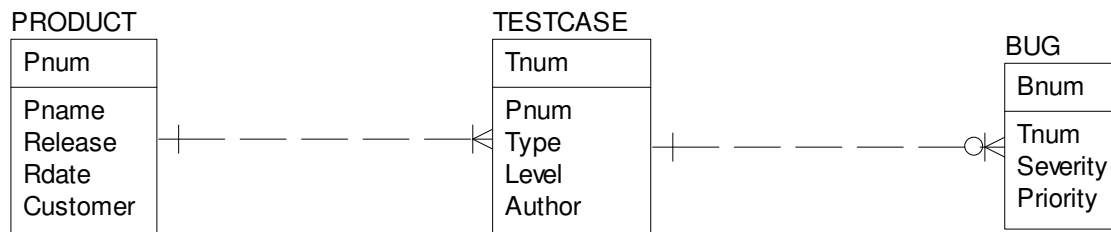


CS4123 Autumn 2016

Homework Assignment 5

Testing as a Service

This ER diagram fragment represents the business of a company that tests software products for other companies. Each Product has a name, release date and a release number which is expressed as a decimal number. The business creates test cases for each product. The Type of test may be Functional or Structural. The Level may be U(nit), I(ntegration), S(ystem) or A(cceptance). Severity is a number from 1 to 5, as is Priority.



Q1 The basic sets are **IDS, Names, Numbers** and **Dates**.

Based on these, declare 6 more Domains that can be used to specify the Attributes.

Q2 Specify the **record structure schemas** for this database, using your answers to question 1.

Q3 Using the record structures declared in Q2, specify the three Relations.

Q4 Write the following queries in **Relational Algebra**

- Get the test case details of each S(ystem) level test.
- List the Tnum, Author and Pnum for each U(nit) level test case.
- Get the details of all S(ystem) and A(cceptance) test cases.
- Get the release date of each product being tested for Customer MaxDB.
- List the identifiers of all Bugs with a severity of more than 3.
- List the Pnum of each Bug, along with its severity. Include the Bnum in the result.
- What is the priority of each bug found by Acceptance testing? Include the Bnum in the result.
- Get the customer for the test case identified by T1098
- Get the customer and release date for each product being Unit tested.
- Get the Tnum, author and type of testing being done for a Product named SWIFT11X.
- Get the author and type of testing done for each bug with a priority of 1.

List the Bnum and Priority of each bug found in products from the customer named MaxDB.

List the customer and Pname for each product that has been found to have a bug with severity 5

List all the Bug details of bugs that are in a Product named SWIFT11X.