ICT284 Systems Analysis and Design

Assignment 2

Worth:	25% of your final grade.
Due:	See LMS
Submit to:	LMS, via the Assignments tool. Submit as a single Word document including all parts of the assignment. Ensure you complete the declaration that is part of the submission process, and click all the way through to the final 'submit' button. *Simply uploading your assignment does not submit it.* You do not need to include a separate cover sheet but you should include your name and student number as part of your document filename. Your name and student number should also be included in the assignment document.

Late assignments that do not have an extension will be penalised at the rate of 5% per day.

The assignment requires you to carry out some systems analysis and early systems design activities for the Weddings Parties Everything system described here. Read the case study on the next page and answer questions 1-10 following.

Summary of what to submit:

Question	Task	Marks
1	Stakeholders	5
2	Functional and non-functional requirements	10
3	Use cases	20
4	Domain model class diagram	20
5	CRUD matrix	10
6	Fully-developed use case description	10
7	Activity diagram	10
8	System Sequence Diagram (SSD)	10
9	State Machine Diagram (SMD)	10
10	User acceptance test plan	10
GENERAL	Presentation including layout, formatting, table of contents, and proofreading	5
	TOTAL MARKS	120

The case study: Weddings, Parties, Everything Catering Services System

Just about every event these days is expected to have a professionally catered menu to accompany it. Weddings, conferences, corporate events, birthdays, anniversaries, graduations and parties are just some of the different types of events where people want to have that special food and drink experience.

Weddings, Parties, Everything is a rapidly-growing online business that links together customers who need a caterer for their event with businesses that provide catering. Customers input their location and requirements, and are presented with a shortlist of potential caterers who may be able to provide what they need. WPE is somewhat similar in concept to the catering service provided through One Flare at https://www.oneflare.com.au/catering

WPE has been partly manual for the first few months of their operation, but now needs a new system to automate their business of putting together the right customer with the right caterer. They intend to roll the system out nationally, from their original base in WA. Edison Guacamole, the owner/manager of WPE, has contacted you for help.

The two sides to the system are, of course, the caterers and the customers. *Caterers* register on the WPE system by providing their business name, description, types of services they provide (selected from a list), their location (city and postcode), link to their own website, and contact email. 'Verified' caterers are those that have provided their ABN, business name, logo, and proof of current Public Liability or Professional Indemnity insurance to the system. Using a verified caterer provides additional confidence to customers that they are using a legitimate business.

If they choose, the caterer can also advertise themselves as having an 'On-Time Guarantee'. This means that they guarantee to provide the service on time, and if they are more than half an hour after the scheduled time will reimburse the customer $100. Caterers can also use reviews from previous satisfied customers in their profile, and their average rating by customers.

Caterers pay to use the WPE system: this is done through purchasing a number of 'credits' when they register. Payment for credits is done through PayPal outside of the WPE system, although WPE also keeps a record of the transactions. Credits are used for preparing quotes for customers, with every quote costing the same number of credits. Credits expire after three months, and the system will notify the caterer that they need to purchase more credits in order to be able to quote. The system also notifies the caterer if they have run out of credit.

Customers do not need to pay in order to use the WPE system. When a customer requires a quote for a catering job, they submit their requirements through an online form. They supply their postcode location and a list of requirements, including type of event (buffet, dinner party, food truck, cocktail party, etc); broad type of cuisine (Australian, French, Chinese, Mexican, Indian, etc); number of people to be catered for; budget per person; service required (delivery only, wait staff, bar staff, etc), date of event, and any further

instructions. They also supply an email address they can be contacted through. This email address also provides them with access to their account where they can see the status of all their job requests. The account is created when they submit their first job request.

Once the customer request for a catering job has been submitted, the WPE system matches the request with the catering services that are registered with it, and determines the three caterers that could best meet the customer's requirements. These caterers are then notified via email that there is an open request for quotation.

The caterers then respond to the customer with a detailed quote. The quote includes the cost estimate, a flag indicating whether further information is required for a complete quote, and any comments. This information is provided in an online form that the caterer completes and the system sends to the customer.

The customer receives an email including the same information that the caterer has provided in the quote form. The caterer and the customer may then discuss the job directly (outside the WPE system) in order to arrive at a final decision. To help make up their mind, the customer may also read more about the caterer in the profile they have provided to WPE, the caterer's own website, and in the reviews that have been posted to WPE.

Once the customer has decided on a caterer, they return to their account on the WPE site and choose the 'hired' option against the relevant caterer's quote for the job request. When this has been done, the other caterers who quoted are automatically notified that their quote was unsuccessful. If none of the quotes suits the customer, they may choose to enter 'unsuccessful' directly against the quotes.

If no quotes are received within 48 hours of posting the job request the customer is notified and the request is closed. A customer may also decide that they wish to cancel the job request any time before making a booking, and record this against the job request in their account.

Customers are encouraged to provide feedback on the service that their caterer has provided. After the job is completed, the customer can log in to their account and leave a 5-star rating and associated comment against the job. To prevent spurious reviews, it is only possible to post a review for a service that is recorded as being booked by that customer. When the review is posted, the feedback recorded against the caterer is updated for other potential customers to browse through on the WPE site.

Obviously, the success of WPE depends on its ability to provide the best caterers for a customer so that they can be confident in using it. Various summary reports are provided each month so that Edison can monitor the health of the business. These include the percentage of quotes that were successful in obtaining a booking for a catering job; and the average satisfaction rating of completed catering jobs. The revenue to WPE in terms of payments for credit is also reported, broken down for each capital city.

TO DO:

Answer questions 1-10 below. Note the following points:

- You may need to make assumptions where information in the case is incomplete: **state any assumptions clearly**. You can also ask questions on the forum.
- Your **diagrams** should be drawn using Visio (or suitable alternative that creates UML diagrams). Use the appropriate template for each diagram type. Make sure your diagrams are clear and readable.
- Your diagrams must follow correct UML notation and naming conventions, and **each diagram should include a title and legend.**
- Your models, diagrams and discussions should be **consistent** with one another throughout your analysis and design.
- Ensure your work is clearly and professionally **presented**, proofread for spelling and grammar, with a title page and table of contents. Start each main question on a new page.

Q1. List the main **stakeholders** for the Weddings Parties Everything system (WPE). For each stakeholder, write a brief description of their interest in the system and what aspects of it are of particular relevance to them.
You do not need to categorise the stakeholders. Don't include the systems development team.

Q2. (a) List and briefly describe the main **functional requirements** for the WPE.

(b) List and briefly describe the main **nonfunctional requirements** for the WPE.

Q3. (a) Use the **User Goal technique** to develop a list of **use cases** for the WPE. Present your list in a table that includes the participating actors, use case name and a brief use case description.

(b) Use the **Event Decomposition technique** to identify any **additional use cases** for the WPE. These will probably be temporal and state event types. Present your list in a table that includes the event, type of event, use case name, and brief use case description. You do not need to repeat the use cases you identified in (a) here.
(Note that some use cases are already identified in Q6,7,8, below. Include these in your lists.)

Q4. Create a **domain model class diagram** for the WPE, including all classes, attributes, associations, and multiplicity. Show association classes and generalisation hierarchies where appropriate.

Q5. Create a **CRUD matrix** to check the consistency between your domain model class diagram and your **complete** list of use cases. Set this out in the form of a table with classes as the columns and use cases as the rows. If you find discrepancies between the models while you are doing this, you should go back and correct your earlier models as required so that your final set of models is consistent.

Q6. Create a **fully-developed use case description** for the use case ***Find caterer.*** Follow the template provided at the end of this handout.

Q7. Draw an **activity diagram** to represent the flow of activities for the use case ***Print credit payments report.***

Q8. Draw a **system sequence diagram** for the use case ***Provide feedback.***

Q9. Draw a **state machine diagram** to show the possible states and transitions for a **Catering Job** object. Label each state with the state name. Label each transition with the appropriate transition name, guard condition (if appropriate) and action expression (if appropriate).

Q10. Develop a **user acceptance test plan** for a **customer** of the WPE system. Base it on the relevant use cases you have identified. You can follow the example in the textbook (below). Present your test plan in a table including the fields: use case name, test conditions, expected outcomes. You do not need to include test data.

	A	B	C	D	E	F
1	Spec ID	Cross refer to use case	Short description	Test conditions	Expected outcomes	Comments
2	10	101	Maintain customer Info	Add customer, update customer, delete not allowed	New customer with all fields, updated customer with selected fields	
3	11	201	Maintain sale info	Create sale, update sale, finalize sale, pay for sale	New sale in DB, update selected fields, payment creates transaction	
4	12	202	Ship items	Display items, update status	Sale update, sale items updated, shipment created	

Image from: Systems Analysis and Design in a Changing World, 7th Edition ©2016. Cengage Learning

Use Case Name:		
Scenario:		
Triggering Event:		
Brief Description:		
Actors:		
Stakeholders:		
Preconditions:		
Postconditions:		
Flow of Activities:	**Actor**	**System**
Exception Conditions:		