.   You will require some numeric data types for certain attributes so that you can comply with the requirement for numeric functions in queries. Examine the data records supplied carefully to identify the numeric attributes. There is an example in appendix C.  Using this document, place a copy of your final script (the DDL) here.  Populate the tables with the .sql files supplied in the folder ‘SQL Scripts’ on BlackBoard. Note, these files must be opened in Notepad (Windows) or TextEdit (macOS) from where you can then copy/paste them into an SQL worksheet.   1. Write SQL statements necessary to satisfy the following queries on page 3. Remember to use sensible headings where appropriate.   The queries will retrieve data from single and multiple tables, they will use textual and numeric functions as well as creating views.  Again, using this document, place a copy of the DML (SQL for creation of queries) together with the results or outputs of these queries under each question below.  Please ensure that the output columns are ‘lined up’ and nicely formatted when copying and pasting from the SQL interface.  **Queries:**   1. Produce a ‘telephone list’ for all suppliers. Define a ‘View’ and include the supplier name and telephone number. Sort by supplier ascending. The final output should only be one column.   **(5 marks)**   1. Create a query to establish which invoices are over £200. Sort on TOTAL\_VALUE descending.   **(3 marks)**   1. Create a query to select a particular invoice of your choice. The user should be prompted for the criteria – i.e. INVOICE\_NUMBER should be entered at run-time.   Select…From…Where INVOICE\_NUMBER = 100001 is INCORRECT  **(4 marks)**   1. Produce a list of parts for both warehouses. Include BIN\_NUMBER and QUANTITY as well as other suitable attributes. This should be one query. Sort by WAREHOUSE\_ID. Use correlation (alias) names.   **(4 marks)**   1. Produce a list of parts to find the value of stock by line (Qty x Unit Price) in the Haverfordwest warehouse. Order by PART\_NUMBER\_WITH\_PREFIX.   **(4 marks)**   1. Create a View from your query 5 and then use it to calculate the total value of all stock currently held in the Haverfordwest warehouse. Sort on PART\_NUMBER then create another view to calulate the total stock value.   **(6 marks)**   1. Produce a list of parts that are out of stock in both warehouses.   **(4 marks)**   1. Produce a list of parts that are available from both warehouses. You will need two queries and a view.   **(10 marks)**   1. Create a query to find out which parts are cheaper to buy from Sweden, when converted from Swedish Krona to Sterling and rounded to 2 decimal places. Use PART\_NUMBER\_WITH\_PREFIX, STERLING\_NET and your third calculated column. To convert krona to sterling use 13/100.   **(10 marks)**   1. Produce a query to increase the cost of all parts by 5%. Use PART\_NUMBER\_WITH\_PREFIX, STERLING\_NET and your new price including the 5%. Order by the new price.   **(3 marks)** |

**Assessment Criteria:**

Please see Appendix D

**Appendix A**

EuroParts.com is an established company in Wales. It deals with the import and export of car parts. The company’s suppliers are based in the UK and Sweden.

EuroParts.com has a warehouse in Haverfordwest and another in Stansted and both hold a stock of parts. Steve is manager of the Haverfordwest branch and Peter manages the Stansted warehouse. Each warehouse has many storage bins comprised of shelves and each shelf will have many plastic part storage containers which are numbered. For simplicity only use the shelf numbers.

Part prices are in two currencies, UK sterling, and Swedish krona. All part prices are net of Vat.

1. Each warehouse would have a unique set of bins numbers i.e., bin number A1M located in Warehouse ID “Steve Haverfordwest” would not be found in Warehouse ID “Peter Essex”.
2. Some bin shelves (location) may be empty.
3. There will be no requirement for additional warehouses.
4. There may be new suppliers.
5. There may be new parts.
6. The same part may be kept in both warehouses.
7. The entity “Location” is the shelf location on a bin. A bin will have several shelves.
8. The part number ‘prefix’, the first two digits, identifies whether the part is for bodywork, engine, accessory etc.
9. The discount code and discount percentage are the markup on the part (e.g., Discount\_UK\_Code of 1 has a Discount\_UK\_Percent of 25 which means 25% profit). The net cost of parts is in both UK sterling and Swedish Krona.
10. For simplicity the Invoice contains a minimum number of attributes.

There is a M:N relationship between supplier and part but this will not be investigated for the purposes of this assignment. It can be ignored. There would also be a relationship between supplier and warehouse but this is also outside the remit of this coursework.

# Appendix B

# Entity-Relationship Diagram

**A simplified and partial ERD for EuroParts.com**

1

accommodates

is placed in a

contains

sends

is composed of

1

0..\*

1

1

1

1..\*

1

0..\*

Bin

Warehouse

Location

Invoice detail

Invoice

Part

Supplier

0..\*

These are LINK entities.

## Appendix C

holds

1..\*

1..\*

## Entity Definitions/Attributes:

**Part** (part\_number\_with\_prefix, part\_number, description, discount\_sw\_code, discount\_sw\_percent, krona\_net, discount\_uk\_code, discount\_uk\_percent, sterling net)

**Supplier** (supplier\_number, supplier\_name, address, town, county, postcode, contact\_number, email\_address, country)

**Warehouse** (warehouse\_id, address, town, county, postcode, contact\_number)

**Bin** (bin\_number, warehouse\_id)

**Location** (part\_number\_with\_prefix, bin\_number, quantity)

**Invoice** (invoice\_number, idate, vat\_total, total\_value, supplier\_number)

**InvoiceDetail** (invoice\_number, part\_number\_with\_prefix, quantity, net\_price, net\_vat)

**Use part\_number\_with\_prefix as the PK for the part table.**

An example for data types for ‘Part’ is shown below:

**Part**

|  |  |  |
| --- | --- | --- |
| **Name** | **Null?** | **Type** |
| PART\_NUMBER\_WITH\_PREFIX | NOT NULL | CHAR(12) |
| PART\_NUMBER |  | CHAR(10) |
| DESCRIPTION |  | VARCHAR2(40) |
| DISCOUNT\_SW\_CODE |  | CHAR(4) |
| DISCOUNT\_SW\_PERCENT |  | NUMBER(3) |
| KRONA\_NET |  | NUMBER |
| DISCOUNT\_UK\_CODE |  | CHAR(4) |
| DISCOUNT\_UK\_PERCENT |  | NUMBER(3) |
| STERLING\_NET |  | NUMBER |

# Populate tables with the following data:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PART\_NUMBER\_WITH\_PREFIX**  **PART** | **PART\_NUMBER** | **DESCRIPTION** | **DISCOUNT\_SW\_CODE** | **DISCOUNT\_SW\_PERCENT** | **KRONA\_NET** | **DISCOUNT\_UK\_CODE** | **DISCOUNT\_UK\_PERCENT** | **STERLING\_NET** |
| 104531331 | 4531331 | Bushing | D51 | 35 | 38.81 | 1 | 25 | 3.68 |
| 105112495 | 5112495 | Retaining Ring | D51 | 35 | 5.48 | 1 | 25 | .49 |
| 104543518 | 4543518 | Bushing | D51 | 35 | 25.44 | 1 | 25 | 2.19 |
| 104246112 | 4246112 | Rubber Block | D51 | 35 | 5.44 | 1 | 25 | .74 |
| 1055557379 | 55557379 | Chain Gear | D01 | 30 | 177.34 | 90 | 45 | 12.62 |
| 109178336 | 9178336 | Chain Gear | D01 | 30 | 177.05 | 90 | 45 | 12.29 |
| 105450192 | 5450192 | Chain Gear | D01 | 30 | 519.98 | 1 | 25 | 51.68 |
| 104411997 | 4411997 | Switch | D51 | 35 | 116.47 | 1 | 25 | 11.59 |
| 107585086 | 7585086 | Chain Tension | D51 | 35 | 536.55 | 90 | 45 | 43.93 |
| 108373078 | 8373078 | bearing | D51 | 35 | 16.96 | 90 | 45 | 1.93 |
| 109129669 | 9129669 | Cylinder Head | C00 | 18 | 12160.17 | 2 | 10 | 1099.87 |
| 109522822 | 9522822 | Relay | D51 | 35 | 377.67 | 1 | 25 | 44.39 |
| 104161162 | 4161162 | Seals | D01 | 30 | 15.53 | 1 | 25 | 1.42 |
| 107522733 | 7522733 | Fuel Pump | D81 | 40 | 72.36 | 36 | 50 | 29.33 |
| 107536923 | 7536923 | Fuel Pump | D81 | 40 | 1331.47 | 36 | 50 | 201.41 |
| 105954557 | 5954557 | Tooth Belt | D81 | 40 | 1116.06 | 90 | 45 | 74.59 |
| 1055556404 | 55556404 | Belt | D81 | 40 | 64.86 | 36 | 50 | 5.11 |
| 1093185051 | 93185051 | Belt | D81 | 40 | 128.5 | 36 | 50 | 19.16 |
| 1093185049 | 93185049 | Belt | D81 | 40 | 92.84 | 36 | 50 | 16.78 |
| 1093185050 | 93185050 | Belt | D81 | 40 | 175.5 | 36 | 50 | 16.62 |
| 1012795070 | 12795070 | Belt | D51 | 35 | 12.22 | 90 | 45 | 10.22 |
| 10930600 | 930600 | Seal | D51 | 35 | 41.42 | 90 | 45 | 22.11 |
| 104109088 | 4109088 | Gear | D51 | 35 | 99.45 | 90 | 45 | 38.99 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SUPPLIER\_NUMBER** | **SUPPLIER\_NAME** | **ADDRESS** | **TOWN** | **COUNTY** | **POSTCODE** | **CONTACT\_NUMBER** | **EMAIL\_ADDRESS** | **COUNTRY** |
| H001 | Higher Oak | Oak Road, Wrexham Ind Est | Wrexham | Wrexham | LL13 9RG | 01443456123 | HighOak@hotmail.co.uk | Wales |
| N001 | Nordic Car Company | Unit 2, ByFleet Technical Centre | ByFleet | Surrey | KT14 7JL | 01798445566 | NordicCars@tiscali.co.uk | Great Britain |
| S002 | Swain and Jones | 35-42 East Street | Farnham | Surrey | GU9 7SW | 01798776589 | French1@hotmail.co.uk | Wales |
| U001 | Ultimate Car Force | Unit 4, Burrows Ind Est | Shere, Guildford | Surrey | GU55 9QQ | 01567836425 | UltimateCars@yahoo.com | Great Britain |
| W001 | Workshop Saab Specialists | 9 Clothier Road | Brislington | Bristol | BS4 5PS | 01792623594 | TheWorkshop@btconnect.com | Great Britain |
| A001 | Abbot Racing | Spinnels Farm, Wix | Manningtree | Essex | CO11 2UJ | 01279641225 | AbbottRacing@yahoo.co.uk | Great Britain |
| A002 | Autohaus Furst GMBH | Berbillger Str 4 | 71254 Ditzingen |  |  | 004971191893 | Autohaus@yahoo.de | Germany |
| B001 | Bond Street | Kerry House, 108 Vaughan Way | Leicester | Leicester | LE2 6HJ | 01664765533 | BondStreetSaab@hotmail.co.uk | Great Britain |
| O001 | Otto Olssons Bil AB | Box 94 | 27322 | Tomelilla |  | 004641778100 | OttoOlsson@hotmail.se | Sweden |
| S003 | Saab Owners Club | 16 Thistle Nest Close | Otley | West Yorkshire | LS21 2RR | 01552786632 | SaabOwners@hotmail.com | Great Britain |
| F001 | French and Swedish Car Centre | 32 Merlins Bridge | Haverfordwest | Pembrokeshire | SA61 5SZ | 01437766511 | FrenchSwedish@hotmail.com | Wales |
| M001 | Merlin Auto Centre | Merlins Bridge | Haverfordwest | Pembrokeshire | SA61 4GH | 01437765522 | MerlinAutoCentre@hotmail.com | Wales |
| S001 | Swedish Parts Centre | Unit 4, Chatterly Industrial Estate | Stansted | Essex | CM23 5HJ | 01279563214 | SwedishParts@btconnect.com | Great Britain |

**SUPPLIER**

**WAREHOUSE**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **WAREHOUSE\_ID** | **ADDRESS** | **TOWN** | **COUNTY** | **POSTCODE** | **CONTACT\_NUMBER** |
| Steve Haverfordwest | Riverview, Spittal | Haverfordwest | Pembrokeshire | SA62 3BA | 01437 123456 |
| Peter Essex | Little Mays | Dunmow | Essex | CM23 5TT | 01371 870000 |

|  |  |
| --- | --- |
| **BIN\_NUMBER** | **WAREHOUSE\_ID** |
| O137 | Peter Essex |
| O134 | Peter Essex |
| O138 | Peter Essex |
| O133 | Peter Essex |
| O129 | Peter Essex |
| O128 | Peter Essex |
| O127 | Peter Essex |
| O126 | Peter Essex |
| O124 | Peter Essex |
| O121 | Peter Essex |
| O120 | Peter Essex |
| O119 | Peter Essex |
| O118 | Peter Essex |
| O117 | Peter Essex |
| O114 | Peter Essex |
| O113 | Peter Essex |
| O112 | Peter Essex |
| N517 | Peter Essex |
| N516 | Peter Essex |
| N515 | Peter Essex |
| N514 | Peter Essex |
| N513 | Peter Essex |
| N512 | Peter Essex |
| N511 | Peter Essex |

**BIN**

|  |  |
| --- | --- |
| **BIN\_NUMBER** | **WAREHOUSE\_ID** |
| A2L | Steve Haverfordwest |
| A2T | Steve Haverfordwest |
| A2M | Steve Haverfordwest |
| A1L | Steve Haverfordwest |
| A1M | Steve Haverfordwest |
| A1T | Steve Haverfordwest |
| A15M | Steve Haverfordwest |
| A15T | Steve Haverfordwest |
| A15L | Steve Haverfordwest |
| A9L | Steve Haverfordwest |
| A9M | Steve Haverfordwest |
| A9T | Steve Haverfordwest |
| A4L | Steve Haverfordwest |
| A4M | Steve Haverfordwest |
| A4T | Steve Haverfordwest |
| A5T | Steve Haverfordwest |
| A5M | Steve Haverfordwest |
| A5L | Steve Haverfordwest |
| A6L | Steve Haverfordwest |
| A6M | Steve Haverfordwest |
| A6T | Steve Haverfordwest |

**LOCATION**

|  |  |  |
| --- | --- | --- |
| **PART\_NUMBER\_WITH\_PREFIX** | **BIN\_NUMBER** | **QUANTITY** |
| 104531331 | O137 | 25 |
| 104531331 | A1M | 20 |
| 105112495 | O133 | 50 |
| 105112495 | A1T | 50 |
| 104543518 | A1L | 25 |
| 104543518 | O134 | 35 |
| 104246112 | O133 | 135 |
| 1055557379 | O129 | 5 |
| 109178336 | O128 | 2 |
| 105450192 | A2L | 12 |
| 104411997 | A2L | 15 |
| 104411997 | O126 | 0 |
| 107585086 | A5T | 0 |
| 108373078 | A5M | 0 |
| 109129669 | A9M | 1 |
| 10930600 | O120 | 1 |
| 109522822 | O119 | 9 |
| 1012795070 | O118 | 200 |
| 104109088 | O117 | 20 |
| 104161162 | A1L | 126 |
| 107522733 | A1M | 26 |
| 107536923 | A15M | 16 |

**INVOICE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **INVOICE\_NUMBER** | **IDATE** | **VAT\_TOTAL** | **TOTAL\_VALUE** | **SUPPLIER\_NUMBER** |
| 100001 | 01-NOV-23 | 1.42 | 8.1 | N001 |
| 100002 | 01-NOV-23 | 12.39 | 70.77 | S001 |
| 100003 | 02-NOV-23 | 33.49 | 144.79 | N001 |
| 100004 | 02-NOV-23 | 14.26 | 351.49 | O001 |
| 100005 | 03-NOV-23 | 192.48 | 1099.87 | O001 |
| 100006 | 03-NOV-23 | 35.25 | 201.41 | O001 |
| 100007 | 04-NOV-23 | 25.79 | 149.22 | O001 |
| 100008 | 11-OCT-23 | 1.42 | 8.1 | N001 |
| 100009 | 10-OCT-23 | 1.42 | 8.1 | N001 |
| 100010 | 11-OCT-23 | 12.39 | 70.77 | S001 |

**INVOICE DETAIL**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **INVOICE\_NUMBER** | **PART\_NUMBER\_WITH\_PREFIX** | **QUANTITY** | **NET\_PRICE** | **NET\_VAT** |
| 100001 | 104531331 | 2 | 7.36 | 1.29 |
| 100001 | 104246112 | 1 | .74 | .13 |
| 100002 | 1055557379 | 1 | 12.62 | 2.21 |
| 100002 | 109178336 | 1 | 12.29 | 2.15 |
| 100002 | 107585086 | 1 | 43.93 | 7.47 |
| 100002 | 108373078 | 2 | 1.93 | .23 |
| 100003 | 1055556404 | 2 | 10.22 | 1.79 |
| 100003 | 107522733 | 4 | 117.32 | 20.53 |
| 100003 | 1093185049 | 1 | 16.78 | 2.94 |
| 100003 | 1012795070 | 100 | 47 | 8.23 |
| 100004 | 1093185050 | 1 | 16.62 | 2.91 |
| 100004 | 109178336 | 3 | 36.87 | 6.45 |
| 100004 | 1012795070 | 10 | 4.7 | .82 |
| 100004 | 107522733 | 10 | 293.3 | 4.08 |
| 100006 | 107536923 | 1 | 201.41 | 35.25 |
| 100007 | 108373078 | 1 | 1.93 | .23 |
| 100007 | 107585086 | 1 | 43.93 | 7.47 |
| 100007 | 105450192 | 2 | 103.36 | 18.09 |
| 100005 | 109129669 | 1 | 1099.87 | 192.48 |
| 100008 | 104531331 | 2 | 7.36 | 1.29 |
| 100008 | 104246112 | 1 | .74 | .13 |
| 100009 | 104531331 | 2 | 7.36 | 1.29 |
| 100009 | 104246112 | 1 | .74 | .13 |
| 100010 | 1055557379 | 1 | 12.62 | 2.21 |
| 100010 | 109178336 | 1 | 12.29 | 2.15 |
| 100010 | 107585086 | 1 | 43.93 | 7.47 |
| 100010 | 108373078 | 2 | 1.93 | .23 |

**Appendix D**

# ASSESSMENT CRITERIA

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Fail | Narrow Fail | 3rd Class / Pass | Lower 2nd Class / Pass | Upper 2nd Class / Merit | 1st Class / Distinction |
| Table Definitions in SQL 35% | * Relations/Tables missing. Primary keys, foreign keys and not null/null used incorrectly in most instances | * Relations/Tables missing. Primary keys, foreign keys and not null/null used incorrectly in most instances | * No Relations/Tables missing. Primary keys, foreign keys and not null/null used incorrectly in many instances | * No Relations/Tables missing. Primary keys, foreign keys and not null/null used incorrectly in some instances | * No Relations/Tables missing. Primary keys, foreign keys and not null/null used correctly in many instances | * No Relations/Tables missing. Primary keys, foreign keys and not null/null used correctly in most/all instances |
| SQL DML statements 55% | * Very few SQL statements that meet the information retrieval requirements detailed in the scenario | * Many SQL statements that do not meet the information retrieval requirements detailed in the scenario | * SQL statements that meet some of the information retrieval requirements detailed in the scenario | * Some SQL statements that do not meet the information retrieval requirements detailed in the scenario | * SQL statements that meet many of the information retrieval requirements detailed in the scenario | * SQL statements that meet all of the information retrieval requirements detailed in the scenario |
| Exceptional elegance of SQL queries 10% | * No attempt at SQL statements that produce innovative/ exceptional code | * V. Little attempt at SQL statements that produce innovative/ exceptional code | * Little attempt at SQL statements that produce innovative/ exceptional code | * Some attempt at SQL statements that produce innovative/ exceptional code | * Some very good attempts at SQL statements that produce innovative/ exceptional code | * Excellent attempt at SQL statements that produce innovative/ exceptional code |