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Title: WEB-BASED SEAMAN MANNING ETHIOPIAN SHIPPING LINES

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Abstract: The purpose of this Project was to solve practical problems of Seaman Manning Department of the Ethiopian Shipping Lines Company by developing user friendly software database which is web-based seaman system. In the Company, there was difficulty in accessing easily pieces of information on its seaman in the vessels. To this end, the Project generally made the ESL services more satisfactory to seaman than the previous times which, in turn to its customers. Specifically, the research-based Project also aimed at (a) assessing and analyzing the existing system to investigate and to identify the problems with the ESL; (b) observing the benefits of implementing webbased seaman manning system in the ESL; (c) developing software to process the activities of recording seaman data; (d) eliminating the burden of paper usage as much as possible in the Company; (e) simplifying searching for documents; and (f) providing reliable, timely and accurate information about the seaman corresponding body (such as Manning Office for Administration HRM report). Data were collected using interviews using interview guide, survey using standard questionnaire and direct observation using observation checklist methods. The team members used Object Oriented System Analysis and Design (OOSAD) technique and the tools, such as the Argo UML, Microsoft Project, Microsoft Project and Microsoft Office. In the process of finding problems of the existing system, the team used PIECE (Performance, Information, Economics, Control, Services). Practices, like passport book issuance, seaman book issuance, medical certificate validation, vaccination card issuance, coordinating visa issuance activities and seaman reporting should be preserved from the existing system On the other side, there are alternative options to address problems of the existing system. These are: (a) to examine our options we will perform SWOT (Strength, Weakness, Opportunities, Threat) analysis technique; (b) there are generally two options off-the-shelf and custom softwares. In addition to examining general software category, the team also identified the following three types of database development approaches: standalone database, distributed database approach, and centralized database approach. The Project team proposed a webbased seaman manning system by developing user friendly software and database to improve the problems mentioned above. There are functional and non-functional requirements of the proposed system. The functional requirements include: (a) validate user which are users should have user name and password; users can be administrator, seaman; Manning officer; HRMA Manager; evaluator (i.e. HRM Division Head, Technical Manager, Training Officer, and Captain); the system prompts the user to enter password and user name; and (b) if they are correct, the system will display the required page else it prompts the user to reenter his correct identity. The non-functional requirements include: (a) The system should be operational for 24 hours per day; (b) For most queries, the system should generate report in short period of time; (c) virus protection facilities; and (d) efficient backup every week. In addition to these, the proposed system has documentation, user interface and performance. Regarding exception and error handling, the Project devised portability, reusability and maintainability. As to essential modeling, administrator, captain, fleet manager, HRMS, and technician were identified as major actors. The use cases identified are: (a) Login; (b) Register new employee; (c) Search seaman information; (d) Register new staff; (e) Follow up employee; (f) Recommendation; and (g) Technical Issue. The design deliverables include: class type architecture, controller classes of the system and business classes of the system in design. In addition, the five-layer class-type architecture for the design of the objectoriented software which include: user interface layer, controller/process layer, business/domain layer, persistence layer, and system layer was employed. In conclusion, designing seaman manning system helps the ESL Company to ease its burden and lessen the cost by facilitating manning order report generation and by avoiding some of the problems which are related to the above activities. Finally, it is recommended that the HRM Division of the Company should utilize the benefits of web-based information technology system and should implement this Project to solve its problems faced on this particular area. The ESL should also extend the Project by adding some other uncovered tasks.