Ермолаева Мария М05-916в

**Rus-Eng 4**

**Object-oriented Approach To Organization Information Portal Design**

***Information portal of organization*** (IPO) is a information system pro- viding the organization staff by appropriate information about its operation and deliviering the spectrum of services.

For the information portal implementation is necessary to perform its design in order to identify main sections, user groups and functions which the each of the selected groups would posses. For the information systems (IS) design two basic approaches are applied: *structural* and *object-oriented*.

***Object-oriented approach*** to IPO design is based on the consideration of the system as set of objects appropriate for the real world ones and interacting with each other by messages beam: in the object are defined attributes and be- havior and the relationships between the objects are composition and inheritance. The system under structural approach to the design is split into procedures and functions and constitutes an hierarchical model of interconnected functions. The data under this approach is stored separately from the functions.

The use of object-oriented approach to IPO design is conditioned by such criteria as:

—the system which was built using objects is match the meaningful essence of subject domain;

—object behavior is displayed using the methods of class while under structural approach the behavior is described separately;

—use of encapsulation as well as object (class) attribute and method merge allows to achieve lower external connection between the objects of system;

—simple implementation of parallel computations since any object possesses its own characteristics values and behavior;

—CASE tools use by system design allows to simplify the system development process by code generation on the basis of UML models was built.

Let us look the object-oriented approach use to IPO design on the example of «Children summer vacation system design». Let us describe the system in the visual modeling language UML by which we build conceptual, logic and functional system model.

*Conceptual model* is built to selection the object set and connections between it defining the meaning structure and could be represented as *use case diagram*. The main objects of the model are «Actors» — the system user groups and «Use cases» — the functions implemented by the «Actors» (Figure. 1).

For the elemental observation of system aspect let us built the class diagram which is for static system model representation in terms of object-oriented pro- gramming classes. Class diagram could display different interconnections between separate subject area essences: objects and subsystems as well as describe its inner structure and relation types.

Class diagram represents a graph with the elements of «classifier» type as vertices which are linked by different structural relation types and also could contain interfaces, bundles, relationships and even individual exemplars such as objects and connections. On the basis of class diagram the code for the further implementation of system functions generates.

For the logic model construction let us build sequence diagram which allows to describe interactions of subject domain objects and show processes execution sequence. Sequence diagram is necessary to the designation of following one after the other sequence of incentives (messages) by which objects interact with each other. It displays the dynamics of program operation.

*Functional model* of system is built as activity diagram is necessary to detail study of processes in dynamics. The main objects of this model are:

—activity states which are atomic and display system condition at particular time;

—transitions that show threads on the diagram in which result the system data changes.

Besides on activity diagram the objects are present: «Branching» — for the different process execution ways description, «Split and merge» — for the parallel threads in system displaying.

All of the above models are main features of object-oriented approach to sys- tem design. It allows to highlight the main system users; available for selected user groups functions; static system model structure; observe processes of system in dynamics.

Thus the object-oriented approach to organization information portal design use allows to represent all diagrams on the visual modeling language that are simply translated on the program language by which the information system is implemented.