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Analysis and design student entrepreneurship information system

S Mukaromah[1], A Pratama[2], S A Ithriah[3], and A B Putra[4]
[1,2,3,4] Dept. of Information System, Faculty of Computer Science
Universitas Pembangunan Nasional "Veteran" Jawa Timur
Surabaya, Indonesia
[1] sitimukaromah.si@upnjatim.ac.id

Abstract. Entrepreneurship Course is a compulsory subject that must be accepted by all students of University of Pembangunan Nasional "Veteran" Jawa Timur. This is done with the goal that students have the spirit of entrepreneurship. For this reason, in order for entrepreneurship to continue until students graduate, a Student Entrepreneurship Information System is created or it is called Sistem Informasi Kewirausahaan Mahasiswa (Sirama) in Indonesia. In the following article we will discuss about the proposed system design as a place for entrepreneurship for students and alumni. The analysis design that will be discussed is System Flow, Data Flow Diagrams (DFD), and Conceptual Data Model (CDM) and Physical Data Model (PDM) which are generated from CDM. The conclusion of this article is the system design for developing programs using web applications.
Keywords: analysis, entrepreneurship, sirama, upn

1. Introduction

University of Pembangunan Nasional "Veteran" Jawa Timur (UPN “Veteran” Jatim) is a state university which has the character of a “bela negara” (state defense) campus. UPN "Veteran" Jatim is located in the city of Surabaya, East Java, Indonesia. UPN "Veteran" Jatim which is an institution engaged in the field of education, is expected to produce a generation that is superior and has the character of defending the country. Other than that, in order to become excellent graduates, students are expected to have an entrepreneurial spirit.

There are so many national defense values that can be applied to subjects, one of the subjects expected to produce entrepreneurship graduates is entrepreneurship courses. In entrepreneurship courses students are required to be able to learn about entrepreneurship, so that in the future after graduating students can create new business ideas. However, this is constrained by time, because entrepreneurship is a lecture, so the time limit of students studying entrepreneurship is only for one semester or about six months. After that students have no demands to learn entrepreneurship. So that the spirit of student entrepreneurship is not honed well. In addition, there is also a lack of a place to accommodate the results of products or services that students have done during college.

Therefore, a forum is proposed to accommodate the results of products or services produced by students so that they can continue until the students graduate. To deal with these problems a web-based UPN "Veteran" Jatim Student Entrepreneurship Information System (SIRAMA) was created.

Why IT is suggested as a solution, because the application of IT help companies to help some problems, the use of IT has been able to provide business strategic decisions support. [1] As well as the development of Information Technology (IT) has been mainly discussed nowadays, from the top to the lowest level of society. [2]

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In this study discusses the SIRAMA system design. The necessity of making a system design before developing an application is to understand the needs or requirements of the company and to document these requirements with certain specifications. System design is a bridge that brings us to the solution of the Governing Terms. The research question in this research is how to design a SIRAMA application system

2. Method

System Development Life Cycle (SDLC) is implemented to complete the project and produce targeted output. SDLC itself is a whole process of developing, working, using, and updating an information system. [3, 4, 5]. These are the details of activities that occur at each stage of SDLC: (1) Project Planning; (2) Analysis; (3) Design; (4) Implementation; (5) Activities.

Besides the SDLC approach in the development of information systems, there is also an object oriented approach, which sees information systems as a collection of interacting objects, which work together to produce a work task. System design using object oriented generally uses Unified Modelling Language (UML) [6, 7, 8, 9, 10], but as technology develops it can also use iconix. Iconix Process is a guideline process in that it describes a series of specific steps that found work really well on many different projects. [11, 12, 13, 14]. In this article the system design that will be discussed is the flowchart system, data flow diagrams, and conceptual data models that will be generated into physical data models.

2.1. System Flow Chart

A system flowchart is a graphical representation of the physical relationships between key elements of a system. These elements can include organizational departments, activity manuals, computer programs, hard copy accounting records, and digital records. The system flow chart also explains the types of computer media used in the system, such as magnetic tapes, magnetic plates, and terminals. [5, 15]

2.2. Data Flow Diagram

Data Flow Diagrams (DFD) illustrate the overview of system inputs, processes and outputs. A DFD drawing is a series of layered diagrams that can be used to represent and analyze detailed procedures in the system. [4, 16, 17, 18, 19]. In DFD only uses four symbols, i.e. Entity, Data Flow, Process, and data store.

2.3. Conceptual Data Model

Conceptual Data Model (CDM) represents the logical structure of the entire data application, not depending on software or data structure model considerations. CDM can be converted to PDM or OOM. CDM in its application can be equated with ERD whose function is indeed the same, represent modeling the logical structure of the database. CDM is used to describe in detail the database structure in logical form. CDM consists of objects that are not implemented directly into the actual database. [20]

2.4. Physical Data Model

Physical Data Model or commonly called PDM is a physical representation of the database that will be created by considering the DBMS that will be used. PDM can be generated from CDM. PDM in its application can be equated with a Relation Scheme whose function is to model the physical structure of a database. PDM shows the data storage structure in the actual database used. [20]

3. Result and Discussion

In the results and discussion below will explains the results of the analysis and design of the system will be build, the discussion in this chapter consists of the analysis of system flow chart, data flow diagram, those are describe how input to be processes and what kind of output resulted from the systems. It is also explain the database design and design of the Analysis and design student entrepreneurship information system.

3.1. System Flow Chart

In this system flow chart describe the flow of system will be developed. There are three entities would be involved, customer, seller, and administrator. Customer is a person who can see or buy the product that show on display. Customer could be anyone who visit the web site. Seller is a college student or alumnus of UPN "Veteran" Jatim who have the product that show on display. Before being a seller it default to be customer, but then they can register as a seller with terms and conditions. The terms and conditions is they are: first as customer they have request to be a seller to administrator by fill form request to be a seller, next step is give attachment to show that they are valid college student or alumnus of UPN "Veteran" Jatim. The attachment is student ID (KTM) and Bachelor's Certificates to alumnus. The last entity is an administrator who administer Student Entrepreneurship Information System web site. The full flow of the system is can be seen at Figure 1.

3.2. Data Flow Diagram

The DFD of Student Entrepreneurship Information System is start from Context Level as a highest level to Level 1 as the lowest level. The context level can be seen at Figure 2 that describe the overall system. The next level is diagram 0 as seen at Figure 3. It show processes and data store in general. The next level is level 1, there are 2 processes be generated to level 1, process 'seller registration' and process 'trade'.

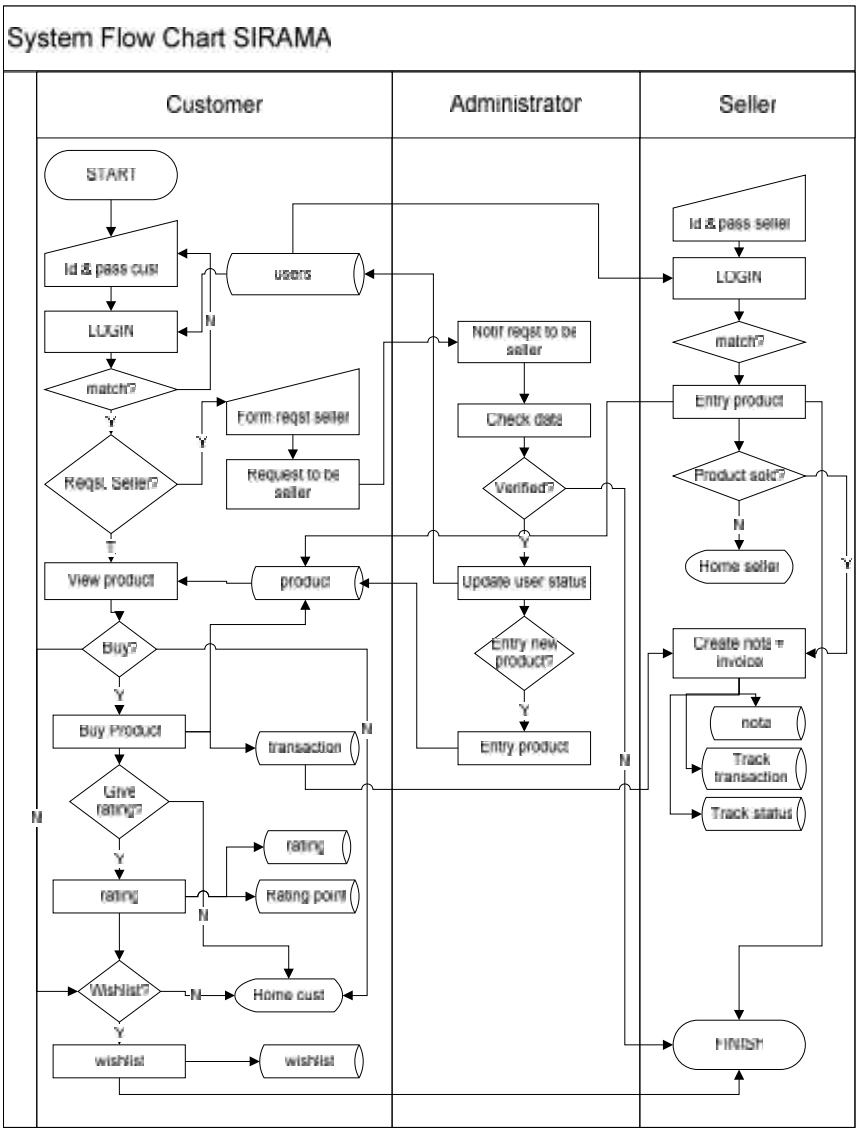

Figure 1. System Flow Chart of Student Entrepreneurship Information System

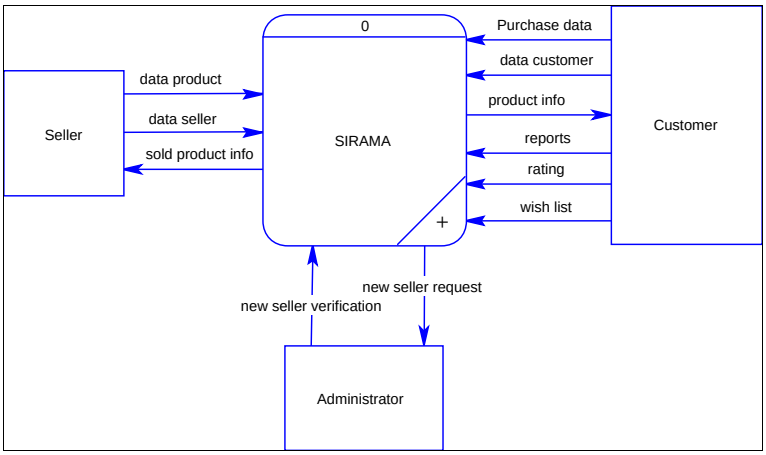

Figure 2. DFD Context Level of Student Entrepreneurship Information System

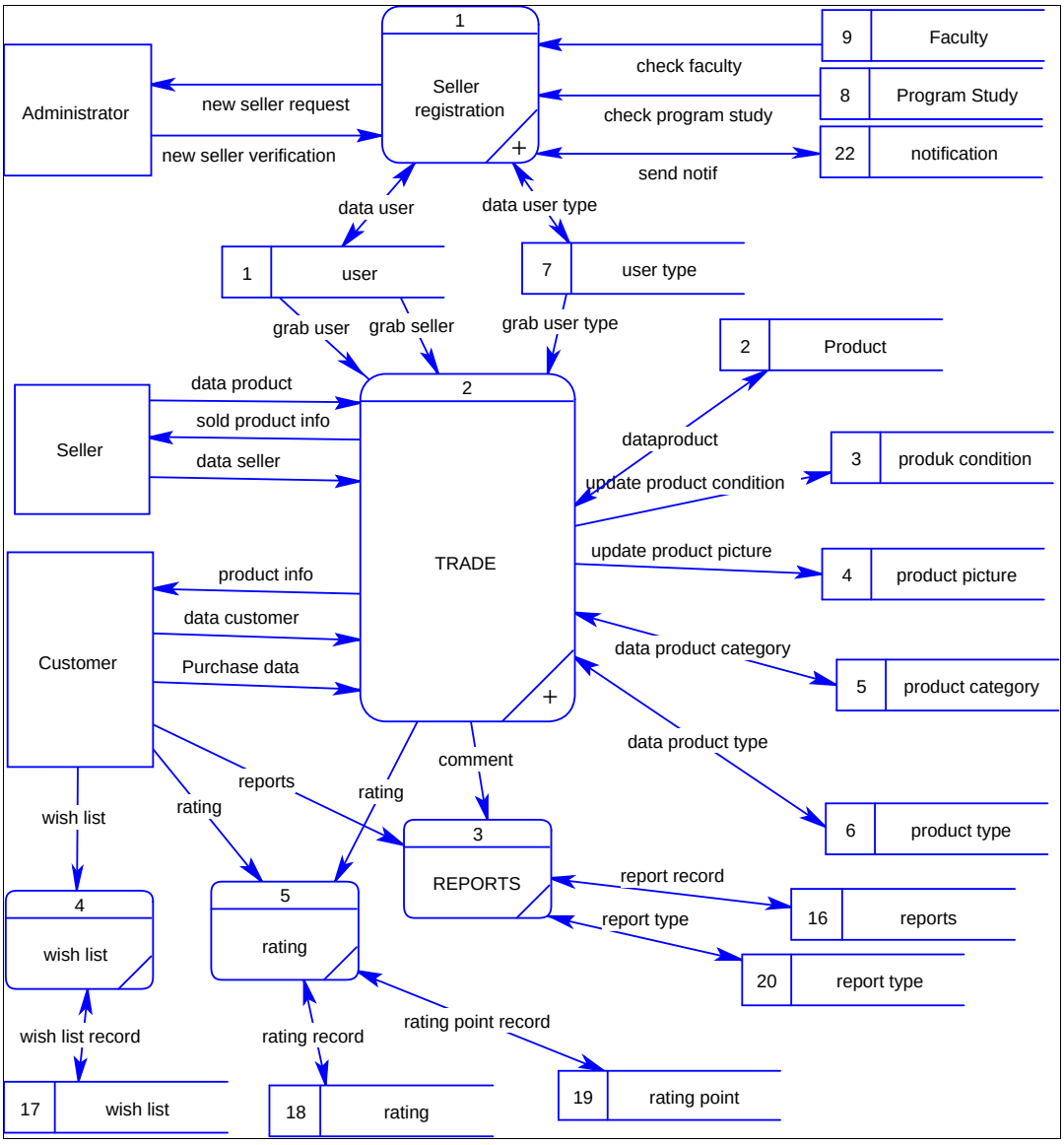

Figure 3. DFD Level 0 of Student Entrepreneurship Information System

3.3. Conceptual Data Model

CDM is used to describe in detail the structure of the database in logical form, and still in the form of design, can be seen in the figure 4.

3.4. Physical Data Model

PDM is a representation of database details in physical form. The representation of the PDM design shows the correct data storage structure in the database that is actually used. It can be generated from CDM (ctrl+g). PDM is not represent at this article, in order to limit the pages of this article.

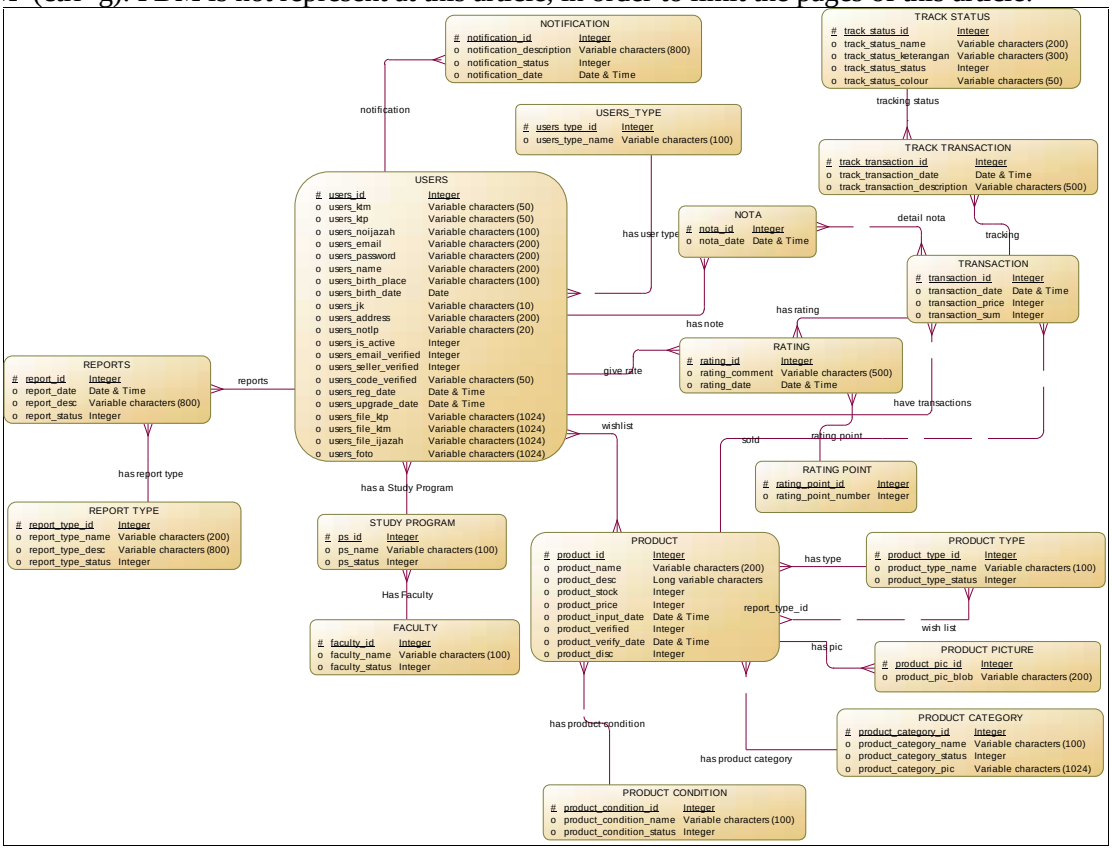

Figure 4. CDM of Student Entrepreneurship Information System

4. Conclusion

The conclusion of this study is that the analysis and design with structured design has been completed. Start from system flow analysis, creating data flow diagram (input, process, outputs) until database design, those are can be the answer of this article research question that is how to design a SIRAMA application system.

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