



Higher
Coursework
Assessment Task



Higher Computing Science Assignment Assessment task Task 2: database design and development (part B)

This document provides information for teachers and lecturers about the coursework component of this course in terms of the skills, knowledge and understanding that are assessed. It must be read in conjunction with the course specification.

Valid for session 2021-22 only.

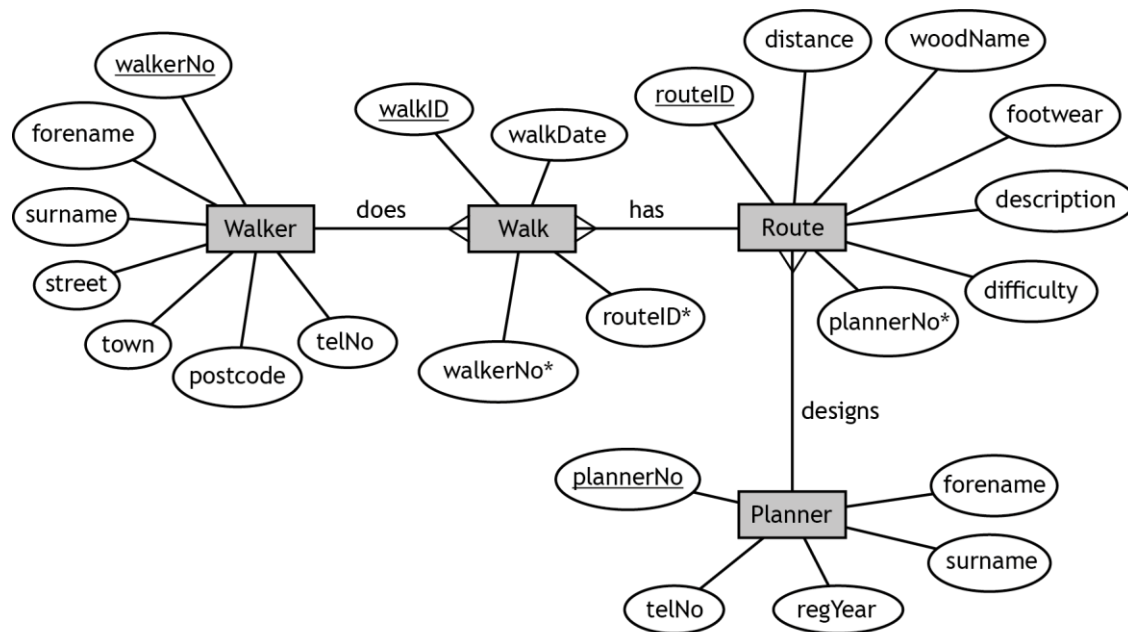
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Task 2: database design and development (part B)

The entity-occurrence diagram is used to draw the entity-relationship diagram for the Walkers database shown below.



The design is then implemented.

Your teacher or lecturer will provide you with a completed and populated database file.

- 2b** West Fife Walkers wants the most successful planner to design a new route. The most successful planner is the person whose route(s) have been walked more than other routes.

A query is required to display details of the four planners, along with the total number of times their route(s) have been walked. The most successful planner should be displayed at the top.

Implement the SQL statement to produce the following output.

(4 marks)

forename	surname	plannerNo	Total participants
Heidi	Benton	101	273
Selena	Booker	103	260
Daniel	Little	104	169
Takeshi	Chen	102	103

Print evidence of the implemented SQL statement and the output produced.

Include your name and candidate number on all evidence.

- 2c** The most successful planner begins to design the new route. As this route will be longer than the current longest route, West Fife Walkers would like to produce a list of all walkers who have walked the current longest route to ask them questions.

Implement the SQL statement(s) required to produce the list. The expected output is partially shown below.

(5 marks)

walkerNo	forename	surname	telNo
162000	Nancy	Burch	07820 622714
165692	Lola	Kent	07533 447224
167407	Lelia	Mercado	07740 567706
167549	Jayne	Mcneil	07758 443003
169193	Ofelia	Nash	07796 861247
191025	Trina	Hinton	07677 367751
192174	Lorena	Boyle	07142 881757
...

Print evidence of the implemented SQL statement(s) and the output produced.

Include your name and candidate number on all evidence.

- 2d** The footwear field in the Route table contains suitable footwear for the routes:

- ◆ Trail shoes
- ◆ Walking boots
- ◆ Waterproof shoes
- ◆ Boots (high ankle)
- ◆ Boots (robust, waterproof)
- ◆ Walking shoes

A query is designed to find all the routes that are suitable for any type of shoe.

The SQL statement shown below was implemented and tested.

```
SELECT Route.routeID, woodName, description
FROM Route
WHERE footwear = "Trail shoes"
OR footwear = "Waterproof shoes"
OR footwear = "Walking shoes";
```

The actual output from this SQL statement matches the expected output and is shown below.

routeID	woodName	Description
Dea002	Dean Wood	The forestry road is an easy stroll with open views of the surrounding area and its wildlife. The other half of the walk takes you through woodland down into the valley.
Dev002	Devilla	This walk completes the circuit round the end of the squirrel walk passing seats and nice picnic areas. On the way back a connecting path is taken to join one of the forestry roads.
Bal001	Balgownie	The Balgownie side of the walk is a mixture of open forestry road and woodland paths. The eastern edge has a well-established path through a community wood.

West Fife Walkers will add new routes to the database in the future. These new routes may include additional types of shoes.

Re-write the query so that it will always produce the expected output even if additional types of shoes are added.

Test that your amended query still produces the above output.

(2 marks)

Print evidence of the amended SQL statement and the output produced.

Include your name and candidate number on all evidence.

2e Initial analysis identified the following functional requirements:

- ◆ display suitable footwear for a chosen route
- ◆ display walkers who prefer to walk a route with a chosen level of difficulty
- ◆ display a list of walkers who have walked the longest route
- ◆ find the travelling distance from a walker's home to the starting point of a chosen route
- ◆ count number of route planners registered in a given year
- ◆ display the total number of walkers who have walked a route designed by each route planner

State the functional requirement that cannot be implemented using the West Fife Walker's database.

(1 mark)

Candidate name_____ Candidate number_____