

## Task 1

### Ambiguities

#### Whether the app will run on a kiosk in a booking office still?

This is an ambiguity which isn't addressed in the interview with entertainment providers and is not addressable with consumers. Therefore, in order to progress, we are assuming that the booking office with kiosks will be the main method of booking events.

#### Whether event preferences are part of the register process for consumers

We asked the consumer this question after finding out that consumers would like to filter events based on preferences indicated on their profile. Hence, we will be assuming upon registering for an account, consumers can indicate event preferences.

#### Whether reviews should include photos or not?

We didn't ask the consumer about photos in reviews. The consumer has specified text reviews but didn't mention whether this was exclusive. Henceforth, we will be assuming that we will not allow photographic reviews.

#### What functionality does the event number have?

We found out about the event number when asking about the functionality of requesting directions. We know that the event number can be used to request directions for a specific event, but we are unsure what other purpose this number has. We will assume however, that the event number not only allows a consumer to request directions for a specific event, but also search for this specific event in the app.

#### What kind of information is present in a booking confirmation?

We didn't ask this question to consumers. We know that once a booking is confirmed, an email is sent to the consumer and this email acts as the ticket to an event. However, it is unclear what information is present in a booking confirmation. Therefore, we will assume that the consumers details such as first name, last name, email, event number and address of event is included.

#### What preventative measures to data loss will be used?

This topic was touched on in an interview with entertainment providers. Since we are assuming that we are still operating on kiosks in a booking office, we will assume an online cloud based as a preventative measure to prevent data loss.

#### How the system for 'custom' tags will work

A need for custom tags was identified in the interview. However, a system for custom tags is ambiguous. We don't want an overflow of tags where some tags mean the same thing but due to spelling differences, lead to different tags. Therefore, we will assume a system which providers must apply for tag approvals through us Acme Corp before being added to the app which can be used by any entertainment provider.

### Where reviews are in the application

We understood reviews are part of system as proposed by the interview with the entertainment providers and confirmed with the consumer. However, it isn't clear where reviews are in the application. Therefore, we will assume that reviews are viewable once clicking on an event and scrolling down. The newest text-based reviews will appear first and a mean rating of the event.

### Review format

We confirmed in the interview with the consumer that the consumer can leave a rating on events from 1-5 and leave a text-based review. However, it wasn't clear whether either one is required, preferred or optional. For our implementation we will assume that a 1-5 rating is mandatory and leaving a text-based review is optional.

### What kind of events will we facilitate?

From the application specification, we understand that the application encouraged consumers to go out after COVID-19 cases reduced to encourage social activity. In this instance, it was obvious that the app catered towards in person events. However, since we, Acme Corp have acquired this application, we aren't bound by this, hence there is ambiguity whether online events are also events we can facilitate. Despite this, we decided to not facilitate online events with our application.

### Creating event include address

We understand through the interview with the entertainment providers Cinehome and Danceparty that when creating events information such as title, type description venue address and covid-19 safety information is added. However, it is ambiguous what pieces of information are mandatory. To ensure functionality in providing directions for consumers and overall cohesion of the application, we will make venue address a mandatory field when creating an event.

### Preferred method of transportation

In the interview with the consumers, we found that getting directions to an event should automatically show directions for a preferred mode of transport, for which the default is walking. However, there's ambiguity in where this is implemented. Does a consumer profile have a preferred mode of transportation which defaults to walking or does the external map system default to walking (when no preferred method of transportation is indicated in the profile) unless the consumer has an alternative preferred method of transportation. Therefore, to remove ambiguity, we will make the preferred method of transportation a required field when registering to be a consumer.

### Cancellation window

We understand from interviews with entertainment providers that consumers can cancel bookings for events. However, it wasn't clear whether there is a cutoff where this is no longer possible. To eliminate this ambiguity, we will say consumers can't cancel bookings within 24 hours of an event happening.

## Task 2

### Stakeholders

- Entertainment providers
- Financial sponsors
- Consumer
- Booking office employees
- Venue owners
- City permit officials

### Financial sponsors (Cinehome & DanceParty)

Cinehome and DanceParty are two entertainment providers who previously used the events application when ran by the government. While they will also be users of the app, they are also financial stakeholders since they are the ones funding us, Acme Corp to be developing this application.

As investors, the system has a primarily financial impact on them. If the system fails, not only will they not have an app for their consumers to use, but they will also have lost their financial investment and have wasted money. The more the app is used, the more incentive it gives for investors to invest capital in the project, which will allow us to improve the app even further.

### Entertainment providers

Entertainment providers refers to any event's organizer which hosts events and will use the application to share and create a digital footprint of themselves and the events they host. These are stakeholders since they will be the ones using the app alongside consumers, one of the end-users. The amount of benefit entertainment providers receives from using the application depends on how well the application is put together.

If the app is bad, then the entertainment providers will suffer financially as they will get less exposure and therefore sales on their events, and they could end up making a loss. This is different to the old system because the Government is no longer part of the system, meaning sponsored events no longer exist. Therefore, any events which cost a lot to entertainment providers will depend heavily on how well the application works because if it fails, they will incur all the loss in profit.

### Consumer

The consumer is a stakeholder as they use the events app to discover, book and then attend events. The app must meet the requirements of its consumers to be successful as consumers act as a source of revenue for the app. The user can add and leave reviews of events they attend, thereby improving the quality of events advertised on the events app.

Compared to the old system, the consumers will now get a more cohesive/fluent user experience with the ability to leave reviews and get directions by getting automatically sent to an external map system e.g, Google maps. Consumers can also get directed to a payment system e.g., PayPal rather than going to

an in-person event and paying with cash. There is also no ambiguity regarding paid and free events because we have a working payment system.

#### Booking office employees

Booking office employees are stakeholders since they directly impact the customer experience when booking events. They not only help accommodate the user experience but are directly impacted by the success of the events application. A more successful application will lead to a busier booking office, which is beneficial for both the application and the booking office. Due to the booking office employees having a limited role in the system, changes in their impact on the new system compared to the old are trivial.

#### Venue owners

Venue owners are stakeholders in an events app because they have an interest in the app's success. They may promote through the events in the app, book their venues for events and benefit from increased exposure and foot traffic. The success of the app can impact the venue owner's company because it affects the overall demand for event venues. Venue owners may also have a role in the features and marketing of the app as their involvement can help ensure that the app is serving their needs and the needs of their consumers.

Due to the nature of their involvement, there is not much difference between how venue owners worked in the old system compared to the new system.

#### City permit officials

City permit officials allow entertainment providers to hold events in areas around the city including public spaces, public parks or multi-purpose halls. They will be impacted by events that use these spaces and must give their permission for the event to go through. The success of the app can impact their workload and efficiency in managing events as well as the general standard and safety of events under their jurisdiction. City permit officials may also provide feedback and offer suggestions on the app's features and how it is created to both meet the needs of their consumers and needs of the community.

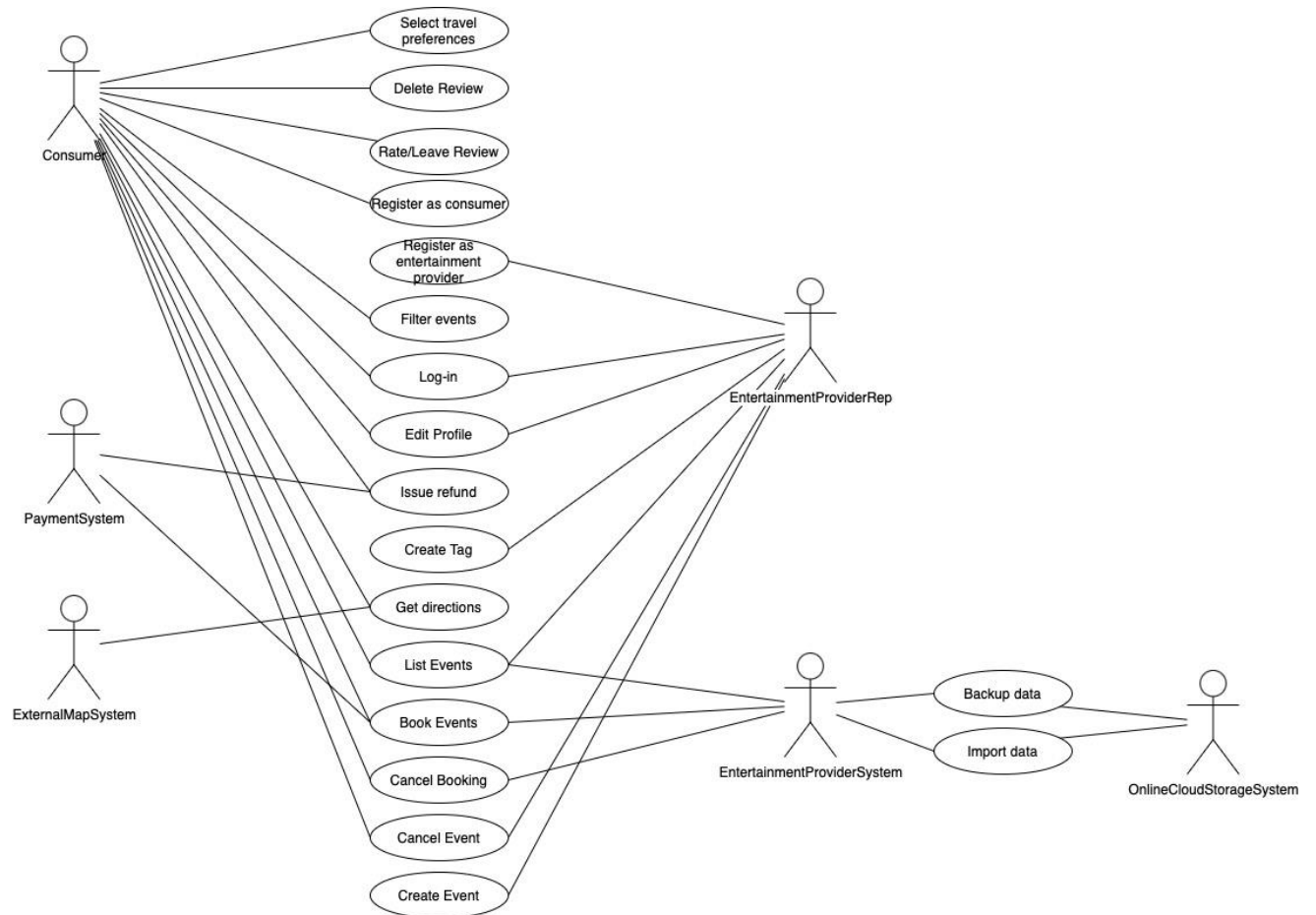
## Task 3

We decided to remove the GovernmentRepresentative as actors. We removed the government, including their use cases, as they are no longer involved in the new system. This means the system of sponsorship engagements with entertainment providers is also removed.

We added two extra actors, the ExternalMapSystem and OnlineCloudStorageSystem. ExternalMapSystem makes use of the use case 'get directions', providing directions to consumers to an event through map software such as Google Maps. The OnlineCloudStorageSystem stores data information such as event bookings and event information for both Consumer and EntertainmentProviderRep.

We also added 'import data', 'backup data', 'issue refund', 'rate/leave review', 'delete review', 'filter events', 'select travel preferences', 'register as consumer' and 'register as entertainment provider' as use cases. We added save/retrieve data to prevent data loss in case of a power cut. We added 'issue refund' to give a refund. We added use cases for reviews such as 'rate/leave review', delete review' as new features we want to incorporate in the app, supported by our interview with the consumer. We also added 'select travel preferences' to provide directions based on the user's preferred mode of transportation. We added 'filter events' to filter based on the preferences indicated in the user's profile. We added 'register as consumer' and 'register as entertainment provider' as use cases as different profiles would be more effective cause of different registration and access pages.

## Use-case diagrams with digitized version



## Task 4

a)

### **Use case name: Create tag**

Primary actor: EntertainmentProviderRep (Human)

Supporting actor: none

Summary: The EntertainmentProviderRep creates custom tags for the events.

Precondition: none

Trigger: The EntertainmentproviderRep (Human) clicks on the "Create Tag" button.

Success guarantee: The EntertainmentProviderRep can see the newly added tag on the system and that the tag can be selected to events.

Failure guarantee: If the EntertainmentProviderRep inputs a tag name that exceeds a character limit of 30, they will get an error message and therefore be prompted to input a valid tag name.

Main Success Scenario:

- 1) The EntertainmentProviderRep inputs a tag name.
- 2) The EntertainmentProviderRep clicks on the save button.
- 3) The newly added tag is now added to the list of predefined tags for events in the system.

Extensions:

2a. Doesn't save as the consumer provided tag name that exceeded a character limit of 30.

Return to step 1

### **Use-case name: Leave Review**

Primary Actor: Consumer

Supporting Actor: none

Summary: The consumer leaves a text-based review on an event they've attended

Precondition: Consumer has made a booking at this event

Trigger: Consumer selects 'leave review' on events page

Guarantee:

- Success guarantee: The consumer leaves a text-based review
- Failure guarantee: The consumer fails to leave a text-based review
- minimal guarantee: The consumer attempts to leave a review

Main Success scenario:

1. The consumer opens an event

2. Consumer selects leave a review
3. EntertainmentProviderSystem checks if they've made a booking at this event
4. Consumer selects rating 1-5
5. Consumer leaves text review
6. Review is added to the system

Extensions:

3a)

The customer has not made a booking at this event. Unable to leave a review

5a)

Consumer can leave written reviews (optional) but must leave 1-5 numerical reviews.

**Use-case name: Issue refund**

Primary actor: Consumer

Secondary actor: Payment system

Description: A consumer issues a refund for cancelled events and cancelled bookings.

Preconditions: A paid event or booking had been cancelled and a customer is logged in

Trigger: An event or booking gets cancelled at least 24 hours before the event takes place

Guarantee:

- Success guarantee: Customer receives the full refund
- Failure guarantee: Customer receives nothing
- Minimal guarantee: A request form is submitted to the system

Main success scenario:

1. The consumer goes to a refund page
2. The consumer chooses the events that are eligible for refund
3. The consumer chooses two options between PayPal and bank transfer
4. The consumer fills in the details for the destination of the fund
5. The system sends a query to the external payment system
6. The external payment system transfers the money to the consumer

Extensions:

6a) The external payment system fails to process to refund

- The system should send a notification to the consumer. The consumer can submit another request for a refund or send an email to Acme Corp.



### **Use-case name: Get Directions**

Primary Actor: Consumer

Supporting Actor: ExternalMapSystem

Summary: if the consumer wants more than the written directions, they can receive directions to a specific venue or event by clicking a button which sends them to an external map service pre-loaded with the destination and preferred method of travel, when specified, e.g., Google maps.

Precondition: none

Trigger: the consumer clicking a button for directions

Guarantee:

- Success guarantee: The consumer is successfully re directed to an external map service that has the location of the event
- Failure guarantee: The consumer is not redirected to the external map system or when redirected the map system doesn't have the location pre-loaded
- minimal guarantee: The consumer presses the button

Main Success scenario:

1. The consumer views the event information
2. The consumer presses the button to get directions/type in event number
3. The consumer is redirected to an external map application
4. The external map system opens pre-loaded with the event's location and preferred method of transport

Extensions:

3a) the button fails to redirect

1. The consumer can press the button again

4a) There is no preferred method of transport specified

1. The map system will pre-load with only the location
2. The map system will default to walking as method of transport

b)

### **Use-case: Login**

Primary actor: Consumer/EntertainmentProviderRep

Supporting Actor: n/a

Description:

The 'Login' use case allows both Consumer(s) and EntertainmentProviderRep(s) to login to the application. This is an example of a modified use-case. This is because in the old executable, there is an inefficiency in how this is implemented. There are two separate options for logging in, one as a Consumer and the other as an EntertainmentProviderRep. In our implementation, it makes sense to have one login portal which identifies whether the person logging in is a Consumer or an EntertainmentProviderRep automatically. Henceforth improving efficiency in the new system.

#### **Use-case: Select travel preferences**

Primary actor: Consumer

Supporting Actor: n/a

Description:

Select travel preferences refers to a user selecting a preferred mode of transportation to an event from an address specified in the Consumers profile. If the Consumer has indicated a preference, the new system will show directions for that preference. If not, by default, it should show direction for walking. The system should also support directions for driving by car, cycling, walking on foot, or going in a wheelchair. However, public transportation is not considered a travel preference. The goal of this use-case is to make the process of getting direction as simple and efficient as possible.

#### **Use-case: Import data**

Primary actor: EntertainmentProviderSystem

Supporting Actor: n/a

Description:

Currently, data is stored locally in the kiosk. A modification can be made so the data is stored in the cloud. This allows entertainment providers to remotely access the data without having to go to the kiosk. The system shall upload new accounts or new bookings directly to the cloud and sync everything into one place to store all the data. Additionally, cloud storage gives better robustness and security to the system. The goal of this is to make it easier for information to be delivered to the parties that need it. Lastly, cloud storage eliminates the possibility of data loss.

## Task 5

**Use case name:** Create tag

**Non-functional requirement:** The system shall take no more than 2 seconds to create a tag and save it in the database.

**Non-functional requirement category:** Performance

**Use case name:** Get direction

**Non-functional requirement:** The system shall provide a user interface for retrieving directions that is easy to understand with clear instructions and if the user has indicated a preference, the system should, by default, show direction for that preference.

**Non-functional requirement category:** Usability

**Use case name:** Issue refund

**Non-functional requirement:** The system shall protect sensitive user data such as bank account information and ensures that all transactions are secure

**Non-functional requirement category:** Security

**Use case name:** Leave Review

**Non-functional requirement:** The system shall add the review to the system within 5 seconds

**Non-functional requirement category:** Performance

**Use case name:** Filter events

**Non-functional requirement:** The system shall allow consumers to filter events based on user preferences. For example, an accessibility tag would allow wheelchair bound people to search for wheelchair accessible events.

**Non-functional requirement category:** Accessibility

## Task 6

1)

- (a) Our approach to this assignment has been more of a software product-based approach as we are the ones who have the final say on the features and requirements of the app.
- (b) This includes the requirements engineering, design, implementation, testing and ongoing improvement of the app. Although there are sponsors of the app whose needs will be considered, the app is being developed as a general solution for all event providers and consumers. We, the Acme Corp are the software product engineers who are responsible for building and maintaining the app, and make sure that it meets the needs of both stakeholders and consumers whilst continuing to improve its functionality and usability.
- (c) Two reasons why it's not software project engineering are as follows:
  - a. Not initiated by a third-party client who comes to us looking for a solution to a particular problem.
  - b. Any changes in the app are not decided and paid for by customers. Instead, the entertainment providers sponsor any change.

2)

In this stage of development after the acquirement of the application from the government, we are in a state of plan-driven development. This is because we are putting effort into planning the system in a thorough manner. For instance, we created UML use-case diagrams with use-case descriptions and identified non-functional requirements. We are specifying the system's new functionality in detail before implementation starts and identifying redundant parts of the system ready for deprecation.

3)

We believe that in this context, agile development process would be more suited. The first reason is because all the necessary requirements (e.g., book events, sign up and cancel events) have been met. This allows the engineers to push updates incrementally with new features that might be beneficial to the stakeholders. Secondly, it gives the engineers the flexibility to adapt and react to changes in market conditions in order to stay ahead of competitors. Lastly, updates can be delivered early, allowing the engineers to deliver solutions to the market quicker.

## Task 7

### Quality of Teamwork Reflection

Approaching this coursework, all of us had never met before. Therefore, we were all apprehensive about meeting the deadline with a piece of quality work. Completing all the tasks, however, didn't go awry. We were all determined to each contribute to the tasks which is reflected in us all meeting in every lab and more leading up to the deadline, creating a group chat to communicate and coordinate meetings and even setting up a shared one-drive folder for sharing notes and completed work.

In our meetings, not only did we discuss differing views on approaching a task and or our own answers, but we also emphasized the importance of communication between us. We achieved this by discussing a task in general before we all start working on it together. Furthermore, we delegated responsibilities where appropriate. For instance, in Task 4 we each individually wrote a use-case description each and then went over each one together, highlighting strengths in some to incorporate in others which were weaker.

However, our quality of teamwork could be much improved. Although we delegated work sometimes, most of the time we ended up doing double the work. This decreased our efficiency as a team. Moreover, although we took effort into coordinating frequent meetings, we didn't use our time wisely, often taking longer amounts of time to complete a task than we originally planned. To combat this, we could've incorporated Gantt charts to establish a timeline of work to completed by when. This would've had a direct impact on each of our accountability, hence improved our productivity. Finally, by incorporating an established role system such as having a leader, which would help us stay on track, complete work to a high standard and coordinate tasks more efficiently.

### Quality of work Reflection

Firstly, as a group we were able to attend all the meetings we set out and completed all the tasks in time for the submission. We gathered resources from various sources like lecture slides, recommended readings and the internet. The higher-level marking scheme was also used extensively throughout the entire coursework as guidance. We also referred to lecture slides to make our work easy to understand. However, there are several methods that we could've employed to increase the quality of our work. This is because we believe that we could have prepared for the interview with the customer with a wider range of questions instead of narrowing down on a few functions. Moreover, we believe our identification of stakeholders could have been more robust with stronger justifications. In order to produce this higher quality of work, if we had time, we should self-mark our work against the rubric and identify weaknesses and areas for improvement. Our quality of work therefore has been directly impacted by our quality of teamwork, a key area of improvement for future group projects.

