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THEME:

**“THE FRAMEWORK Yii2 AS DEVELOPMENT TOOL FOR
ENTERPRISE WEB APPLICATIONS”**

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The framework yii2 as development tool for enterprise web applications

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Resumen.

Yii 2 incorporates technologies in Web programming languages, has a structure with two templates depending on the characteristics of the project, work-based modules and extensions and has easy setup in development and production environments. Previous: A web application allows an implementation and centralized development. With the use of the internet people and organizations can maintain connectivity and work on a private network without investing in telecommunications infrastructure costs. Objective: Check the effectiveness of the Yii2 framework to develop the phase two of the child nutritional system (Sinuti). Method: The phase two of sinuti, was developed which includes enhancements that let you add an advanced user management through the rbac, the creation of the module to manage recipes and the module that allows you to keep track of blogs for each infant in each cibv. Results: According to the above is obtained an efficient management of users with different user roles for the Cibv of the city of Ibarra, automates the processes for: the recipe management and registration of weblogs of infant consumption. Conclusions: It is concluded that Yii2 if it supports the development business web systems, since Sinuti has characteristics of a web application business and currently is running.

Key Words

Yii2, Child nutrition system, Sinuti, Rbac, Nutrition

1. Introduction

Enterprise applications must possess a large amount of data that is persistent, moreover, that such information is concurrent access ensuring the user only to see the required information, also needs a lot of interfaces for the proper management of the application as well as a complex business logic that involves several processes (Trellini, 2016). This is the case of Sinuti, which will be available for the city of Ibarra where they work with data belonging to all

the children and staff of the human resources of the 27 Cibv which are in charge of the Gad-Ibarra (Mejía, 2016). The main task of the software is to automate the manual processes and to activate the decision making of the authorities.

So that a system meets be business must have a general structure that is flexible and extensible, in where can show clearly the parties and relations of the software with its different components with the environment.

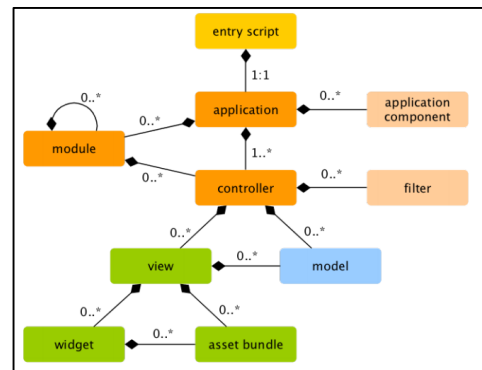


Figure 1: Structure of Yii 2 framework. Source: (Chamorro, 2016)

It's so presents a study on architecture and life cycle of the framework, where the modularity of the system is shown.

Yii 2 is made with the model-view - controller architectural pattern MVCⁱ and with the object oriented programming paradigm POOⁱⁱ.

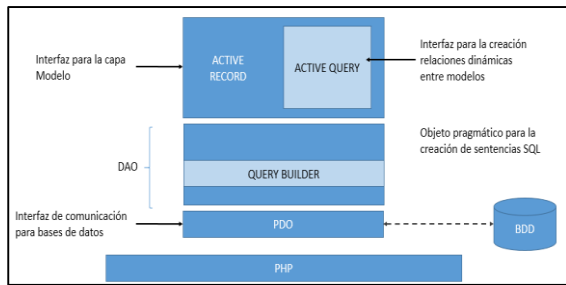


Figure 2: Layers which compose the model in MVC 2 Yii. Source: (Chamorro, 2016)

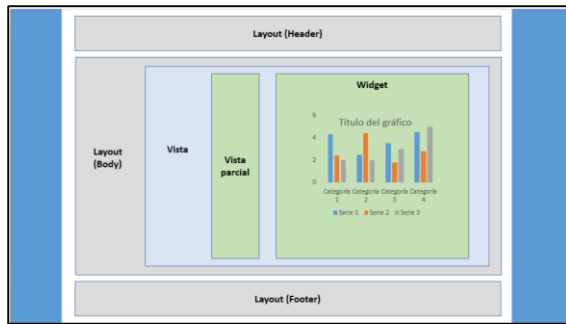


Figure 3: Structure of the views in MVC in Yii2. Source: (Chamorro, 2016)

Also, it is of easy configuration in the different ones in environments like a development and a production. Also two presents templates that allow to structure the framework in basic and advanced applications (Chamorro, 2016).

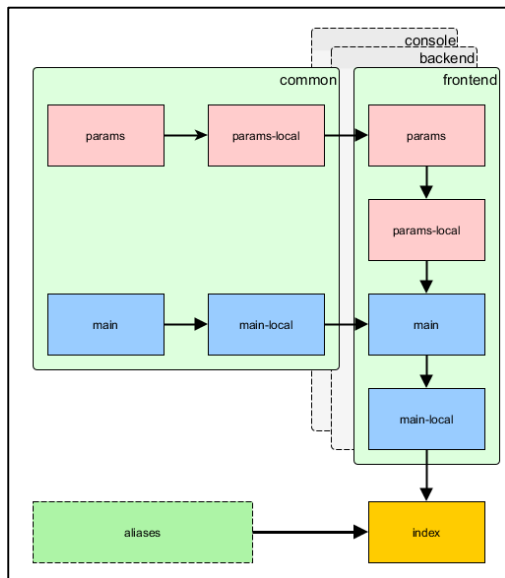


Figure 4: Structure of Yii 2 with Advanced Template settings. Source: (Chamorro, 2016)

It is so to check the theory is applied the scientific method on the system nutrimental child (Sinuti). This does not have the characteristics necessary for the optimal management of user roles or the ability to add new recipes or preparations of the locality for their respective control nutrimental.

2. Materials and Methods

Nutrient system child phase one developed with the Yii2 advanced template, this phase does not have an authentication system appropriate for the proper functioning of the project and the user interface for the backendⁱⁱⁱ and frontend^{iv} they are not focused towards end customers. In addition within the area of nutrition, cannot generate or incorporate recipes native, only uses the that are predefined in the database and you do not have a daily record by Infante of the consumptions foodstuff (Chamorro, 2016).

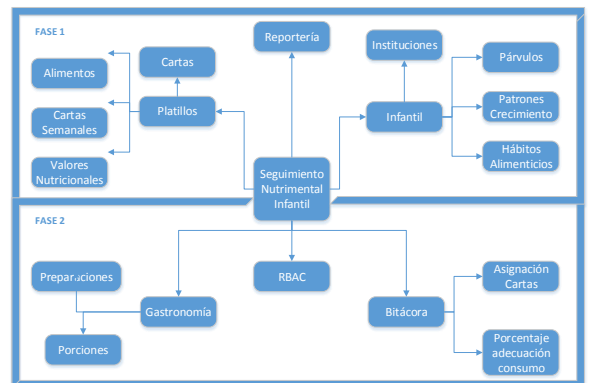


Figure 5: Module Sinuti. Source: (Chamorro, 2016)

It is so two of Sinuti developed the phase with the framework Yii 2 what it allowed the infantile centers: to generate a consumption binnacle for every infante, to add remarks of food reactions and the percentage of the feeding that the infante consumed. With this information the authorities may take the necessary measures to improve the nutrition of childs. Access control based on roles (RBAC) to be able to control and monitor user's activities perform on the platform were also added, as well as the preparation of recipes in order to be able to add dishes typical of the locality nutritional procedures that the system performs.

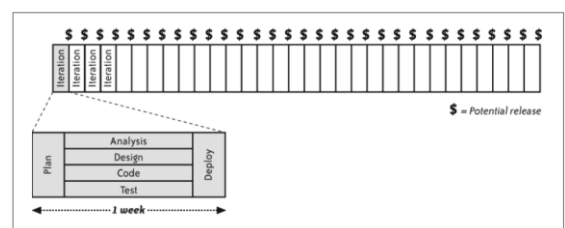


Figure 6: XP development methodology. Source: (Tangent-LLC, 2016)

For the development of phase two was used the development methodology XP. In the analysis phase of the methodology, the requirements were conceptualized through stories of user is obtained the following information:

The module of gastronomy, which was taken as part of Component 3 of the technical standard of integrated child development and allows you to control the recipes of the town which will be incorporated into weekly schedules of food and thus be able to give a real monitoring of what they consume childs in the Cibv.

The module Rbac which was done according to the component 4 of the technical standard of integrated child development in which describes a set of standards describes the composition and functions of the team of human talent that works in the Cibv.

Consumption log module was developed according to the user instructions technical health which indicated that the Cibv should monitor food wastage and that you should take notes on what is real infant consumption since eating habits or pathologies they don't consume entirely the Cibv meal.

(Chamorro, 2016)

HISTORIA DE USUARIO			
1. Numero de historia:	1	2. Usuario:	Lic. Juan Felipe Bixby
3. Nombre de la historia:	Gestión de recetas (Módulo Gastronomía)	4. Riesgo:	Exceso de información para procesar sobre las porciones infantiles para cada ingrediente.
5. Prioridad (alta, media, baja):	Media	6. Punto Estimado:	
7. Iteración Asignada:	1	8. Fecha:	23/11/2015
9. Programador Responsable:	Mauricio Chamorro		
10. Descripción			
El Lic. Bixby procedió a indicar la diferencia entre recetas y menús, indicando que para las recetas se los debería de realizar a través de una lista de ingredientes con medidas en gramos, sean estos líquidos, semi-sólidos o sólidos. Se indicó que el procedimiento para la generación de recetas debería de ser similar como la generación de menús en cuanto a su presentación.			
11. Observaciones			
Se entregó un documento en Excel para que el Lic. Bixby entregase porciones cuantificadas en gramos y medidas caceras para infantes de todos los alimentos con los cuales el sistema trabaja.			

Figure 7: Example of history of user module for gastronomy. Source: (Chamorro, 2016)

After the analysis, the design phase included use of UML^v and artifacts such as use cases and process diagrams

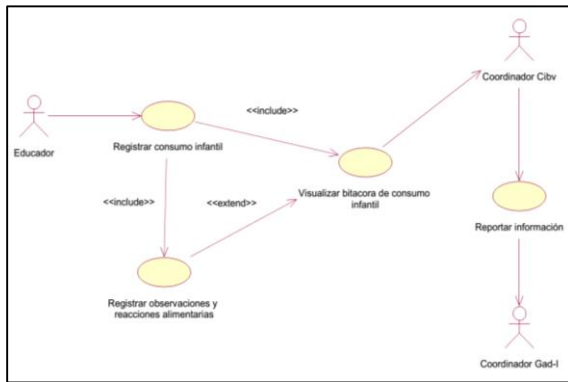


Figure 8: Use case for the log module consumption. Source: (Chamorro, 2016)

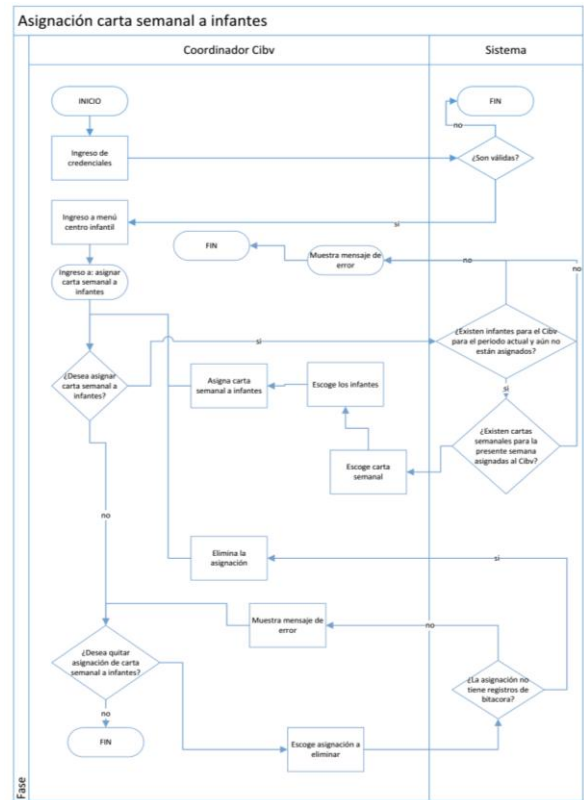


Figure 9: Process diagram for the log module. Source: (Chamorro, 2016)

The coding phase allowed to inform the customer the iterations for the encoding of the user stories.

Módulos	Nro.	Historia de usuario	Fechas estimadas		Esfuerzo en desarrollo		Iteraciones			Entregas			
			Inicio	Fin	Días	Horas	1	2	3	1	2	3	
Gastronomía	1	Gestión de platillos (Módulo Gastronomía)	23/11/2015	24/11/2015	2	16	x				x		
	2	Nuevo sistema de categorización para las porciones infantiles (Módulo Gastronomía)	25/11/2015	18/12/2015	18	144	x					x	
RBAC	1	Planificación Módulo RBAC	21/12/2015	25/01/2016	22	176		x					x
Bitácora	1	Planificación módulo bitácora	26/01/2016	28/01/2016	2	16			x				x
	2	Procedimiento para porcentaje de adecuación (Módulo Bitácora)	01/02/2016	25/02/2016	19	152			x				x

Figure 10: Plan of deliveries of Sinuti phase 2. Source: (Chamorro, 2016)

According to XP each iteration will have a deliverable where the customer will be able to interact with the system and if there is any drawback subsequently corrected for this must be to carry out the relevant documentation, is thus used the acceptance tests.

Prueba de aceptación			
Caso de prueba	Gestión receta	Rol de usuario	Gastrónomo
Nro. de caso de prueba	3	Nro. De historia de usuario	1
Descripción	Eliminar receta		
Condiciones de ejecución	<ul style="list-style-type: none"> El usuario deberá tener permiso para realizar esta acción no tiene que estar asignado a un menú 		
Datos de entrada	Ninguno		
Pasos de ejecución	1. Seleccionar receta 2. Eliminar		
Resultado esperado	Seleccionar receta		SI
	Eliminar receta		Si
	Validación de registro en uso		SI
Evaluación	Satisfactorio		

Figure 11: Acceptance test to the management of recipes.
Source: (Chamorro, 2016)

3. Results

The XP methodology could apply in all its phases since Yii 2 framework allows a rapid, orderly and extensible development.

As a result of this you get a web platform that works with web services for the management of messaging on a large scale, the module of Rbac allows you to govern the activities of users through the roles: institutional coordinator, coordinator GAD, gourmet, nutritionist, educator, managers to 21 Cibv that arises in phase one of Sinuti (Mejía, 2016). It is possible to incorporate recipes of the locality to the system and subsequently indicate these in the weekly schedules of power which allowed it to carry out a control more real on infant feeding in the Cibv. And with the development of the log module consumption, it is now possible to have nutritional indicators of food for each day of the consumption of each child, which helps in large part to the nutritionist to take decisions on the health of the child.

4. Conclusions

Yii 2 lets you build enterprise Web applications since meets the structural and technological requirements needed for Sinuti to function properly.

Yii 2 is highly extensible and flexible since without major problems or debts it was possible to apply the second phase to Sinuti.

With food consumption log module, it is possible to obtain indicators that allow to know accurately food routines, habits and customs that child are in your area. This will allow to refine the medical diagnostics to improve the power supply in this population health.

Gratitude

I am grateful to the Technical University of the North that opened its doors to realize my higher education, to my director of Thesis the Ing. Cathy Guevara for its valuable help in the achievement of this work, to the Lic. Felipe Bixby, to the Dra. Romelia Goyes and to the Dra. Susana Castillo Lara for contributing with its knowledge and power

like that to reach with quality standards the present work, to the Dra. I spray Olive tree who opened the doors of its institution to be able to develop the project and to the Ing. Sofía Mejía with whom the platform Sinuti developed in its entirety.

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About Author...

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ⁱ MVC: Model View Controller, is a pattern of architecture that separates data, business logic and user interface. Source: (Yii Suporters, 2015).

ⁱⁱ POO: Object-oriented programming. Source: (Yii Software LLC, 2015).

ⁱⁱⁱ Backend: Environment for the administration of the system. Source: (Yii-Suporters, 2016).

^{iv} Frontend: Environment intended for the use of end-customers

^v UML: is an international standard to create schematics, diagrams, and documentation of software development. Source: (Caro, 2016).