

**BSc (Hons) in Information Technology**



**Assignment 1 cover sheet**

**IT1060 – Software Process Modeling Semester 02 Year 01**

|  |  |
| --- | --- |
| PRJOJECT ID | MLB\_16.01\_07 |
| CASE STUDY NAME | Boat safari trip management system |
| CAMPUS/CENTRE | Malabe Centre |

GROUP DETAILS

|  |  |  |
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|  | Student Registration Number | Student Name |
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| 2. | IT22601674 | DILSHAN K. B |
| 3. | IT22603104 | DIAS M.P. U |
| 4. | IT22602800 | MUTHUKUDA ARACHCHIGE N.D |
| 5. | IT22560094 | RANASINGHE T.M. R |

**Assignment 1 Certify Sheet**

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GR

We hereby certify,

The attached is our own work and no further change will be made.

We have contributed in this assignment to the best of our ability.

And we understand,

We may be subject to student discipline processes in the event of an act of

Academic misconduct by us including an act of plagiarism or cheating.

**✓**

✓

**✓**

**✓**

Group details:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Student Name | Student registration Number | Date | Signature |
| 1. | PRABASHWARA R. P | IT22560926 | 26/04/23 | A drawing on a piece of paper  Description automatically generated with medium confidence |
| 2. | DILSHAN K. B | IT22601674 | 26/04/23 | A picture containing line chart  Description automatically generated |
| 3. | MUTHUKUDA ARACHCHIGE N.D | IT22602800 | 26/04/23 | A picture containing text  Description automatically generated |
| 4. | RANASINGHE T.M.R | IT22560094 | 26/04/23 |  |
| 5. | DIAS M.P. U | IT22603104 | 26/04/23 | Text, letter  Description automatically generated |



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**1. HYPOTHETICAL SCENARIO**



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"TraveleX" is a boat safari management system owned and managed by the Ceylon Safari Company to explore the beauty and biodiversity of the Madu River, which is situated in Balapitiya, Sri Lanka.

The company provides a reliable service with their management system to ensure a joyful experience for their customers that meets all safety standards.

A customer can search for a safari trip, search packages, view route, and view FAQ (frequently asked questions). A normal customer can become a registered customer by entering personal details into the system through the “TravelX” website and agreeing with the terms and conditions. If the customer is from a foreign country, they should enter passport details into the system. Once registered, a normal customer can book a safari trip and then make payments for the trip. Furthermore, Payments can be made by credit cards, e-payment platforms such as PayPal and AmEx. Also, payments can be made by paying cash to the receptionist. A registered customer can book a safari trip, get a discount, get a promotion, and add feedback.

A receptionist can register customers manually to the system, book a trip, accept cash payments, generate reports of booked trips, and give information requested by the customers.

The financial aspects of the company are supervised by the accountant. Accountants can check the financial accounts in the system and generate financial reports such as balance sheets, income statements and cash flow statements.

The manager of the company can generate the management report, check financial statements, and analyze reports through the system.

Boat operators have access to check the details of the boat. The boat operator needs to generate a confirmation message before starting the safari if the boat is in good condition. Boat operator can generate a report of maintenance of the boat.

Lifeguard ensures all safety measures for the customers. A lifeguard also can check boat details and generate a confirmation message if the boat is in good condition to travel. Lifeguards can generate safety equipment reports to manage



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all the lifesaving equipment such as ring buoys, life jackets, first aid kits, back boards, and rescue tubes.

The guide will be assigned for every safari trip to provide a joyful experience for the customers. Guide has access to check the details of the customers, check the details of the boat, and view the navigation of the route through the system.

The system admin supervises all aspects of the system and is responsible for managing it. System admin has access to add content, add related news, check feedback, and manage FAQ (frequently asked questions). Admin also has access to view the content.

In conclusion, Ceylon Safari Company is a comprehensive company that provides a memorable boat safari experience to customers while ensuring their safety. With reliable service for an affordable price.

**2.USE CASE DIAGRAM.**



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**Diagram

Description automatically generated**



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**3.Use case scenarios**

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| --- | --- | --- |
| **Use Case Id** | TXA0107 | |
| **Use Case Name** | Register | |
| **Pre - condition** | Visit “TravelX” web site | |
| **Post condition** | Display success message | |
| **Primary actor** | Customer | |
| **Main success scenario** | **Step** | **Action** |
| 1 | Click the sign in button |
| 2 | System shows customer details form |
| 3 | Customer enters details |
| 4 | System requests a password |
| 5 | Customer enters a password |
| 6 | Click the submit button |
| 7 | System validates the details |
| 8 | The system displays a confirmation message |
| **Extension** | **Step** | **Action** |
| 5a | Customer enters a password less than eight characters generates error message |
| 7a | Customer omits required fields system notifies it. |

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|  |  |  |
| --- | --- | --- |
| **Use Case Id** | TXA0205 | |
| **Use Case Name** | Make payments | |
| **Pre - condition** | The customer should log into the system.  The customer should register to the system. | |
| **Post condition** | The system displays a confirmation message about the reservation. | |
| **Primary actor** | Register customer | |
| **Main success scenario** | **Step** | **Action** |
| 1 | Trip details are displayed by the system |
| 2 | The customer selects the trip |
| 3 | Package details are displayed by the system |
| 4 | The customer selects the package |
| 5 | Payment methods are displayed by the system |
| 6 | The customer selects payment method |
| 7 | Payment is made by the customer |
| **Extension** | **Step** | **Action** |
| 2a | The customer has not selected a trip, the system displays the message to select a trip |
| 6a | The customer has selected incorrect payment method, and the system asked for confirmation |



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| --- | --- | --- |
| **Use Case Id** | TXA0301 | |
| **Use Case Name** | Enter customer details | |
| **Pre - condition** | Receptionist should register to the system as receptionist | |
| **Post condition** | Display success message and customer ID number. | |
| **Primary actor** | Receptionist | |
| **Main success scenario** | **Step** | **Action** |
| 1 | Receptionist should login to the system |
| 2 | Receptionist requests customers' national ID |
| 3 | Input Customers’ national ID details |
| 4 | Obtain the health details |
| 5 | Input health details. |
| 6 | The receptionist verifies the details |
| 7 | Display entered details to customers to verify |
| 8 | Save the details |
| **Extension** | **Step** | **Action** |
| 1a | The receptionist forgets the password, it can be changed using the forgot password option |
| 2a | Customer’s national ID is not valid, display an error message |
| 2b | A customer does not have a national ID, the system allows to use passport or driving license details |
| 7a | Customer details are wrong, go back and update them |

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| --- | --- | --- |
| **Use Case Id** | TXA0406 | |
| **Use Case Name** | Maintain system | |
| **Pre - condition** | System should be up and running | |
| **Post condition** | Update the system | |
| **Primary actor** | System Admin | |
| **Main success scenario** | **Step** | **Action** |
| 1 | Login to the system as Administrator |
| 2 | Manage end user accounts, permissions, access rights, and server storage allocations |
| 3 | Test and Perform backups and restore systems |
| 4 | Troubleshoot system and identify errors |
| 5 | Test payment gateway systems |
| 6 | Manage register customer database, boat status database |
| 7 | Manage the physical and virtual environment (hardware components and cloud services) |
| 8 | Develop and maintain documentation about current environment setup |
| 9 | Manage the security of the server regarding privacy, security, and regulatory compliance |
| 10 | Manage and perform software and hardware upgrades |
| **Extension** | **Step** | **Action** |
| 1a | System notifies if login details are invalid |
| 5a | The payment gateway system notifies if there is an error |

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|  |  |  |
| --- | --- | --- |
| **Use Case Id** | TXA0502 | |
| **Use Case Name** | Generate management report | |
| **Pre - condition** | User must log into the system | |
| **Post condition** | User generates management report | |
| **Primary actor** | Manager | |
| **Main success scenario** | **Step** | **Action** |
| 1 | System displays different types of reports |
| 2 | User chooses report type |
| 3 | User receives information |
| 4 | System support to analyze that report and show summary |
| 5 | User enters those details to final generated report |
| 6 | User confirms final generated report |
| 7 | System displays the confirmation message |
| **Extension** | **Step** | **Action** |
| 1a | System does not show types of reports |
| 1b | User manually selects reports |
| 1c | User receives information |
| 4a | System notifies cannot analyze viewed report |
| 4b | User must analysis those reports manually |
| 4c | System shows summary |



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|  |  |  |
| --- | --- | --- |
| **Use Case Id** | TXA0702 | |
| **Use Case Name** | Generate financial statements | |
| **Pre - condition** | Accountant must log into the system. | |
| **Post condition** | Accountant should be able to generate financial statements | |
| **Primary actor** | Accountant | |
| **Main success scenario** | **Step** | **Action** |
| 1 | The system displays a menu to select a financial statement type |
| 2 | The accountant selects the financial statement type |
| 3 | Enter financial data |
| 4 | System calculates entered data |
| 5 | The system displays calculated information |
| 6 | Accountant verifies information manually |
| **Extension** | **Step** | **Action** |
| 1a | Accountant selects wrong option, system displays an error message |
| 5a | System does not display calculated information, systems display a message to Re-enter data |



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|  |  |  |
| --- | --- | --- |
| **Use Case Id** | TXA0801 | |
| **Use Case Name** | Generate insurance report | |
| **Pre - condition** | User must access the system | |
| **Post condition** | User must generate insurance report | |
| **Primary actor** | Insurance Agent | |
| **Main success scenario** | **Step** | **Action** |
| 1 | User login into the system. |
| 2 | User requests boat details. |
| 3 | System displays boat details. |
| 4 | User analysis that boat status using the system. |
| 5 | Users enter those details into the insurance report. |
| 6 | System check insurance criteria and compare entered details. |
| 7 | User confirms insurance details |
| 8 | Details automatically added to the system. |
| **Extension** | **Step** | **Action** |
| 1a | User cannot login to the system, system automatically sends new access link to agent’s email. |
| 4a | System notifies cannot analysis viewed report, analyses the report manually. |
| 6a | System cannot compare insurance criteria, check manually Insurance Terms and Conditions. |



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|  |  |  |
| --- | --- | --- |
| **Use Case Id** | TXA0902 | |
| **Use Case Name** | Confirm boat status | |
| **Pre - condition** | Login to the system | |
| **Post condition** | Submit current boat status | |
| **Primary actor** | Lifeguard | |
| **Main success scenario** | **Step** | **Action** |
| 1 | Choose the available boat. |
| 2 | Enter the boat number to the system. |
| 3 | System provides required standard condition of the boat and safety equipment. |
| 4 | The lifeguard manually inspects the boat and safety equipment. |
| 5 | Update the status details. |
| **Extension** | **Step** | **Action** |
| 4a | The lifeguard finds a hazard in the boat, marks it in the system. |
| 5a | If the lifeguard forgets to update status details, the system will send notification to the lifeguard’s phone. |

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| --- | --- | --- |
| **Use Case Id** | TXA1001 | |
| **Use Case Name** | Check boat details | |
| **Pre - condition** | Login to the system | |
| **Post condition** | Display boat documentation | |
| **Primary actor** | Boat operator | |
| **Main success scenario** | **Step** | **Action** |
| 1 | System displays a message to enter the boat number |
| 2 | User enters the boat number |
| 3 | System verifies boat number |
| 4 | Displays the boat details |
| **Extension** | **Step** | **Action** |
| 2a | System notifies an error message when user entered invalid boat number |

**4. WORKED SECTIONS AND SPECIAL CONTRIBUTIONS FOR THE USE CASE DIAGRAM**



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As the leader of the group, I briefly discovered and explained the entire project. I took on the responsibility to create a project plan and assign actors to my group members. I created use case scenarios for System Admin and Boat Operator.

After members had done their relevant tasks, I collected them, finalized the project report, and submitted it before the deadline.

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I developed the whole hypothetical scenario for the use case diagram complementing the use cases of each actor with the ideas of my group members. Furthermore, I carefully reviewed lecture slides and spoke with our SPM lecturer to clarify some doubts. I wrote one use case scenario for the Accountant.

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As a member of the group my tasks were to draw and design the use case diagram using UML and give use case IDs to each use case scenario. Additionally, I created use case scenarios for Receptionist and Lifeguard. To accomplish this task, I called the receptionists of several safari companies and gained knowledge from their experience.

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My part in this group project is to identify all the actors and their use cases. To complete this objective, I had to contact a boat safari company and had a discussion with the Manager. Also, I created two use case scenarios for the Manager and Insurance Agent.



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The part I worked on was creating the report. I was designing use case scenarios for the given template and fixed some grammar mistakes. I developed two use case scenarios for Customer and Register Customer.



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**5. CHALLENGES FACED**

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* Unclear use case boundaries.
* As a leader, my main challenge was leading a team I had never led before.
* At first, I was learning about my role.
* Then according to start project planning and describe them to my team members.
* Hard to find information related to boat safari management system, we called some safari services, and they did not provide us suitable answers.
* Another challenge was we developed project while getting ready to the exam.
* Also, System Admin Actor and Boat Operator Actor developed by me. It is very hard to find use case boundaries related to them and extension points also.

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* I had to change the hypothetical Scenario several times to make it align with uses cases.
* Spend a lot of time identifying generalizations between actor to actor and use case to use case.

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* Unclear receptionists’ use cases.
* Lack of experience of drawing use case diagrams using UML.
* I was not familiar with Draw IO software.



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* It was difficult to create new useful actors and their use cases.
* Spend lots of time contacting a manager.

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* Unable to find correct use case scenario template.
* I struggled to make it methodically.