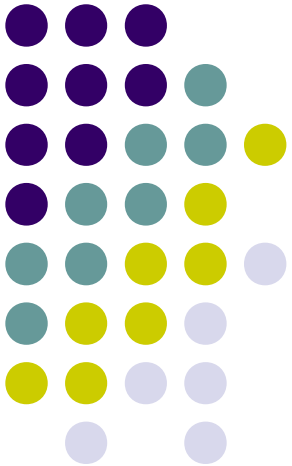
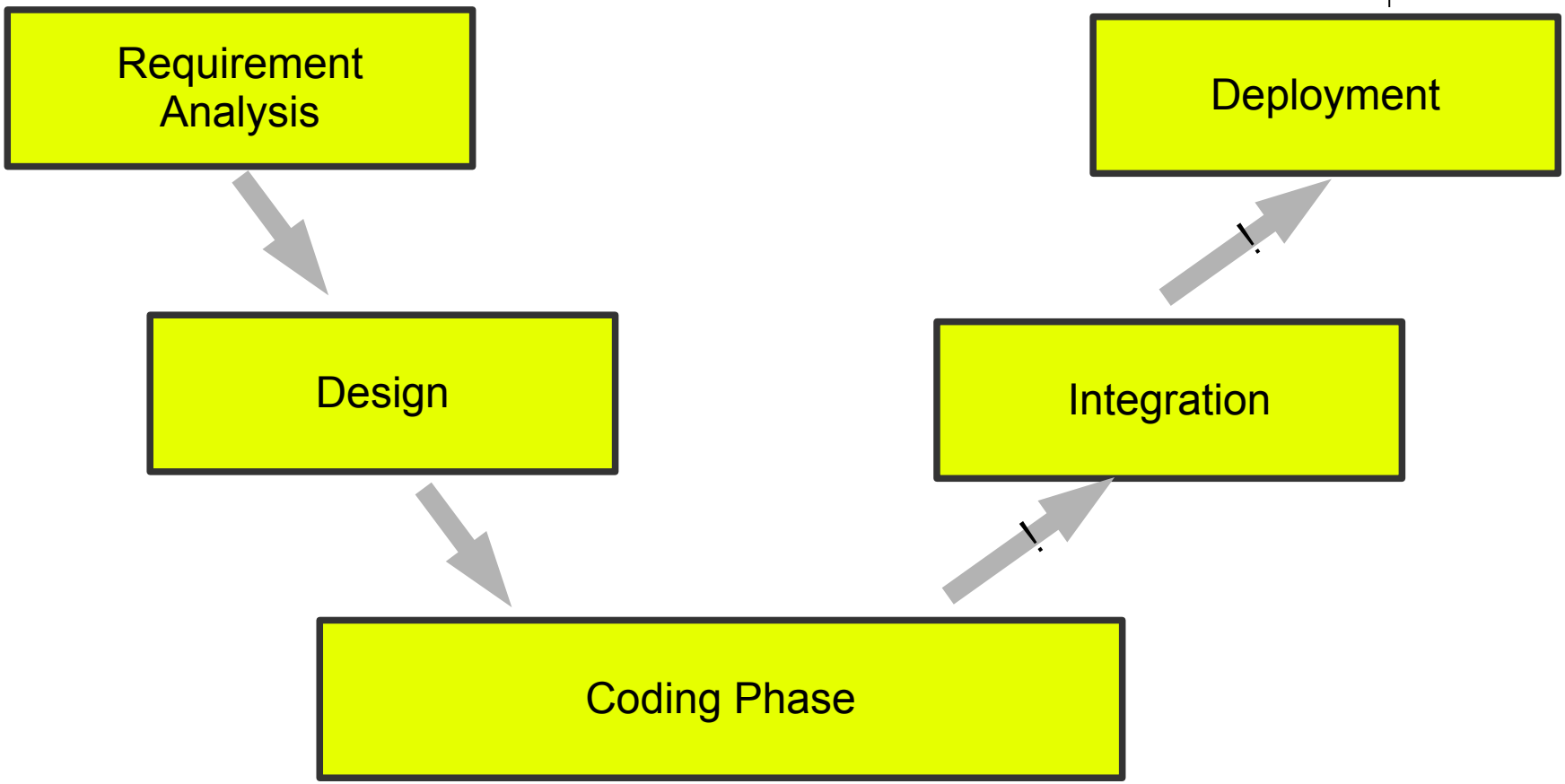
Travaux d'Etudes et Recherche:

Genie Logiciel

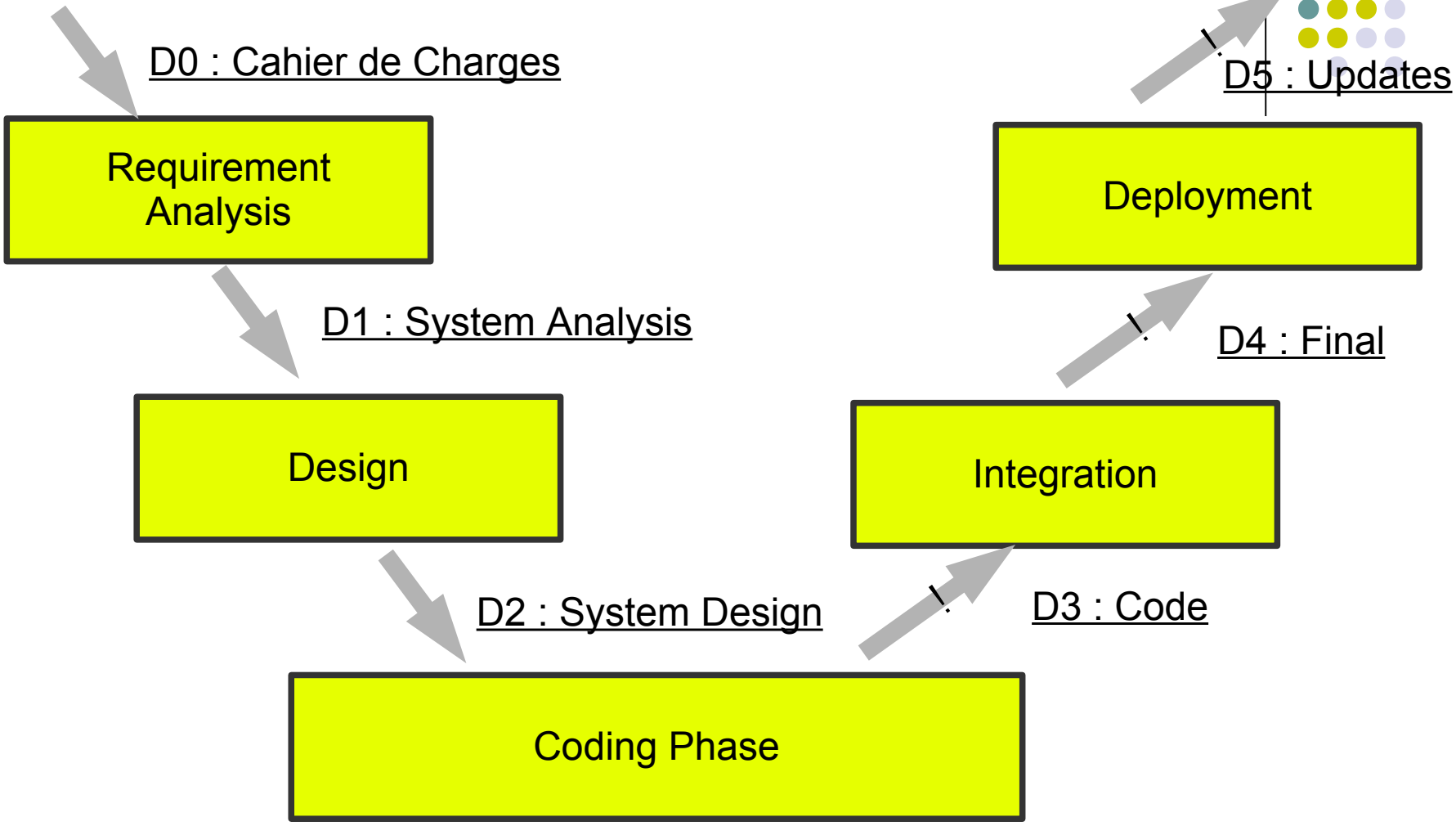
Apprendre un processus de développement par exemple

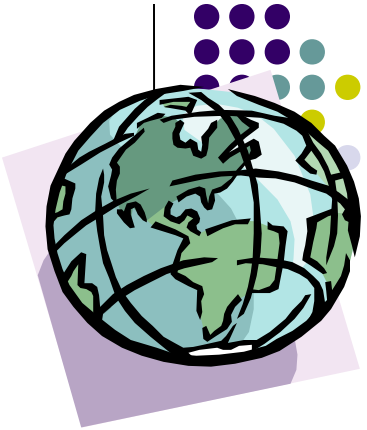


How can software be «built systematically»?



How can software be «built systematically»?





About: D1 : System Analysis

- In contrast to the Design Document D2, the analysis milestone is oriented towards the

  Cahier de Charge

- It attemopts to identify/making explicit
  - the actors of the system
  - the possible use scenarios
  - the data necessary understand the system

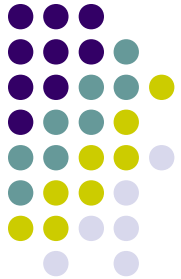
Cahier de Charges : Objectives

- The protocols of components (abstract)
- The life-cycle of threads, communications, processes

IT ATTEMPTS TO CAPTURE THE REQUIREMENTS,

BUT AVOIDS DESIGN DECISIONS EXCEPT MENTIONED IN THE CDC

Structure du CdC Fonctionel

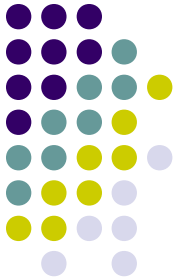


- D1 Fonctionel (le “noyau dur” d‘un D1)
  - Structuration du CDC sous

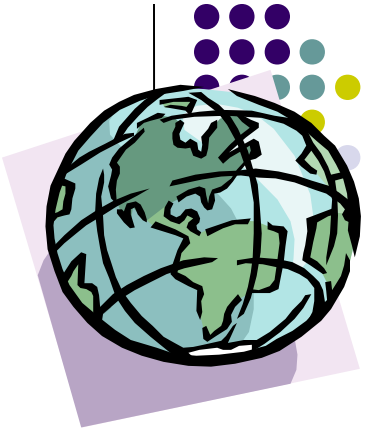
    forme des diagrammes

    UML
  - Identifiant des Questions „mission critical“
    - dans la comprehension du CDC (demander client)
    - dans la feasabililité du projet

Structure du CdC



- Suit la structure du CdC Fonctionel : Rappel
  - Objectifs et contexte du produit
    - reponses au questions:
      - à qui, à quoi le produit reend-il service
      - Sur qui, sur quoi agit-il
      - dans quel but.
  - Identification des contraintes:
    - économiques
    - environementales
    - securitaires
    - industrielles („doit etre fabriqué au Canada“)
    - materielles („doit marcher sur Windows XP“,
      “doit utiliser lecteur de Carte XY”,



About: D1 : System Analysis

- In contrast to the Design Document D2, the analysis milestone is oriented towards the Cahier de Charge („analyses the CdC”)
- It attempts to identify/making explicit
  - the actors of the system (3 pp UML plus descr.)
  - the possible use scenarios (20 pages scnenarios
  - the data necessary understand the system (5-10 pages)
  - autres diagrammes (0-10 pp)
  - catalogue question / problemes: (3 pp)

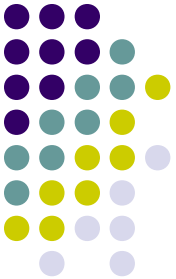
About: D2 : Conception

- In contrast to the Analyse D1,
  the design is oriented towards the
  chosen target technology (technologie cible)
- Roughly the same structure as a D1,
  but more detailed. UML diagrams + descriptions.
- It attempts to identify/making explicit
  - the implementing actors of the system
    (5 pp UML plus descr.)
    (describing for example, elements of the GUI,
    but also internal processes (servers, clocks, etc)
  - GUI Mockups (rough sketches with a drawing prog.)
  - class diagrams (both library and concrete implementation data, interfaces to COTS components)

About: D2 : Conception

- In contrast to the Analyse D1,
  the design is oriented towards the
  chosen target technology (technologie cible)
- ...
  - the possible use scenarios (30 pages scenarios)
    (scenarios with concrete data exchanges
    corresponding to the class diagram)
  - other diagrams (0-10 pp)
    (protocoles in collaborative diagrams,
    state-machines for the life-cycle of critical objects,...)
  - object diagrams for critical data . . .

About: D2 Conception: Algorithmic Core



- For Roomscheduling (only):
  - Possibility: Compiling a „Demande“ into a logical formula and use a constraint solver (Z3, https://github.com/Z3Prover/z3 CVC4 https://github.com/CVC4/CVC4, ...)
  - Possibility: Algorithmic exploration of „Demande“s vs. Ressources („Salles“) based on backtracking.
  - ...