ព្រះរាជាណាចក្រកម្ពុជា

ជាតិ​ សាសនា ព្រះមហាក្សត្រ

Institute of technology of Cambodia

Department of Information and communication Engineering



TP03: Relation Function and Sequences

Cours: Theory of Computer Science

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1)

* Reflexive: for all x, xRx

Ex: Relation<<is equal to>>,<<is a subset of>>,<<devides>>.

* Irreflexive: for all x, x~~R~~x

Ex: Relation <<is greater than>>,<<is not equal to>>.

* Transitive: ( xRy and yRz ) => xRz

Ex: Relation <<is parallel to>>,<<is greater than>>,<<is equal to>>.

* Symmetric: xRy => yRx

Ex: Relation<< is married to>>, <<is equal to>>,<<is brother or sister of>>.

* Antisymmetric: ( xRy and yRx ) => x=y

Ex: Relation<<divides>>,<< is equal to>>.

* Asymmetric: for all x and y, xRy => y~~R~~x

Ex: Relation <<is less than>>, <<is greater than>>.

2) Differences between function and not function:

* Function: f={(1,
* Not function: f={(1, violated for 3, appears twice: f(3)=

3)

* Injection function:
* “one- to- one “or “1 – 1”

Injective Not Injective

A

4)

* Surjection function:
* “on to”
* For f: A->B, the elements in B are “hit”at least once

Surjective Not Surjective

5)

* Bijection function: is an injection ( one-to-one) and ( onto) or (1-1 correspondence).
* x=y)
* For f: A->B, every B element is “hit” once and only once

Bijection Not Bijection

6) we have “1, 3, -5, 8, 11, 17”

==> it is noq sequence because set of element not written in order list.

7) if we have a sequence”2, 3, 5, 7, 11, 17” it is prime number.

8) if we have a sequence “0, 1, 1, 2, 3, 5, 8, 13, 21, 34” it is Fibonacci sequence.