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**Assignment Submission Form**

This form must be filled in and completed by the student(s) submitting an assignment

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| Name(s): Fawaz Alsafadi |
| Programme: Computer applications |
| Module Code: CA208 |
| Assignment Title: Assignment 2 – Perfect number test |
| Submission Date: 10/12/17 |
| Module Coordinator: David Sinclair |
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Name(s):Fawaz Alsafadi Date: 10/12/17

**Assignment 2 - Perfect Number Test**

Write a Prolog predicate **perfect(N)** that returns true if **N** is a perfect number. A number, **N**, is a perfect number if the sum of its factors, not including itself, is equal to **N**. For example, 6 is a perfect number. Its factors, not including itself, are 1, 2 and 3; and their sum is 6.

**Solution:**

**% Goes between 1 and our factor - 1 and checks if any number in that range is divisible by our desired number and yields that number.**

factor(X,N) :- X1 is X-1, between(1,X1,N), 0 is X mod N.

**% Puts all the divisible numbers into a set called L**

factors(X, L) :- setof(N, factor(X,N), L).

**% Sums all the factors in list L and checks if the sum of all the factors equals to the desired number**

perfect(N) :- factors(N, L), sumlist(L, N).