

ICT284 Assignment 1: Jin Cherng Chong 33170193

1a)

Assume the Australian Bowling Association (ABA) is the official ten-pin bowling national sporting organisation as recognised by Sport Australia. They oversee the national Australia bowling team.

Assume the Official-Eze system will keep track of the various matches to be played and the scores will be tracked as well.

Assume the scoring will be in the typical bowling scoring format which includes the team, individual and scores for each round.

Assume the location of the competition is sent in the same text message and reminder messages to the volunteers.

Four types of classification for stakeholders-

Internal Operational stakeholders:

- Application developer: the interest of the developer in the system is having a working system built. A successful system ultimately means the developer will be fully paid. In addition, the developer may be paid to maintain the working system long term.
- Volunteers: the implementation of the system streamlines the volunteer assignment process. The system provides volunteers with ample number of reminders and offers them the ability to turndown volunteer shifts in advanced or last minute without having to confront the YBCA managing committee member, instead notifying the system which is less daunting. The system also only assigns volunteers to the role they are trained in.

Internal Executive stakeholders:

- Committee of the Youth Bowling Club Association (YBCA): the committee is the main driving force behind the push to implement the Official-Eze system and is the main beneficiary of the system. The system removes the requirement of having the YBCA committee members having to manually select the appropriate volunteers for dates thus improving the YBCA efficiency in completing their day to day activities. The implementation of the system helps strengthens the relationship with the ABA which may open the door to many other additional benefits such as- increased funding to the YBCA, clubs, and upgrades to the venues, all provided by the ABA. Additionally, being more associated with the ABA

potentially improves the YBCA reputation and recognition resulting in an expansion of clubs and club members.

- Bowling clubs: The Official-Eze system reduces the role the club plays in providing the volunteers. Simply, the club provides volunteers to the ABA committee and from there the system takes over and assigns volunteers to matches. The system minimises the club's role which means they can focus on more important things.

External Operational stakeholders:

- Children: the system interests them because it is the main system used to officiate and score their matches. A failure in the system in regards to assigning volunteers to their matches would result in delays with the children's scheduled matches. In addition, a failure in the system scoring the children's matches would result in an inaccurate tournament being adjudicated. In contrast, a successful implementation of the system would provide the most accurate method to score and designate officials to children's bowling matches.

External Executive stakeholders:

- Community sponsors: a community sponsor usually provides funding for a club or an organisation for the purpose of philanthropy or to promote their business. Both types of purposes normally expect the organisation receiving the funds to use the funds. The community sponsors for clubs expect their organisation to be promoted regularly. The creation of the system helps facilitate the YBCA bowling competition; so the community sponsors are more consistently promoted.
- ABA: the ABA has various interests in the system. The system facilitates closer association between the YBCA and the ABA. This enables the ABA to monitor YBCA volunteers and venues to help ensure the safety of the children as well as maintaining the integrity of the sport. Secondly, since the system stores both the scores and information about where the competitions are held, the system makes the process of ABA identifying future Australian youth bowling talents easier. Improving the ability to scout talent allows for a more talented National Australia Bowling team. Thirdly, YBCA managing committee requires the ABA to audit the Official-Eze system; the YBCA provides the ABA a fee to incentivise them. So, the implementation of the system provides economic benefits to the ABA.

1b)

Functional requirements for the Official-EZE include-

- Send text messages a week before competition informing the volunteers about when and where they are officiating and the role they play.
- Send reminder messages the day before and the morning of competition informing the volunteers about when and where they are officiating and also the role they play.
- Assign referees and scorers for matches from volunteer list in the central secure database
- Volunteers can send the dates through web and mobile devices on when they're unavailable to work
- Allow scheduled volunteers to notify the system through the web and mobile devices on when they are unavailable
- Assign volunteer(s) from volunteers list in the database to substitute an unavailable official
- Keep track of matches played throughout the system
- Maintain information about the volunteers these include- what roles they are trained for, working with children check, and current first aid certificate
- Allow volunteers to update their information
- Allow scorers to upload the scores for their game they officiate
- Allow YBCA committee members to add volunteers to database
- Allow ABA to view volunteer's information, and scores for bowling matches

1c)

Usability

- Official-EZE system should provide step by step video tutorial on how to use
- Official-EZE system should allow for a built in text to speech reader to allow blind people to easily navigate the system

Reliability

- Official-EZE system should only be unavailable for use for a maximum of five hour per year this includes for maintenance, upgrades and unexpected outages
- Also maximum of one expected system upgrade every two months

Performance

- The Official-Eze system client should respond in <1 second for any user input

- The Official-Eze system must support 2000 users' active users at one time

Security

- Employees must change their initial password when they first log in
- Only registered users can access the system through a log in.
- The system will have distributed denial of service protection to keep the system from unexpected outages caused by it

Design constraint

- The Official-Eze system will be ran on a cloud server specifically Amazon AWS
- Official-Eze database can be accessed on both PC and smart phones.
- Official-Eze can be used in any operating system

Implementation

- Official-Eze system will be programmed In C++ programming language
- The database for the system is created using oracle and adopts oracle database syntax

Interface requirements

- Are irrelevant since our system does not need to send or receive data. Our Official-Eze system stores the data we only need. Additional we do not need other systems.

Physical requirements

- The Amazon AWS cloud server that runs our system contains 500GB storage available
- The Amazon AWS cloud server will have a proper cooling system
- Also, the Amazon AWS server has 16 GB of ram allocated for our system

Supportability requirements

- Automatic updates patching security vulnerabilities must be distributed instantly when the system has security vulnerabilities.
- The Official-Eze system must cost less than \$200 a month to run.

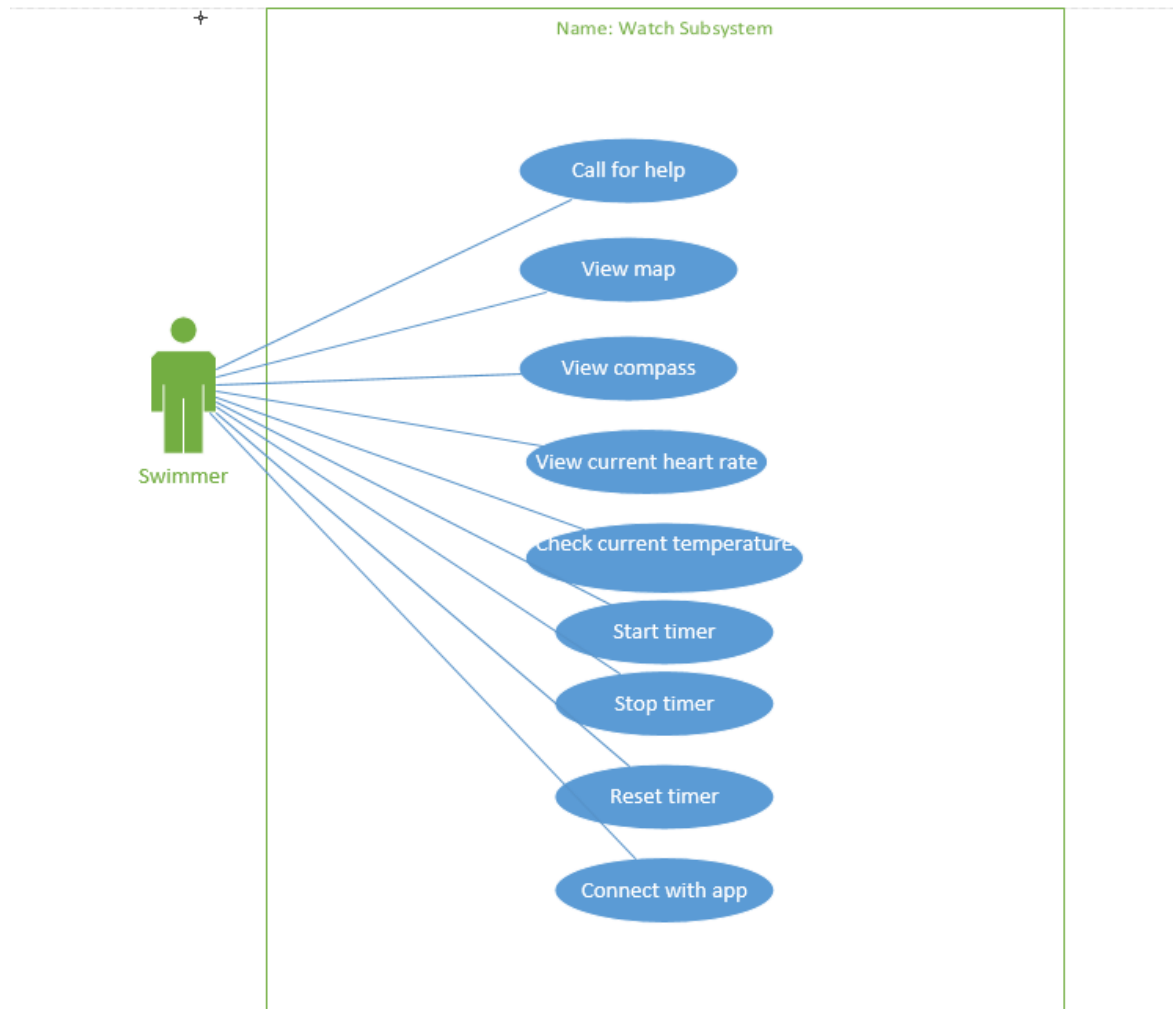
2a) Use case for the swimmer's watch

Assumption:

- Domain does not include phone apps features

Use Case	Brief description
Call for help	Swimmer taps on button indicating call for help. This will then make the system call the nearest ambulance station requesting help.
View Map	Swimmer taps view maps. System show the current map and also location of swimmer
View compass	A compass is shown with every movement following the compass. The system will display the compass
View current heart rate	The heart rate is checked based of pulse on wrist. The system displays the heart rate. Swimming must tap the heart rate button
Check current temperature	Swimmer taps the sun button. The current temperature is displayed on the screen by the system
Start timer	The swimmer taps start timer to begin the timer. The system displays the timer
Stop timer	The swimmer taps stop timer to stop the timer running. System returns to stopped time
Reset timer	The swimmer taps reset timer to restart the timer. The system returns reset time, which is normally 0:00
Connect with app	Swimmer taps connect with app to allow the system to enable the additional features on the app

2b)



3)

Event	Type of event	Use case	Brief Description	Actors
Customer wants to book online	External Event	Book Online	Customer books a new cave session online. System reserves the session for the customer	Customers
Customer makes booking in person	External Event	Book in Person	Customer books a new cave session at the Safe Crawlers Center venue. System reserves session for customer	Customers

Time to send reminder text	Temporal Event	Send reminder texts	A reminder text about their booking is sent to the customer the week and day before booking	
Customer cancels booking early	External event	Cancel Booking Early	Customer cancels the booking up to four weeks before session. System does not charge the customer	Customer
Customer cancel booking late	External event	Cancel Booking Late	Customer cancel the booking less than four weeks before session. System charges customer full price of session	Customer
Trained staff member now must accompany group	State event	Accompany Group	A booked group with a single member under 13 must be accompanied by a trained staff member	
Customer signs off his information as being truthful	External Event	Declare Information as Truth	At the end of booking, customers will sign a statutory declaration that the information provided is true	Customers
Customer's declaration of truth is stored	State event	Store declaration	Every completed booking requires the customer's declaration of his provided information being truthful to be stored.	
Time to produce inspection notes	Temporal event	Inspect caves	Between each session caves must be inspected for physical damage, cleanliness, hygiene and dropped belongings.	

			System notes the completed inspection	
Time to produce equipment inspection notes	Temporal event	Inspect equipment's	Before and after each session check for damaged equipment. System notes the completed inspection	
Time to service caves	Temporal event	Service cave	The caves are to be serviced every three months or every fifty hours of use or in some cases every fifty-nine hours of use. System will remove cave from the booking system until cave is fully serviced. Once the cave is serviced system will classify cave as bookable and reset the usage hours of the cave	
Time to do a full check of the caves	Temporal event	Full check caves	Service engineers will inspect rigorously the caves at the beginning and end of every working day. System keeps record for its ad-hoc status report	
Drainage system inspection point is reached	State event	Inspect drainage system	Only when wet cave is being serviced will the drainage system on the flood chambers be inspected	
Time to store hours of cave use	Temporal event	Update usage log	At the end of each session the hours of cave use are logged by the system in the	

			usage log	
System shows current usage of the caves	External event	Produce customer usage report	Frank request a report detailing usage of caves information.	Frank

4)

Assume dog boarder are another name for dog sitting

Assume all bookings must be filled up

Assume DogLoverName is unique

Assume contact phone number is home phone.

Assume every owner has dog and it's alive

Assume all four services (Boarders, Walkers, Trainers and Groomers) can be provided by a single dog lover, but no need for a specific class representing "all four services."

Assume the totalCharged attribute is the total charged for services including any additional cost.

Everything for dogs system

