HEALTHCARE INFORMATION SYSTEMS

PROJECT ASSIGNMENT – 2

HEALTHCARE INFORMATICS – 3RD YEAR

DATE:	October 2014

1. Case study (description of the organization)

SaintThomas is a hospital with a broad range of medical services. It provides multiple facilities where consultations, examinations and some medical treatments are executed.

Currently, this organization operates with 309 medic personnel assisted by 126 more employees with different occupations such as reception, administration, management, finance and maintenance. The staff has at their disposal a set of outdated and obsolete software applications. Therefore, *SaintThomas* has decided to acquire an Information System (IS) that integrates administrative tasks and management of electronic medical records. Additionally, improving communication across departments and providing support for important business processes regarding: Healthcare information registry, billing, and consultation management.

The receptionists support the **management of healthcare services** provided by the organisation. They receive any visitors, patients or clients at the clinics and answer telephone calls or emails. They also manage patients' personal data, including the registration process. They are allowed to pre-register patients, collect and update demographic data and insurance information. They are also allowed to generate both long and short registration forms, print a patient's visit history, and discharge patients. Information saved during registration is shared among facilities, providing a database of demographic, insurance, and clinical visit history information for every patient across the continuum of care.

When a patient enters the hospital he is assigned to a queue, depending on the arrival and triage method. The registration of such information also triggers the **billing process**. This process creates an invoice and decides who is accountable for its payment. There are specific entities that assume the responsibility. Namely, a patients' insurance company can assume either a part or full expenses, depending on the insurance type. If a patient does not have a private insurance, the government might be obligated to aid him, considering his monthly income and tax. Finally, a wealthy patient can pay the expenses without aid.

The **consultation process** starts with the specific queue, designated in the waitlist process. Once a patient is assigned to the queue, its medical record becomes available to the doctor responsible for the consultation. The consultation itself has a different set of states. First, the doctor analyses the patient medical record and the purpose of the visit, provided during the waitlist process. Additionally, he inquires the patient about symptoms and probable causes. If needed, the doctor may resort to observation. These tasks can be performed concurrently. However, the medic must create a diagnostic based on the information he gathered. Depending on the diagnostic severity, the doctor can propose three different types of outcomes: (1) a single prescription/treatment, (2) a prescription/treatment that requires additional consultations and (3) a recommendation letter for urgency matters (surgery, for instance). The patient's medical record becomes unavailable 15 minutes after the medic marks the consultation as terminated.

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2. Goals

The goal of this project is the implementation of a Healthcare Information System (HIS) as a solution towards the organisation (SaintThomas) business processes. Additionally, such processes must be modelled and executed through a Business Process Management System (BPMS). Therefore, the assignment has four goals:

1) The analysis of SaintThomas core business processes;
2) The identification of the organisation requirements;
3) The analysis of HISs that meet the organisation requirements;
4) The implementation of SaintThomas business processes using a BPMS.

3. Deliverables

The final report must deliver the following items:

- Identification of the organisation business processes;
- Business process models;
- Organisation requirements list;
- Domain model;
- Identification and description of the features available in the HIS;
- Correlation of the HIS features with the organisation requirements;
- Recommendation and justification of the chosen HIS;
- Business processes implemented in Bonita Software.

4. Rules

The submission of the present project must follow these rules:

- The project must be elaborated by groups of 3 elements from the same class.
- The reports must be printed to paper (2 sided print);
- The reports must include: cover, index, introduction, conclusions, references and the contents required for each deliverable;
- The reports have a 20 page length limit;
- The presentation must be available in digital format;
- The reports and presentation must be delivered according to the deadline established in the evaluation calendar;
- The printed reports must be delivered at locker A061;

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- The digital format reports and presentation must be delivered in a single file to the following email: rui.rijo@ipleiria.pt ;
- Regarding evaluation, there will be no distinction between the members of the group.