

Name: class output TUID: \_\_\_\_\_

Date: \_\_\_\_\_

### Did You Know?

After completing this activity you will be able to:

- List facts about Digital World and Information Technology (IT) evolution and the changes in society.
- Develop strategies to ensure your success in this changing world.

#### Step 1: Prepare *individually*

→ 7 min video

Watch the video shown by your instructor. List five facts that got your attention because they could be a little disturbing:

1. During this video, 60 babies will be born in US, 244 in China, 351 in India
2. We are currently preparing students for jobs that don't yet exist!
3. For the first time in history, we have 4 generations working side by side
4. 75 billion devices will be connected to the internet by 2020
5. 10 million **self driving** cars will be on the road by 2020
6. 1 out of 6 couples married in the US last year met on line

← traditionalist  
Boomer  
Gen X  
Millennial

#### Step 2: Discuss in groups of 2-3

Compare your lists. As a group, identify the five facts that got the most attention and list why they got your attention. What concerns you about these facts?

1. 8 zettabytes ( $8 \times 10^{21}$ ) of unique new data created worldwide in 2015
2. > that is more than in the previous 5000 years
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

#### Step 3: Instructor calls on students at random to discuss their facts & concerns



**Systems Analysis: Process Decomposition with Swim Lane Diagrams - 1**

After completing this activity you will be able to:

- Interpret a swim-lane diagram
- Construct a simple swim-lane diagram

**Step 1: Individually**

Reference the swim lane diagram shown on screen. Prepare 3 questions that can be answered with the diagram: (e.g., what happens before/after X, who does Y)

1. What is the first step in the process?
2. Who notifies the rep if order is cancelled?
3. What happens if the terms are not standard?

**Step 2: In small groups of 2-3.**

Ask other group members your questions. Reach a consensus on the correct answers.

**Step 3: In small groups.**

Review the following narrative & create a swim lane diagram that describes the hiring process.

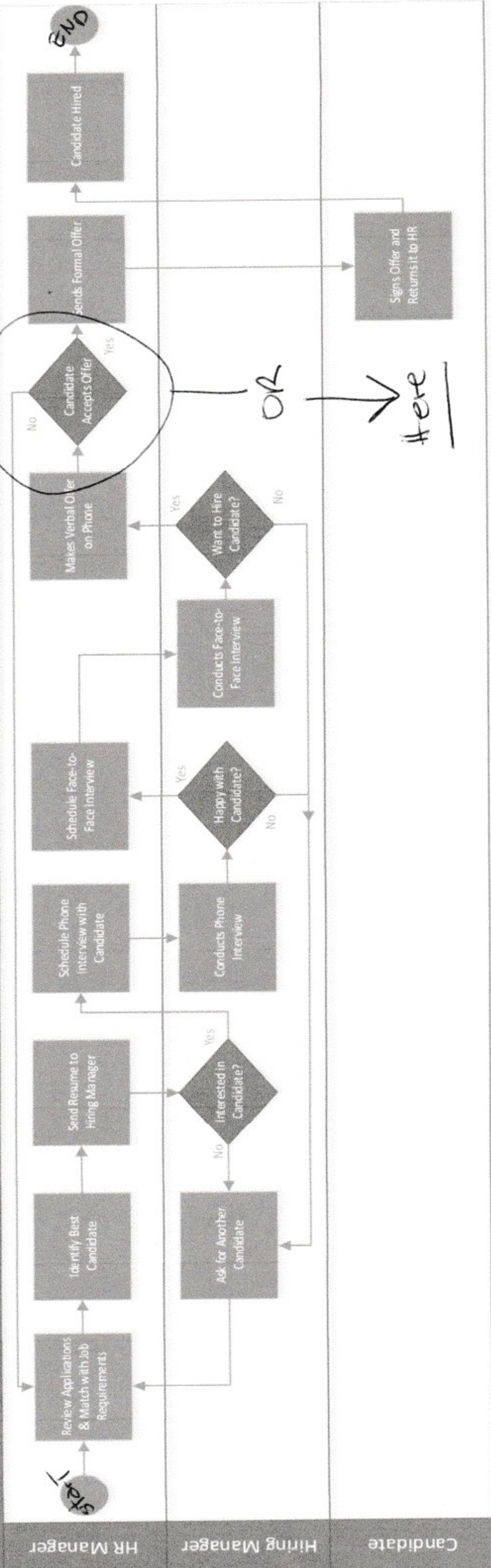
Mike is the HR manager at Playwicki Financial Services. They need to hire a new systems analyst. The job has been posted on the company's web site and a few people have applied for the position. The hiring process starts when Mike reviews the applications and matches them up with the job requirements to identify the best candidate. Once the best candidate has been identified, their resume is sent to the hiring manager to review. If the hiring manager is not interested <sup>he</sup> they ask Mike for another candidate and Mike starts looking for another candidate. If the hiring manager is interested in interviewing the candidate, <sup>he</sup> they let Mike know and Mike schedules a phone interview with the hiring manager. The hiring manager conducts the phone interview with the candidate. If the hiring manager is not happy with the candidate, they ask Mike for another candidate and the process starts over again. If the hiring manager is happy with the candidate, then <sup>he</sup> they let Mike know and Mike schedules a face-to-face interview for the candidate with the hiring manager. The hiring manager conducts the interview. If the hiring manager is not happy with the candidate, <sup>he</sup> they let Mike know and the process starts over again. If the hiring manager is happy with the candidate, <sup>he</sup> they notify Mike that <sup>he would</sup> they'd like to hire the candidate. Mike call the candidate to offer them the position over the phone. If the candidate is interested, Mike assembles the formal offer and mails it to the candidate. The candidate signs the offer, returns it to Mike and the new employee is officially hired.

group  
class

1) Customer submit PO  
2) Contracts Dept Agent requests approval from Legal Dept



# Playwiki Financial Services – Hiring Process





**Systems Analysis: Process Decomposition with Swim Lane Diagrams - 2**

After completing this activity you will be able to:

- Construct a simple swim-lane diagram

**Step 1: Individually – Read the Following Narrative**

Chris is the cake decorator at Cold Stone Creamery. Chris works part-time and is responsible for decorating all of the cakes that Cold Stone sells including both stock cakes and custom orders. Chris can't do this alone. She needs the help of other people at the store to do this.

It all starts in the morning before the store opens when the store manager takes inventory of what cakes they have in stock. While taking the inventory the manager checks the expiration dates for all cakes that are in stock. If a cake has reached its expiration date, it is removed from stock and discarded. If a cake is within a week of reaching its expiration date, it is tagged as a "Manager's Special" and the price is reduced by 25%. The store manager compares what they have in inventory to the "par sheet" which lists how many of each type of cake the store would like to have in stock. Based on the difference between what they already have in stock and what the par sheet says they should have in stock, the manager creates a list of cakes that need to be made by the crew members. The manager also looks at orders for both stock cakes and custom cakes. If there are any orders then the manager adds these cakes to the list of cakes to be built.

Throughout the day the crew members build the cakes on this list. Building a cake does not include decorating a cake. Building a cake involves cutting out the right sized/shape piece of cake from a large sheet of cake (i.e. small round, large round, small rectangle, large rectangle in either chocolate or vanilla) which will form the bottom layer of the cake and mixing the ice cream (a combination of ice cream flavors and mix-ins) that will form the top layer of the cake and putting the cake and mixed ice cream into the appropriate pan which serves as a mold. The cake is then put into the blast freezer to deep freeze the cake overnight.

*Do not include details of building a cake (i.e. what is in [ ])*

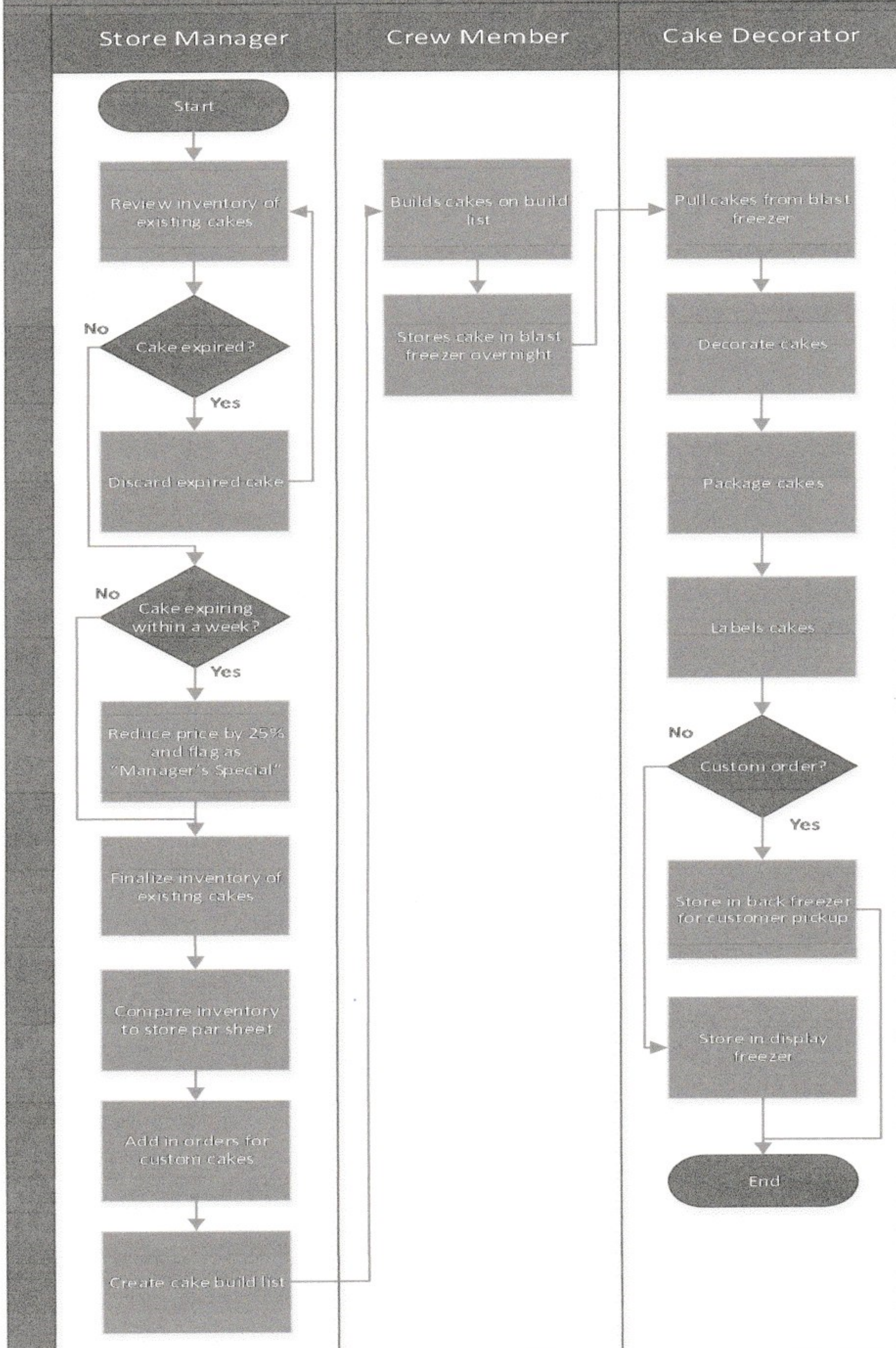
The next day Chris pulls the newly built cakes out of the blast freezer and decorates the cakes as needed to fill orders and replenish stock. As part of decorating the cakes, Chris packages the cakes into containers, labels each cake correctly with the type of cake and the expiration date for the cake. Chris puts the stock cakes out in the display freezer to be sold and the orders in the freezer in the back so they will be waiting for the customer when they come in to pick up their cake.

**Step 2: In small groups (2-3) create a swimlane diagram to document this process.**



# Swim Lane

## Managing Cake Inventory at Cold Stone Creamery





Name: Class output TUID: \_\_\_\_\_

Date: \_\_\_\_\_

## Systems Analysis: Entity Relationship Diagrams - 1

After completing this activity you will be able to:

- Interpret an entity relationship diagram
- Construct a simple entity relationship diagram

### Step 1: Individually

Reference the entity relationship diagram shown on screen. Prepare 3 questions that can be answered with the diagram:

1. What is the information we collect on student? A: TUID, name, major, address, email
2. How do we identify a section? (primary key) A: CRN
3. What is the relationship between section & course? A: A section is part of a course

### Step 2: In small groups (2-3 students).

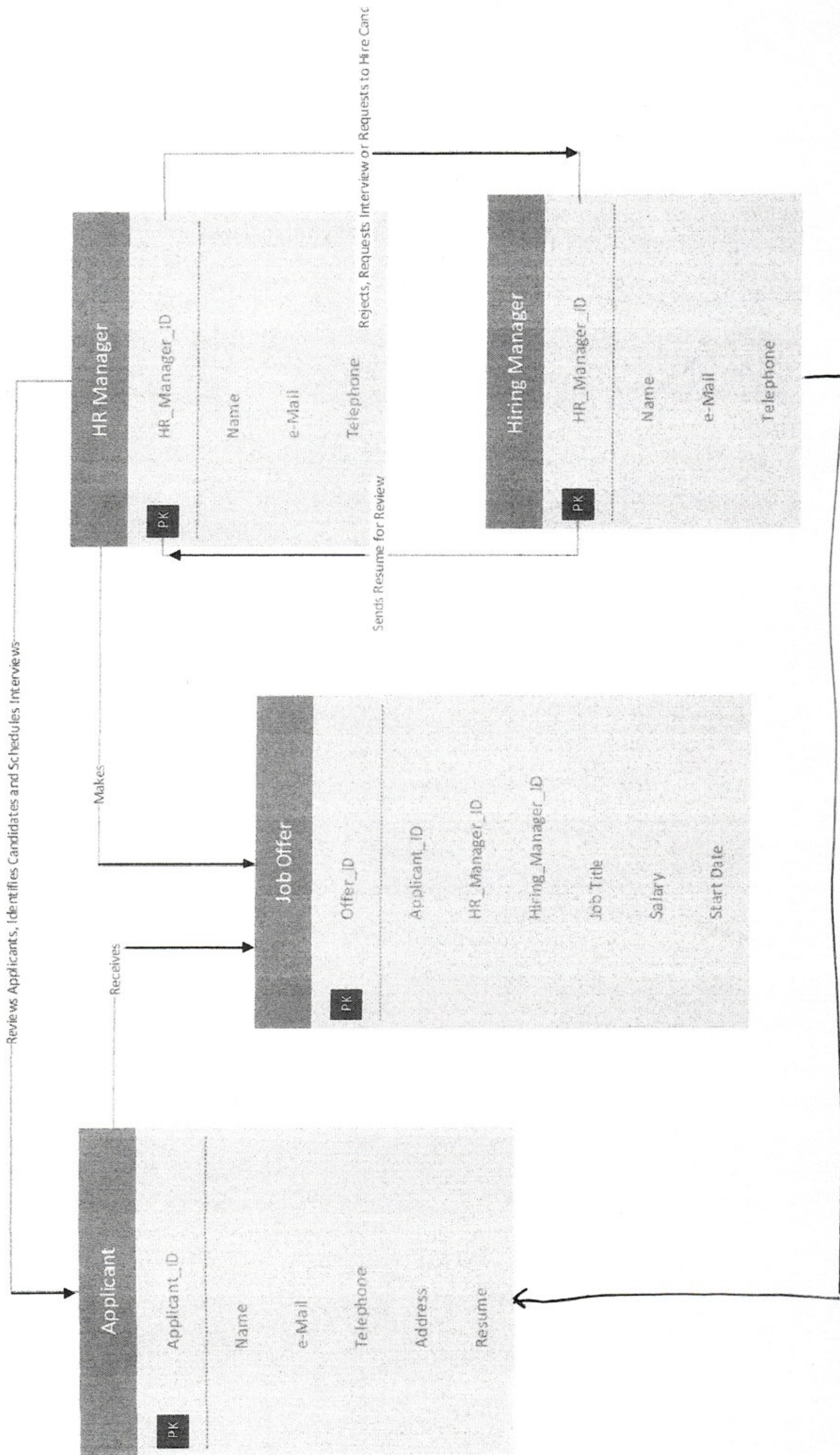
Ask other group members your questions. Reach a consensus on the correct answers.

→ 4 → 3+ per entities

**Step 3: In small groups, construct an ERD diagram by identifying the entities, attributes and relationships in the following scenario**

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Conduct Phone Interview  
 [ Face to Face Interview



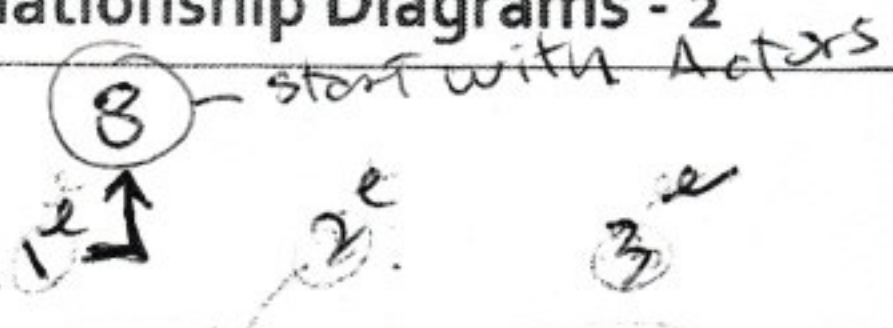
Name: Class output TUID: \_\_\_\_\_

Date: \_\_\_\_\_

## Systems Analysis: Entity Relationship Diagrams - 2

After completing this activity you will be able to:

- Construct a simple entity relationship diagram



**Step 1: In small groups (2-3) identify the entities, attributes and relationship and construct an ERD based on the following narrative**

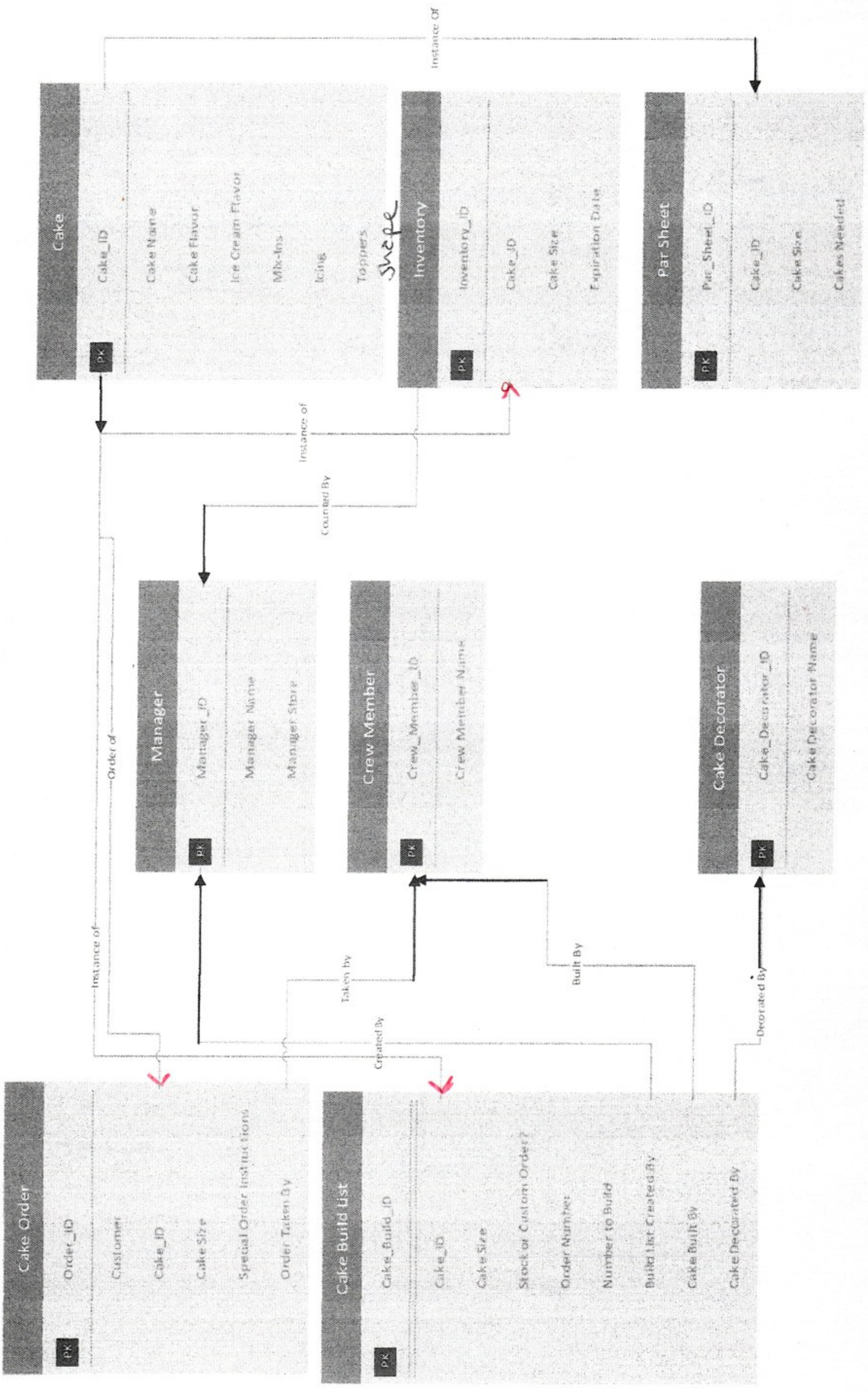
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**Systems Analysis: Conceptual Architecture Diagram**

After completing this activity you will be able to:

- Construct a simple conceptual architecture diagram and ERD

**Step 1: Individually – Review the following narrative**

In part of MIS2501 – Enterprise IT Architecture, students are challenged to propose innovative products and services that can be delivered through a variety of digital ecosystems. In the spring of 2015 an MIS2501 student, Alex Savon, proposed a new application for the Apple Watch. After doing his research he determined that the accelerometer in the Apple Watch was sensitive enough to detect seizures in a person who has epilepsy and is wearing the watch.

Alex's proposal was for an application that would detect seizures and measure/report the duration and intensity of the seizure along with the person's heart rate throughout the event to the person's physician. In addition, information about this event would be sent via text messages to the loved ones of the person experiencing the seizure. With the detailed information provided by the application, the physician would be able to fine tune the treatment plan including adjusting medications. The end result is better health outcomes and an improved quality of life for the patient. Finally, as a result of the improved health outcomes, patients would need to see their physician less frequently which will result in a significant reduction in health care costs. Due to these financial benefits, the proposal was to provide this service to patients with their health insurance companies paying for the service.

With this use of technology, everybody wins. Patients experience better health outcomes and an improved quality of life and insurance companies reduce costs.

**Step 2: In small groups (2-3 students) then discuss as a class.**

Discuss the narrative and create a conceptual architecture diagram that describes this system.

Who are the users of this system and what are the interfaces used by each user?

Patient, Physician, Insurer & Loved ones  
↓ ↓ ↓ ↓  
Apple Watch Tablet DB Cell phone

What are the processes that this system needs to support?

- 1) Detect, measure & report episode
- 2) Analyze episodes & adjust treatment plan
- 3) track covered procedures & episode

What resources (data) needs to be collected and managed by this system?

Event monitoring & reporting } DB

- 4) Report event via text

See next 2 pages for Conceptual Diagram & ERD



who?

How?

Process?  
what?

Resources?

Users



Patient



Physician

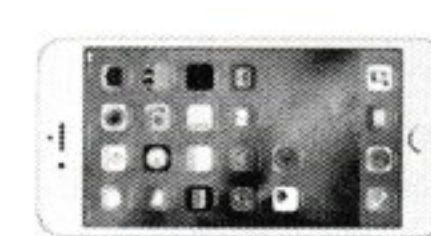


Insurer



Loved Ones

Interface



Processes

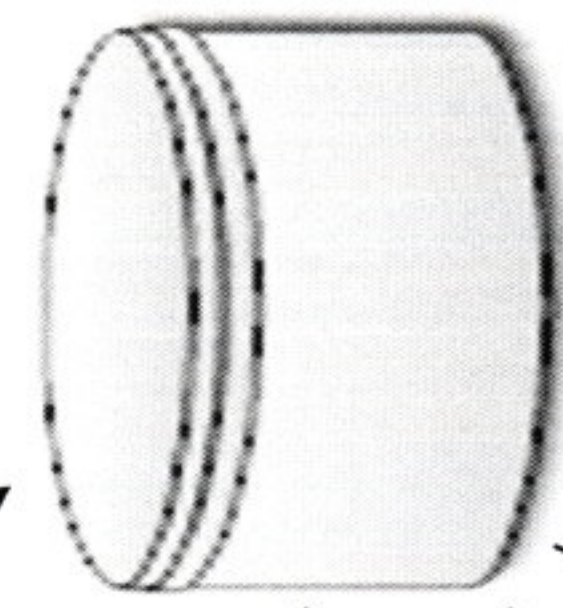
Detect, Measure and Report Episode

Analyze Episodes and Adjust Treatment Plan

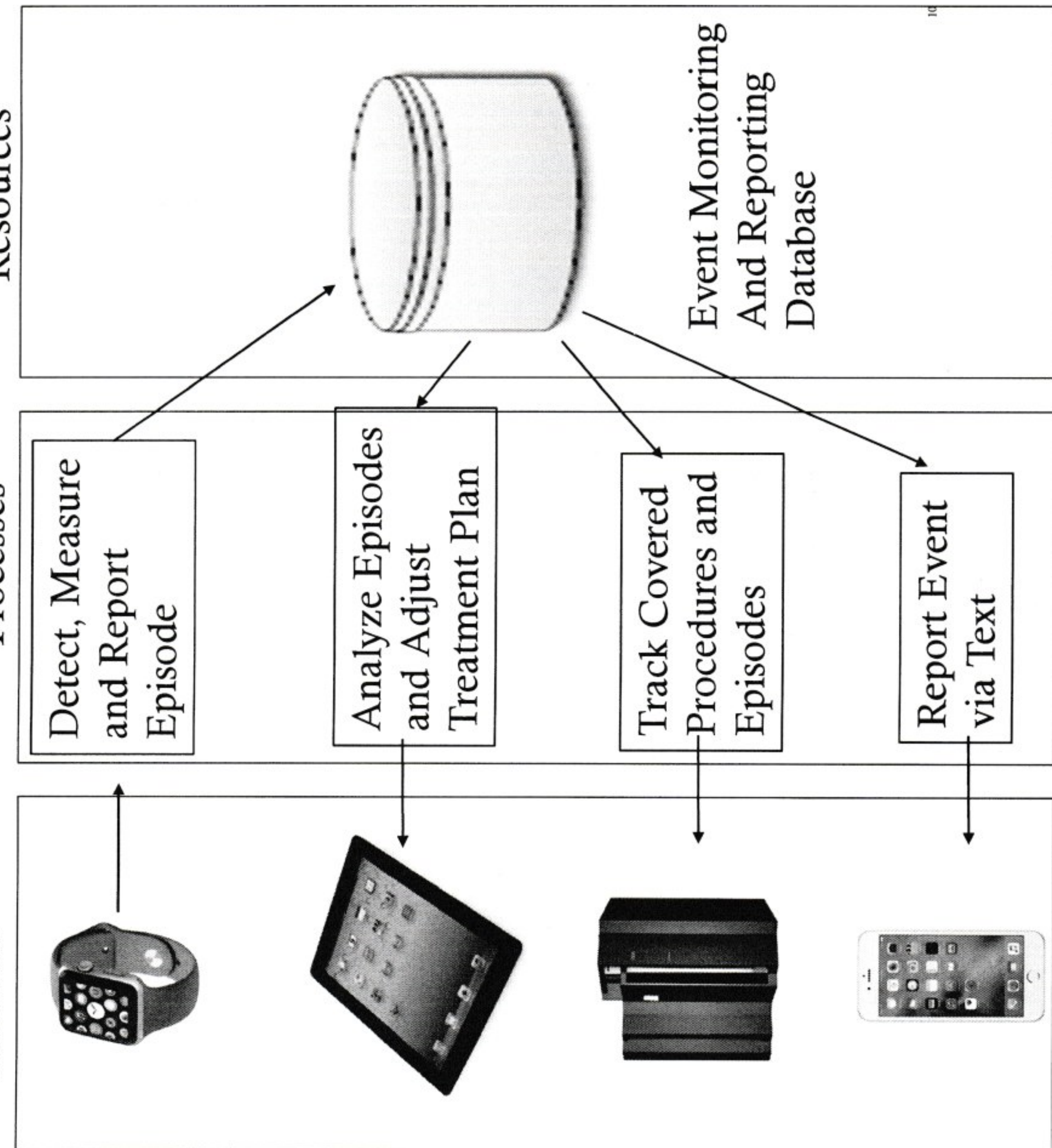
Track Covered Procedures and Episodes

Report Event via Text

Resources



Event Monitoring And Reporting Database





# ERD

