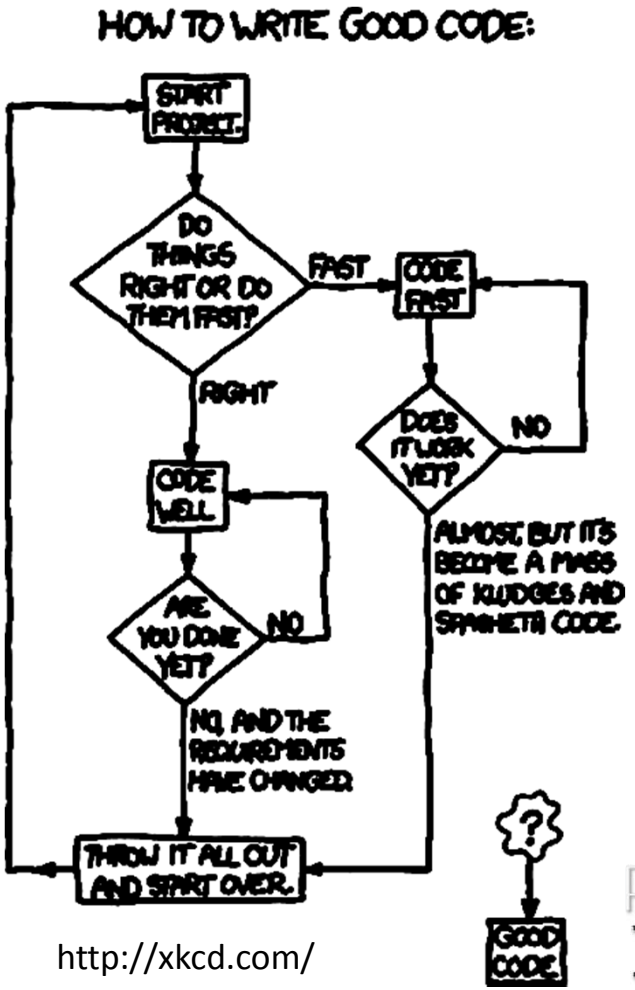
INFORMATIQUE

INTRODUCTION À L'ALGORITHMIQUE

PTSI – 2014 – 2015



http://xkcd.com/

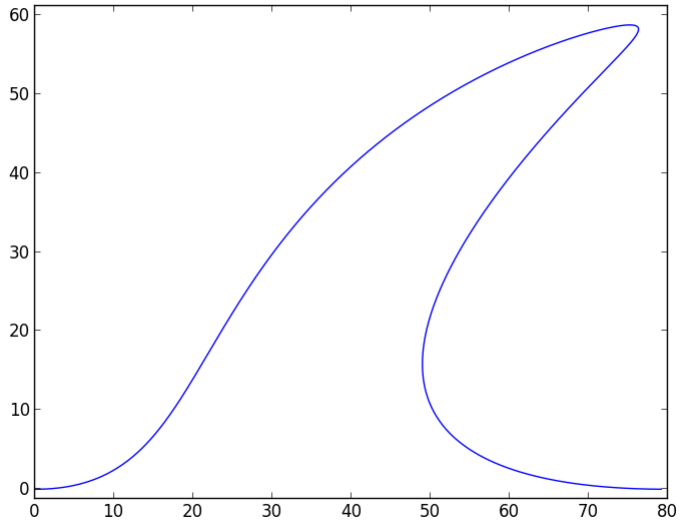
Xavier Pessoles - PTSI - Rouvière

INTRODUCTION

$$\forall u \in [0,1] \quad \begin{cases} x(u) = \sum_{i=0}^{n} B_i^n(u) x_i \\ y(u) = \sum_{i=0}^{n} B_i^n(u) y_i \end{cases}$$

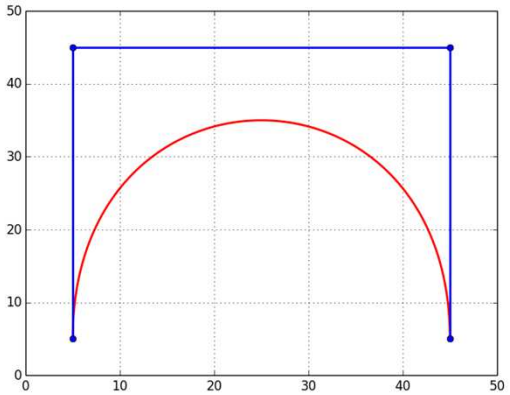
Avec

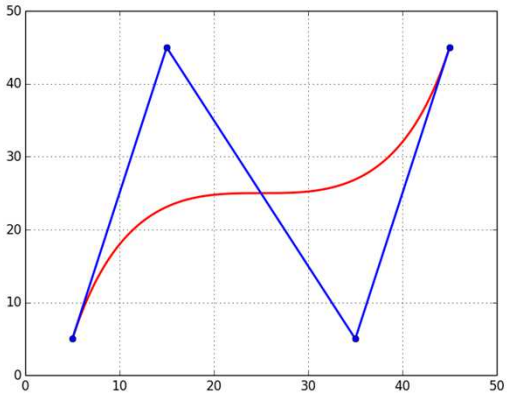
$$B_i^n(u) = \binom{n}{i} u^i (1-u)^{n-i} \quad \text{et} \quad \binom{n}{i} = \frac{n!}{i!(n-i)!}$$

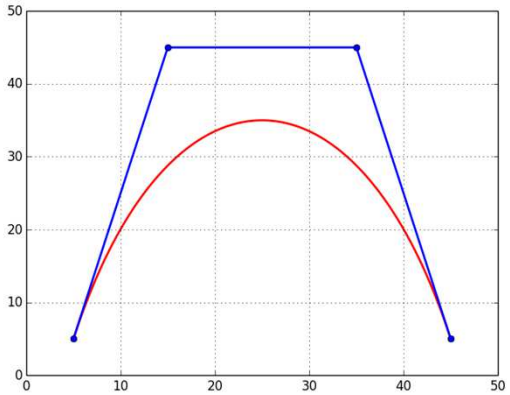


- Pour $n = 3$:
  - $\binom{3}{0} = 1$, $\binom{3}{1} = 3$, $\binom{3}{2} = 3$, $\binom{3}{3} = 1$
  - $\forall u \in [0,1]$
    - $x(u) = \binom{3}{0} u^0 (1-u)^3 \cdot x_0 + \binom{3}{1} u^1 (1-u)^2 \cdot x_1 + \binom{3}{2} u^2 (1-u)^1 \cdot x_2 + \binom{3}{0} u^3 (1-u)^0 \cdot x_3$
    - $x(u) = u \cdot (1-u)^3 \cdot x_0 + 3u(1-u)^2 \cdot x_1 + 3u^2(1-u) \cdot x_2 + u^3(1-u) \cdot x_3$

INTRODUCTION







- Courbes de Bézier de degré 3 – 4 pôles

Syntaxe Sémantique

Syntaxe
Définition de fonctions

Syntaxe
Import de fonctions

Instructions conditionnelles
Expressions booléennes

Instructions conditionnelles
Boucle Tant Que

Instructions conditionnelles
Instruction Si – Sinon

Instruction Itératives