

Introduction

2243.2 Génie logiciel



Définitions : logiciel

"En informatique, un logiciel est un ensemble de séquences d'instructions interprétables par une machine et d'un jeu de données nécessaires à ces opérations."

https://fr.wikipedia.org/wiki/Logiciel









Définitions : génie logiciel - 1

Artisanat

savoir-faire particulier, hors contexte industriel

Ingénierie

Théories, méthodes, technologies **reconnues** dans un contexte industriel

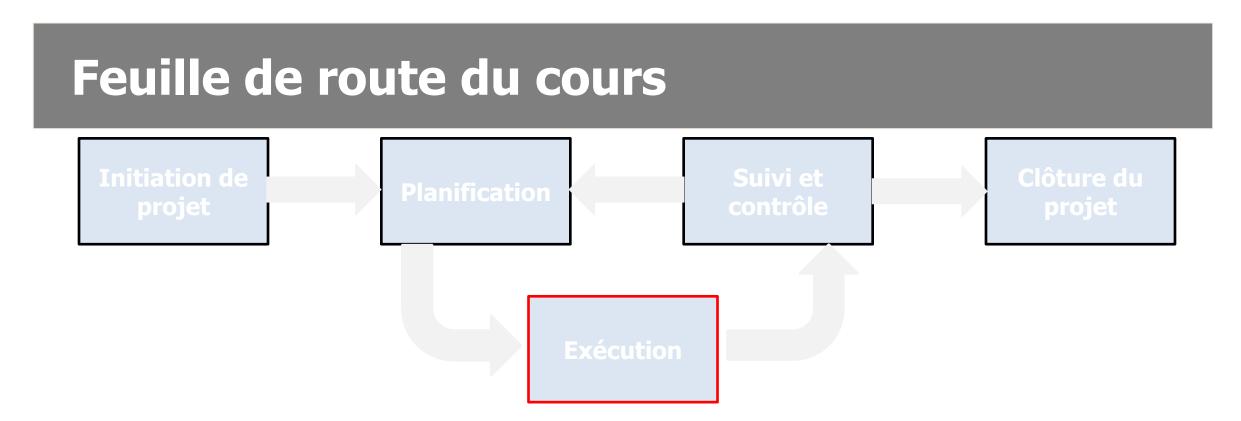


Définitions : génie logiciel - 2

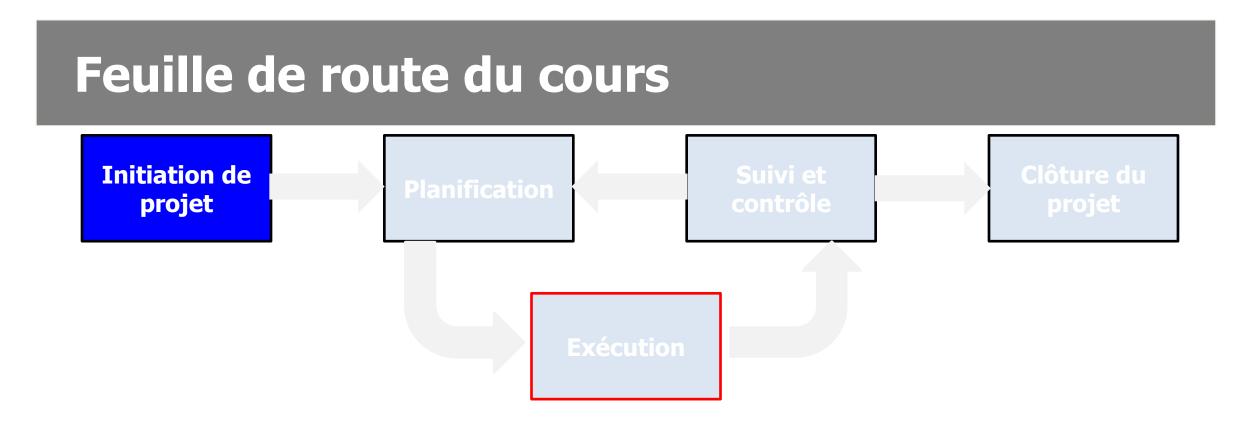
"Le génie logiciel, ou l'ingénierie logicielle, (en anglais : software engineering) est une science de génie industriel qui étudie les méthodes de travail et les bonnes pratiques des ingénieurs qui développent des logiciels."

https://fr.wikipedia.org/wiki/Génie logiciel



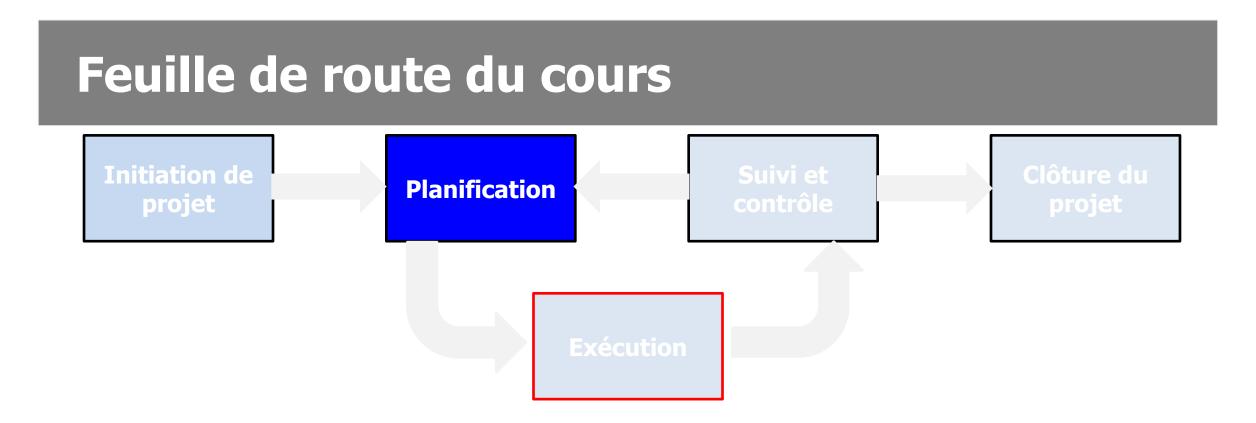






Activités, ressources, outils (IDE, support), normes, contrôles, planification de la gestion du projet





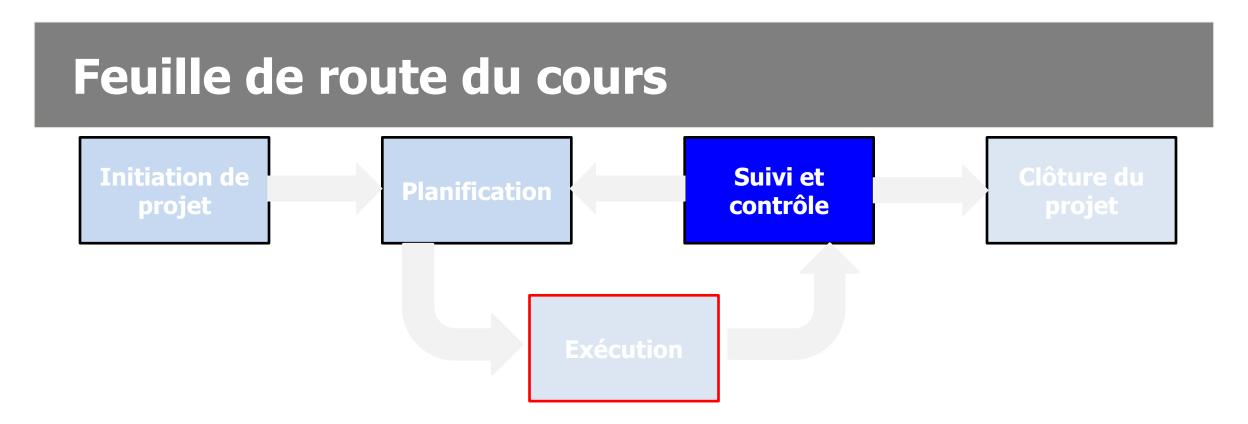
Découpage en sous-tâches, estimation du travail, durée, coûts, risques, etc

de Suisse occidentale



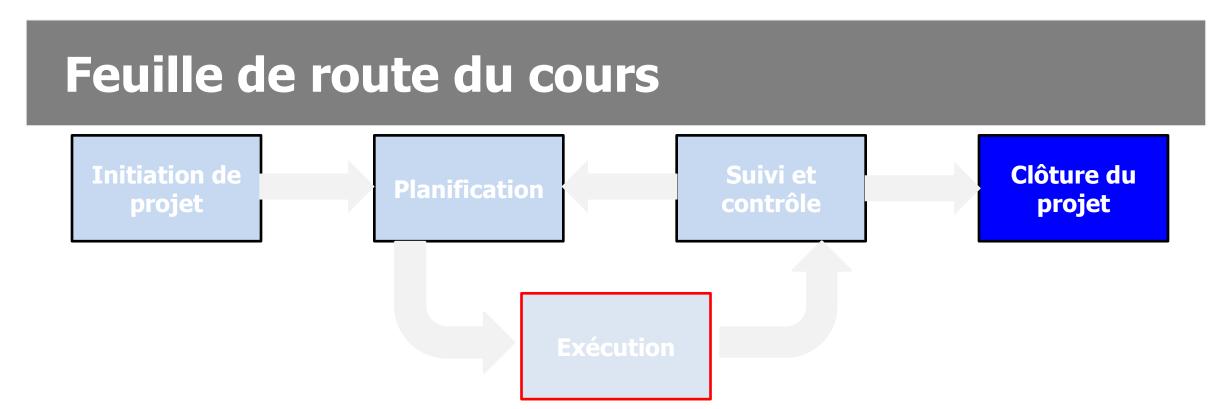
Feuille de route du cours **Initiation de Planification** projet **Exécution Analyse** Conception **Implémentation** Méthodologies de **Analyse et** Modèle structurel développement specification des et besoins **Modèle dynamique Tests** (UML) **Hes**·so





Avancement, délais, coûts, risques, ajustements



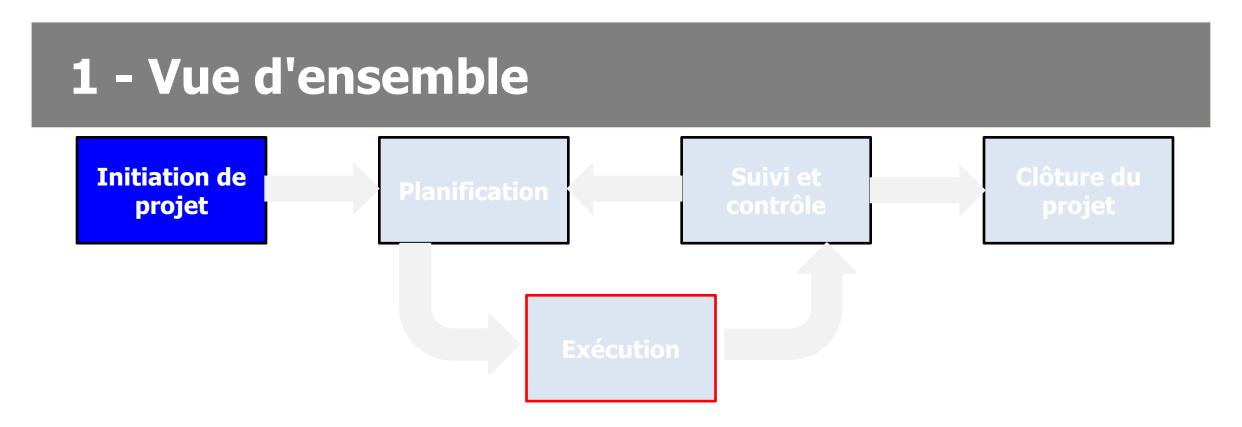




Introduction

Initiation de projet





Activités, ressources, outils (IDE, support), normes, contrôles, planification de la gestion du projet



2 - Phase initiale

Motivations derrière un projet

Améliorations ou obligation technique (obsolescence) Améliorations commerciales et procédurales

La situation idéale est une combinaison des deux aspects

Erreurs à éviter

Démarrer un projet pour suivre une mode Guider un projet par la technologie (!! Aux standards)



2 - Phase initiale

Identifier la valeur commerciale ajoutée

Etudier la faisabilité

technique économique organisationnelle



3 - Environnement technique

- 1. Choix des outils
- 2. Mise en place des outils
- 3. Mise à jour de outils



3 - Environnement technique: Gitlab





3 - Environnement technique: Gitlab

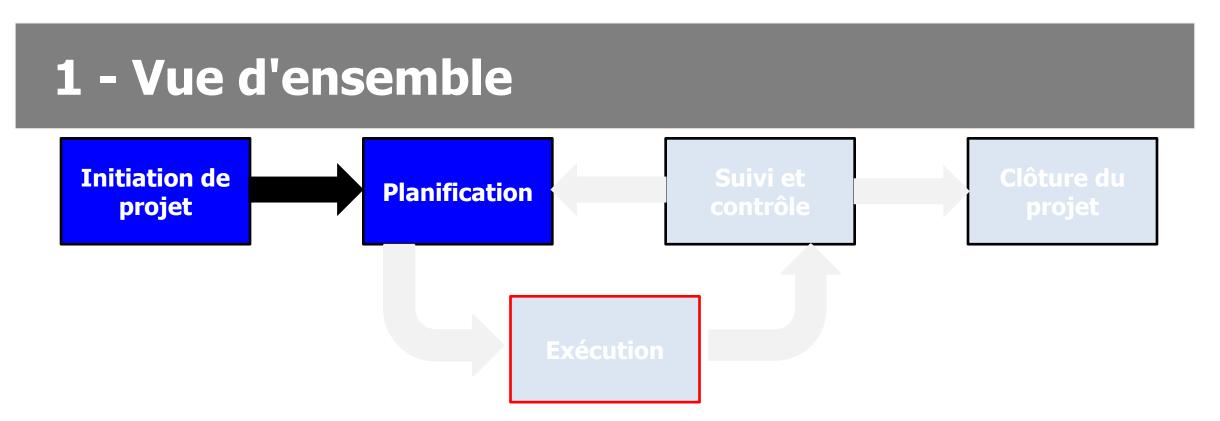
- 1. Gestion de projet à distance et collaborative
- 2. Documentation (Wiki)
- 3. Code versioning (Git)
- 4. Suivi de demandes (Issues : bugs, tâches, features...)
- 5. Planification & suivi (Agile: scrum, Kanban...)
- 6. ...



Introduction

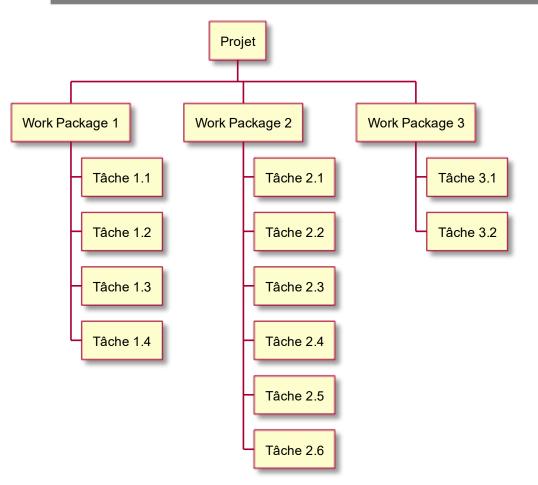
Planification







2 - Découpage Top-Down



WBS (Work Breakdown Structure) Liste hiérarchisée de tâches

4 principes

Règle des 100%

Pas de recouvrement (tâches indépendantes)

Décomposition par résultats, pas par action (livrables, sous-fonctions, constituants)

Implication des participants*



2 - Bonnes pratiques

La gestion de projet est la première tâche (WP0)

Une tâche pour les spécifications des besoins

Au moins une tâche pour la conception

Au moins une tâche pour le déploiement

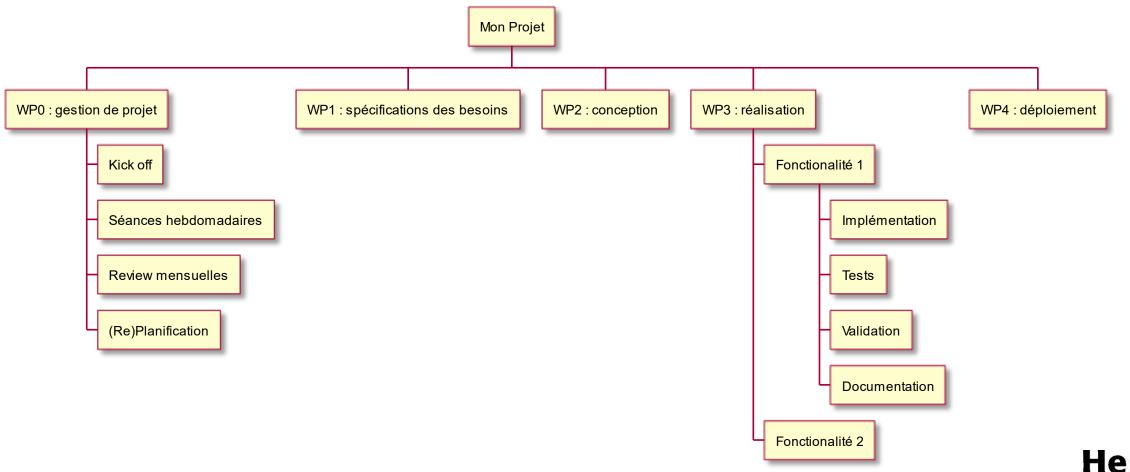
Au moins une tâche pour la documentation

Plusieurs tâches pour la réalisation (hardware, software, etc.)

Discuter de l'organigramme avec toute l'équipe!



2 – Exemple de découpage WBS





2 - Jusqu'où découper ?

Si on ne peut pas estimer la **charge** Si on n'a pas la vue d'ensemble des tâches et des étapes à réaliser => **découpage global / général**

Diviser pour régner



Projet simple

WBS	Task	Duration	Predecessors	Month 1	Month 2	Month 3
1	a	10.67 days		a		
2	b	12.17 days	1	b		
3	С	12.33 days	2		С	
4	d	6 days	2		d	
5	е	14.33 days	2		e	
6	f	9.33 days	3, 4			f
7	g	10.33 days	4		g	
8	h	7.83 days	5, 7			h



Projet simple avec chemin critique, connexions

	- 7				Š. – Š			2010	10.	32	Febr	uary	393	.00	M	arch	222	(2)
WBS	Task	Estimate dur	Start	Finish	Late start	Late finish	09	16	5	23	30	06	13	20	27	05	12	19
1	a	10.67 days	01/14	01/28	01/14	01/28] [ال	İ				i			
2	b	12.17 days	01/28	02/15	01/28	02/15							٦		ļ			
3	С	12.33 days	02/15	03/03	02/18	03/07							ţ			1		
4	d	6 days	02/15	02/23	02/15	02/23					İ		Ţ.					
5	е	14.33 days	02/15	03/07	02/17	03/09					I I		-			162	2 days	ン
6	f	9.33 days	03/03	03/16	03/07	03/20					İ				i			2.5
7	g	10.33 days	02/23	03/09	02/23	03/09					ļ						l	
8	h	7.83 days	03/09	03/20	03/09	03/20									i			
			Critica	ıl task			Task	(St	ack –				
2000	path and st	tack shown	NI .															



Confrontation : planification - état réel

			Da	ay Care I	nvestiga	tion						
Task Name		Actual Dur.	Baseline Dur.	Start	Finish	Baseline Start	Baseline Finish	04/02	04/30	05/28	06/25	07/23
Develop employee survey to assess need and desire			2 wks	04/21	05/04	04/21	05/04		100%			
Send survey out to staff			0 days	05/04	05/04	05/04	05/04					
B Develop ad campaign to get staff to participate in survey			1.67 wks	05/05	05/17	05/05	05/17	100 %				
4 Surveys return			11.67 wks	05/19	06/05	05/17	06/01					
Analyze results			1.27 wks	06/09	06/19	06/02	06/12				16 %	
Meet with YMCA to assess and verify proposal for service			3 wks	04/21	05/04	04/21	05/11	100 %				
Identify other centers in the area (usage, fee structure, etc.)			5.83 wks	04/21	06/01	04/21	06/01			100%		
Cost/Benefit analysis			7.5 days	06/19	06/28	06/12	06/21				□ 10%	
Go/No Go decision			1.07 wks	06/28	07/06	06/21	06/29				0%	
If Go – develop implementation action plan			3 wks	07/06	07/27	06/29	07/20					0%
start date: 04/21 current date: 10/04	Task Progress			40. 30	• 🔷	Mil	lestone 🔷					
	Develop employee survey to Send survey out to staff Develop ad campaign to get Surveys return Analyze results Meet with YMCA to assess an Identify other centers in the a Cost/Benefit analysis Go/No Go decision If Go – develop implementation start date: 04/21	Develop employee survey to assess need and desire Send survey out to staff Develop ad campaign to get staff to participate in survey Surveys return Analyze results Meet with YMCA to assess and verify proposal for service Identify other centers in the area (usage, fee structure, etc.) Cost/Benefit analysis Go/No Go decision If Go – develop implementation action plan	Develop employee survey to assess need and desire 2 wks Send survey out to staff 0 days Develop ad campaign to get staff to participate in survey 1.67 wks Surveys return 2.33 wks Analyze results 0.2 wks Meet with YMCA to assess and verify proposal for service 2 wks Identify other centers in the area (usage, fee structure, etc.) 5.83 wks Cost/Benefit analysis 0 days Go/No Go decision 0 wks If Go – develop implementation action plan 0 wks	Task Name Actual Dur. Baseline Dur. Develop employee survey to assess need and desire 2 wks 2 wks Send survey out to staff 0 days 0 days Develop ad campaign to get staff to participate in survey 1.67 wks 1.67 wks Surveys return 2.33 wks 11.67 wks Analyze results 0.2 wks 1.27 wks Meet with YMCA to assess and verify proposal for service 2 wks 3 wks Identify other centers in the area (usage, fee structure, etc.) 5.83 wks 5.83 wks Cost/Benefit analysis 0 days 7.5 days Go/No Go decision 0 wks 1.07 wks If Go – develop implementation action plan 0 wks 3 wks	Task Name Actual Dur. Baseline Dur. 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Durée estimée, chemin critique, jalons (milestones) et ressources

ID	Task Name	Predecessors	TE Duration	April 04/02 04/16	May 04/30 05/14 0	June 5/28 06/11 06/	July /25 07/09 07/2	August 23 08/06 08/3
1	Develop employee survey to assess need and desire		2 wks		Proj Mgr	l		
2	Send survey out to staff	1	0 days			i I		Í I
3	Develop ad campaign to get staff to participate in survey	1	1.67 wks		Mari	keting		j I
4	Surveys returned	2, 3	11.67 days)		ĺ
5	Analyze results	4	1.27 wks		i	Proj M	gr	j I
6	Meet with YMCA to assess and verify proposal service		3 wks		HR, Proj			j I
7	Identify other centers in the area (usage, fee structure, etc.)		5.83 wks			HR		Î I
8	Cost/Benefit analysis complete	6, 7, 5	7.5 days		i I	Fir	ance, Proj Mgr	
9	Go/No Go decision	8	1.07 wks		į		Exec Team	j I
10	If Go – develop implementation action plan	9	3 wks		į			ĺ
							HR, Project	Mgr, Marketi
40	Il path, slack, and resources sho	Critical task		Milestone	Slack -		lay .	



4 - Les différents types de risques

Risques **financiers** investissements, financement, *cash flow*

Risques **légaux** chgts de lois, IP, protection juridique, garantie,

Risques physiques catastrophes, décès, météo

Risques intangibles RH: relationnels, compétences, vie privée

Risques **techniques** infrastructure, logiciels, obsolescence, *time to market*

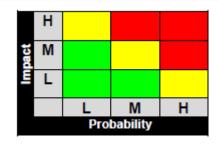
Risques de sécurité attaques informatiques, fiabilité, confidentialité



4 - Gestion des risques

Définition

Risque = Problème potentiel



Caractéristiques

Probabilité d'occurrence (P)

Impact (I)

Criticité (C)

$$C = P \cdot I$$

Il faut bien connaître les facteurs de risque qui mènent à ces échecs



7 Suivi de contrôle

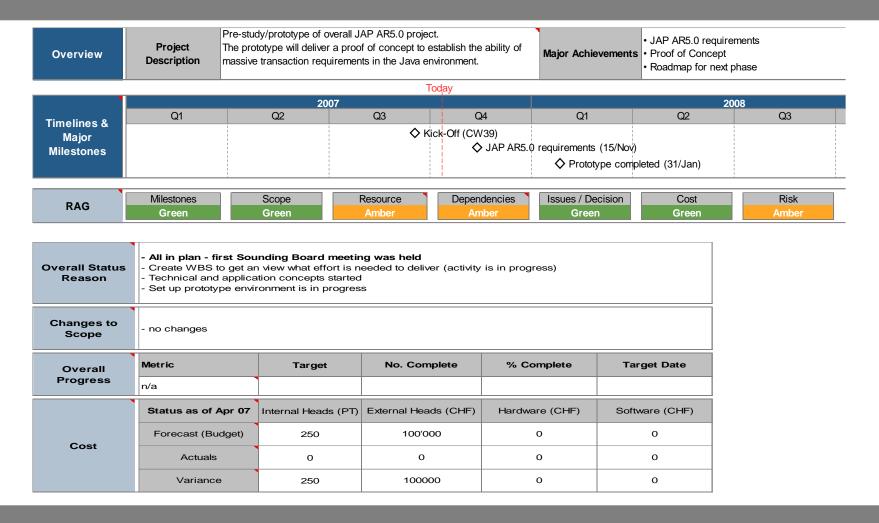
Relevé périodique du statut du projet selon les axes suivants:

- 1. Taux de complétion des tâches / paquets de travail
- 2. Respects de délais
- 3.Budget
- 4. Evolution des risques
- 5. Problèmes ouverts (issues)*
- 6. Disponibilité de ressources

Communication des rapports aux acteurs concernés



Exemple de rapport de suivi de projet

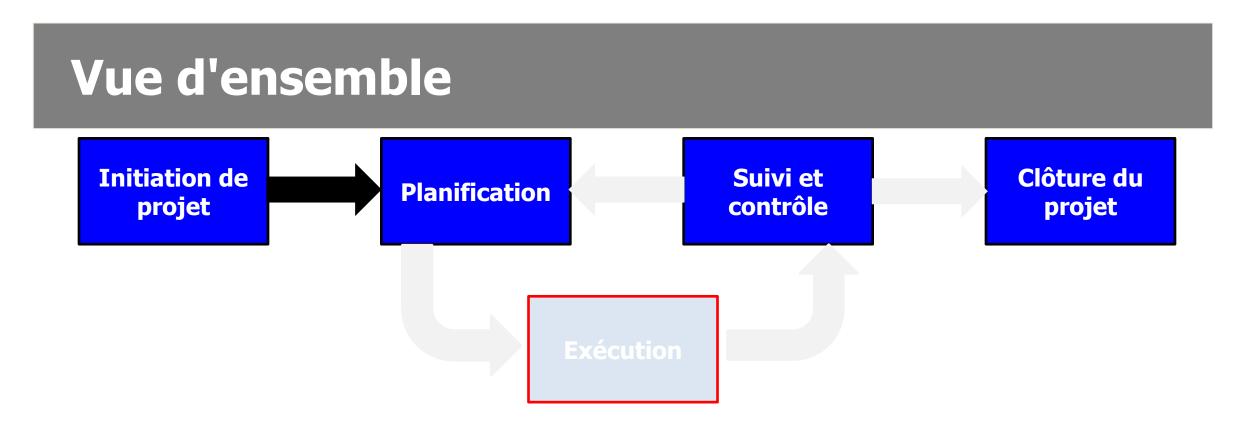




Introduction

Suivi & Contrôle Cloture



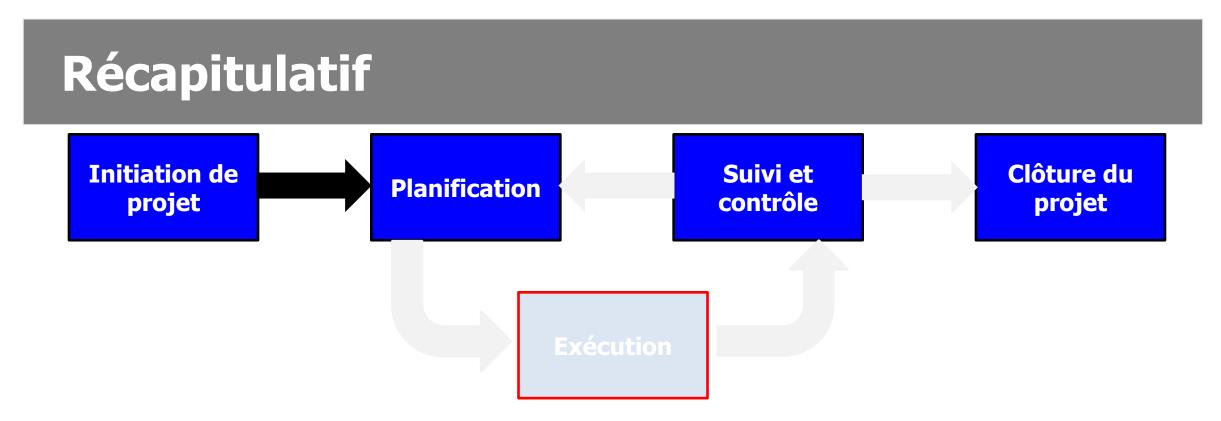




Rapport de clôture – Lessons learned -

Lessons Learned Content Detail											
Title	Туре	What actually happened	Why did it hap	Recommendation							
Project set up	+	The project set up: STC, Project Team, Stakeholders, was optimally carried out. All concerned parties and stakeholders are involved in a way or another (STC meetings, Requirement gathering,). Project approach and decisions are thus syndicated and agreed on before implemented	Project setup deeply analyzed	Involve major concerned parties in the right gremium so that they can optimally contrinbute to the project success							
Project appraoch	+	The project apprach allowd to involve RDO (final users) and MPT (support) early in the project lifecycle. Adoption is assured during the project and the handover was optimally prepared	Project approach well designed	Involve final users early in the project lifecycle and manage adoption as integral part (stream) of the project scope.							
Project team	+	Project team members showed very complementary skills (Platform engineering, Requirement engineering; system design,). Inter-personal relationships worked perfectly	Project skills needs are well understood Good matching between project needs and team	Identify the skills needed by the project Select profiles responding to those skills Team "chemistry" is an important aspect to consider							





Les phases Planification, exécution et suivi sont effectuées en cycle autant de fois que necessaire durant le projet.



Exercice: Demande de projet

Écrire une demande de projet pour votre projet P2