Stellenbosch
UNIVERSITY
IYUNIVESITHI
UNIVERSITEIT

forward together
sonke siya phambili
saam vorentoe

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SI/ISM 354 GROUP PROJECT BRIEF 2023

Revision 9.0 (4 September 2023)

Introduction

This project involves the design and development of a functional and novel information system based on a provided scenario, to be completed in your selected project groups. You are expected to select a relevant software development methodology to aid the management of the project as a whole, as well as to facilitate a number of systems analysis and design activities and the implementation of the system itself.

This is a group project and students should self form groups of three to four students. One student per group should complete the form on SUNLearn indicating the names and student numbers of group members by 17:00 on Monday 2 October.

Project Breakdown

You are expected to design and develop the proposed system outlined in the available case study. The case study has sufficient scope to permit your group to develop a wide range of systems. You are expected to produce one functional ***prototype*** in JavaScript using the React and React-admin frameworks and a backend of your choice. Your application should conform to principles of good programming practice and should be suitably commented. Additional marks will be awarded to groups who enhance their applications to include extra, appropriate functionality (but note, NB, failure to complete the basic requirements will result in heavy penalties, even if there are many bells and whistles).

As a starting point, you should make use of either a UML class diagram or an ERD to model the data of your application. You should also use other systems analysis and design techniques (including further UML if you wish) to ensure that you know what you are implementing. You may choose to submit a simplified BRD in this regard, but you are not required to do so, a coherent collection of diagrams and linking text is sufficient. While you may wish to use Visual Paradigm for this submission, you are also welcome to use other tools if you deem these easier to use and/or more suitable.

Focus on core elements of BRD - class diagram or ERD NB Turn it into js code

At the end of the project implementation, you will be expected to demonstrate your application in a class session where evaluators will see your functioning application and a grade based on the presentation will be awarded. Your application should include suitable demonstration data to allow the presentation to flow sufficiently well. These presentations will be on 26 and 27 October in class. The schedule for the presentations will be released on 23 October, but all presentations will be in the practical class sessions. Google software/system presentations (structure, what to talk about etc)

D2? PlantUML? Pencil and paper SmartArt

Note that the duration of this project is very tight and limited in scope, you have only a small time to fully implement the application in the final week(s) of the semester. You should consider this in your design, and keep the whole system simple. Further, you are reminded that this is a ***prototype***, you need not design and implement a full system.

Peer Assessment

In addition to group assessment, you will be assessed individually in order to ensure equal allocation of tasks, and that each group member receives a fair grade. To this end, you will complete a peer evaluation at the end of the semester. This peer evaluation is used to gauge your, and your groups, participation in the final project. It is important for you to be aware that your final, individual mark, will be influenced by both your- and your group members- peer assessments. Failure to participate in the project process will guarantee you a low mark. Students will only receive their individual mark, and not the overall group mark. It is recommended that this mark not be discussed within groups.

Mark Breakdown and Due Dates

Your project will be graded with reference to the following grading scheme and relevant weights.

Final Project	*27 October 17:00*	50	
BRD/UML Diagrams/Documentation		10	
Presentation Flow and Understanding		5	
Functioning Application Flow During Presentation		15	Presentation
Accuracy of Code and Commenting		10	
Implementation of Extra Features		5	
Use of Git and GitHub		5	

Submission Requirements

Your final implementation, along with a single PDF file of your diagrams/design documentation, should be submitted to GitHub by 17:00 on Friday 27 October. This submission time is after the presentations, so you may tweak your application slightly between presentation and submission. Failure to meet the deadline will result in a 25% penalty being applied per day until 17:00 on 30 October, after which groups will receive a score of zero. Your final submission should be a coherent commit to GitHub, consisting of your source code and your PDF at the top level of the repository. A small number of marks are allocated to your use of Git.

Case Study[1]

The town of Stellenbosch is a picturesque town surrounded by mountains and vines on all sides. These mountains and vines pose a significant problem to the town – a lack of space to grow. Accommodation for students at the local university is a particular problem, and one that your client – StelStay Properties[2] – aims to solve.

StelStay is undertaking a major development project to build a large residential community for students seeking private accommodation. The community will consist of several dozen buildings, each containing a mixture of single, two-, and three-bedroom apartments which will be leased out to students on an annual basis from 1 December to 30 November each year. Leases will be made out per room, not per apartment. In most cases, the lease will not be made out to the student but someone else who signs the lease on their behalf[3].

Managing such a property environment is expected to be quite challenging, and while the development is under construction, StelStay has approached your company[4] to build a business information system to run the site.

NB for diagrams

The information system should include a way for students to apply for a lease on a flat. The application should record the students name, ID number, contact e-mail, contact phone, programme of study, year of study, calendar year of lease required, as well as similar personal information regarding the bill payer. The application should not be recorded against a specific apartment, but a facility for the administrators to add buildings, apartments and rooms to the system should be available, and then once reviewed should be able to mark an application as approved or rejected and approved applicants should be assigned to rooms.

Beyond the ability for students to apply for an apartment, and for the management of students and bill payers in apartments, the system should also include facilities to manage one or more of the below. No detail is provided by StelStay on how these facilities should look. It is up to you to decide which to implement and how. You must implement at least one as a minimum requirement but can decide to add others if desired.

The additional modules include:

- a way of communicating with residents;
- a way of managing events that occur in the community;
- a way for members of the community to communicate with each other;
- a facility to manage rules of the community and issue fines for transgressions;
- a facility to issue invoices to bill payers for the monthly rent;
- a way of managing and assigning parking bays in the community.

In addition to the above list, StelStay would like to ensure you that if your system scores well, that you may also choose (in additional to at least one of the above) to implement one or more features that you have imagined to be useful.

[1]this case study is the same as it was in 2022, but the application you build will look quite different due to different technologies
[2]this is a fictional case, and any resemblance to real persons or business is purely coincidental
[3]the *bill payer*
[4]your group should devise a company name