Montana State CS Graduating Senior Exam

Academic Year 2024-2025, 80 minutes.

Your performance helps us assess how well we are meeting our stated learning outcomes for computer science majors. To pass this exam, spend at least 45 minutes to provide a carefully reasoned answer to each question. This information will help us make improvements.

Name Talia Clarke

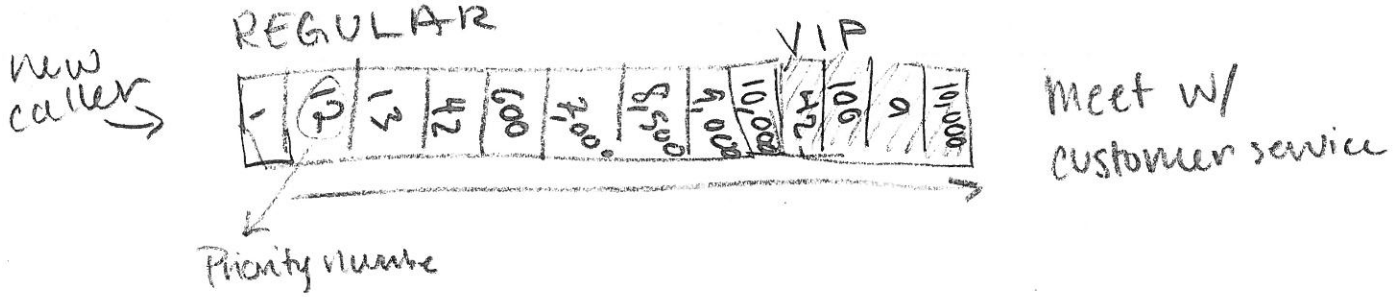
Major (Circle One): Computer Science B.A. or Computer Science B.S.

Question 1: A company uses a ticket system for customer service. Each ticket is given an urgency score when it is entered into the system. For example, a VIP customer would receive a higher urgency score than a regular customer. Assume that the urgency scores range from 1 to 10,000. The company's customer service team needs a way to find the most urgent ticket in the system and remove it when it has been addressed. New tickets can arrive at any time.

a) What simple data structure would best model this situation? Explain.

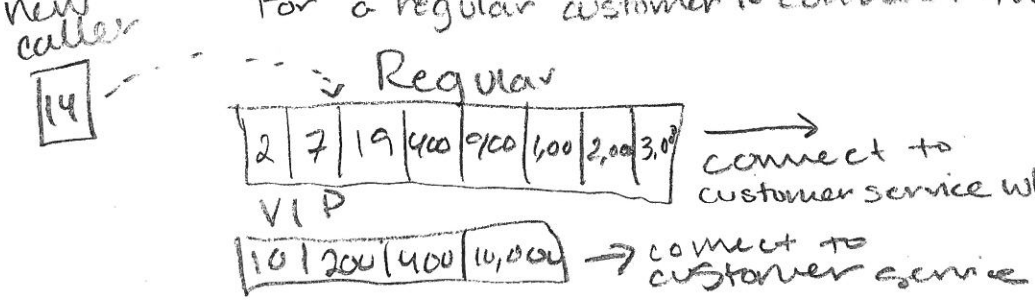
A priority queue would best model as a priority node could be for VIP while a regular node could be for a regular customer

b) Describe one way in which this data structure could be implemented and draw a picture of that data structure.



c) Describe a second way in which this data structure could be implemented and draw a picture of that data structure.

A second way could be to use an array. There would be 2 arrays one for VIP & one for regular. Objects would be inserted at their urgency level and highest urgency would connect to customer service. For a regular customer to connect the array length for VIP=0



Question 2: Write a function in a language of your choice that has two parameters: a string and a character. The function should return the number of times that the character occurs in the string.

Your language of choice (e.g. Python):

Your solution:

```
count = ∅
deff char_in_string (string , char)
for (int i =∅, i < string.lugth, i++)
 if String[i].equals (char)
    count ++

 else
    return ∅
```

Question 3: Consider a singly linked list that contains **n** floating point numbers and is maintained in ascending order. An additional **k** floating point numbers will be added to the list, one at a time. You may assume that **k << n**.

Best case time complexity of algorithm:

$n = 0 \rightarrow n(1)$

Explanation of best case time complexity:

The bast case time complexity occures when n = 0. There are no floating point number so the addion of k means the linked list does not need to be traversed only an arathmetic operation run, addion to add in k node

Worst case time complexity of algorithm:

$O(n)$

Explanation of worst case time complexity:

The worst case is that there are n number of nodes where $n \neq 0$ so the linked list need to be traversed n number of times to then insert K node

Question 4: List any extracurricular community involvement (e.g. the Gallatin Valley Food Bank or coaching), extracurricular university involvement (e.g. Engineering Ambassadors, Swing Cats, AWC or ACM) or paid internships (e.g. Workiva intern or Undergraduate Course Assistant) that you were involved with during your time at MSU. For each activity, (1) **provide** the name of the organization, (2) **describe** briefly your main activities and (3) **estimate** the total number of hours you spent.

Organization	*Main Activities*	*Hours Spent (estimate)*
Jewish Studen Assoc	Go to synogaug	30
Outdor Squattos	Go outside/ski	10

Question 5: IEEE P7003 defines the Algorithmic Bias Standard.

a) Describe briefly what algorithmic bias is.

Algorithmic bias is where algorithams due to the way they are programed favor one result over the other in an unintended way.

b) Provide a hypothetical example of how algorithmic bias could manifest itself in college admissions software.

If an algoritham was trained to acceptit students on a set of data that only had students from urban areas. It may develop a bias agaist students from rural areas. When chosing to admit students it may favor attributes associated with people who live in urban areas over rural

Question 6: In 2010 Oracle sued Google claiming copyright and patent infringement for 11,500 lines of Java API copied code. Google used this small subset of code from the JAVA API for their mobile platform operating system. Pick a side (Google or Oracle) to win this lawsuit and explain 3 possible impacts to the computing industry of this win.

Side you choose to win: Oracle

First possible impact:

If 11,500 lines is permissable to copy where does the line get drawn on size of code one can copy

Second possible impact:

Loss of need to cite sources.

This could become industry standard.

Third possible impact:

Ethical implications of using another's work as yours.

Question 7: In the ACM Code of Ethics and Professional Conduct, one ethical principle stated is to ***avoid harm***. Describe three different types of harm that the software of an autonomous, self-driving car might cause.

First type of harm:

Psyical harm to user

Ex: Not stopping @ stop sign leading to crash and injury

Second type of harm:

Psyical harm to other passengers

Ex: Not merging right and leading to crash & injury

Third type of harm:

Psyical harm to those surrounding car

Ex: pedestrians getting hit by car not stopping

Question 8: Describe your one-year plan following graduation. If you plan to work, list where you have applied (the company and the position) and mention whether you have received any offers. If you plan to go to graduate school, list where you have applied (the school and the area of study) and mention whether you have received any acceptances.

1. Join IDF

2. Get job in US Doing UI / UX

3. Get masters in HCI @ Richman University

Question 9: List any organized social activities (e.g. SwingCats or some other MSU student club, church, a residence hall volleyball team, etc.) that you were involved with during your time at MSU. For each activity, (1) **provide** the name of the organization, (2) **estimate** the total number of hours you spent.

Organization Name	*Estimate Total Hours Spent*
Chabad Bozeman	20

Question 10: List any activities that you were involved with during your time at MSU that prepared you to work more effectively with teammates whose backgrounds are significantly different than your own. For each activity, (1) **describe** the activity and (2) **estimate** the total number of hours you spent.

Activity Description	*Hours Spent (estimate)*
Going to AYSSC	10
Going to Braken Center	3

Question 11: Name the most sophisticated version control system that you use and describe three nontrivial features it has.

Name of most sophisticated version control system: ??

Git hub

Non-trivial feature 1:

Backlog

Non-trivial feature 2:

Bug Reporter

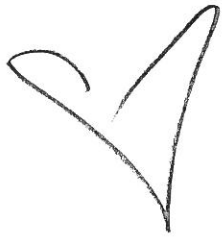
Non-trivial feature 3:

Commits

Question 12: During your time at MSU, list any major non-classroom, non-paid activities that you engaged in to help prepare for your computer science career. For example, you might have taught yourself a programming language or attended a workshop on a CS topic. For each activity, **estimate** the number of hours spent.

Activity Description	*Hours Spent (estimate)*
AYSSC	10
Brain Center	3
CS HELPCENTER	20

Best wishes wrapping up the semester and in the future!



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Name Ryan Johnson

Major (Circle One): Computer Science B.A. or Computer Science B.S.

Question 1: A company ~~uses a ticket~~ system for customer service. Each ticket is given an urgency score when it is entered into the system. For example, a VIP customer would receive a higher urgency score than a regular customer. Assume that the urgency scores range from 1 to 10,000. The company's customer service team needs a way to find the most urgent ticket in the system and remove it when it has been addressed. New tickets can arrive at any time.

a) What simple data structure would best model this situation? Explain.

A linked list because you can easily hold items and search through the list of customers.

b) Describe one way in which this data structure could be implemented and draw a picture of that data structure.

this list could be implemented on a stack to input tickets and use binary search to find the score

c) Describe a second way in which this data structure could be implemented and draw a picture of that data structure.

On a queue with the same search functionality

Question 2: Write a function in a language of your choice that has two parameters: a string and a character. The function should return the number of times that the character occurs in the string.

Your language of choice (e.g. Python): Python

Your solution:

```
Char_search(Str, char):

for i in Str:
  IF i = char:
    return
```

Question 3: Consider a singly linked list that contains **n** floating point numbers and is maintained in ascending order. An additional **k** floating point numbers will be added to the list, one at a time. You may assume that **k << n**.

Best case time complexity of algorithm: O(1)

Explanation of best case time complexity:

each number could be input through a function called for each number.

Worst case time complexity of algorithm: O(n)

Explanation of worst case time complexity:

each number could be input using a loop.

Question 4: List any extracurricular community involvement (e.g. the Gallatin Valley Food Bank or coaching), extracurricular university involvement (e.g. Engineering Ambassadors, Swing Cats, AWC or ACM) or paid internships (e.g. Workiva intern or Undergraduate Course Assistant) that you were involved with during your time at MSU. For each activity, (1) **provide** the name of the organization, (2) **describe** briefly your main activities and (3) **estimate** the total number of hours you spent.

Organization	*Main Activities*	*Hours Spent (estimate)*
ACM	Meetings	4
course assistant	Grading	90
internship	UI development	150
Intern?	IT work	150

Question 5: IEEE P7003 defines the Algorithmic Bias Standard.

a) Describe briefly what algorithmic bias is.

What algorithms to use in certian situations

b) Provide a hypothetical example of how algorithmic bias could manifest itself in college admissions software.

listing out student based off GPA or state,

Question 6: In 2010 Oracle sued Google claiming copyright and patent infringement for 11,500 lines of Java API copied code. Google used this small subset of code from the JAVA API for their mobile platform operating system. Pick a side (Google or Oracle) to win this lawsuit and explain 3 possible impacts to the computing industry of this win.

Side you choose to win: oracle

First possible impact:
the code is protected under copright law.

Second possible impact:
less open source projects

Third possible impact:
More code protections

Question 7: In the ACM Code of Ethics and Professional Conduct, one ethical principle stated is to ***avoid harm***. Describe three different types of harm that the software of an autonomous, self-driving car might cause.

First type of harm:
Physical harm in a car crash

Second type of harm:
distractions on the road

Third type of harm:
security of data like phone contacts.

Question 8: Describe your one-year plan following graduation. If you plan to work, list where you have applied (the company and the position) and mention whether you have received any offers. If you plan to go to graduate school, list where you have applied (the school and the area of study) and mention whether you have received any acceptances.

I plan on working for the company I interned for last summe, then in a year or so, going to grad school in canada where i'll work.

Question 9: List any organized social activities (e.g. SwingCats or some other MSU student club, church, a residence hall volleyball team, etc.) that you were involved with during your time at MSU. For each activity, (1) **provide** the name of the organization, (2) **estimate** the total number of hours you spent.

Organization Name	*Estimate Total Hours Spent*
eagle mount skiing	50
eagle mount biking	10

Question 10: List any activities that you were involved with during your time at MSU that prepared you to work more effectively with teammates whose backgrounds are significantly different than your own. For each activity, (1) **describe** the activity and (2) **estimate** the total number of hours you spent.

Activity Description	*Hours Spent (estimate)*
outside study groups	60

Question 11: Name the most sophisticated version control system that you use and describe three nontrivial features it has.

Name of most sophisticated version control system:

git

Non-trivial feature 1:

commenting before commit

Non-trivial feature 2:

branching

Non-trivial feature 3:

forking

Question 12: During your time at MSU, list any major non-classroom, non-paid activities that you engaged in to help prepare for your computer science career. For example, you might have taught yourself a programming language or attended a workshop on a CS topic. For each activity, **estimate** the number of hours spent.

Activity Description	*Hours Spent (estimate)*
personal game development projects	40

Best wishes wrapping up the semester and in the future!

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Name Colter D. Linder

Major (Circle One): Computer Science B.A or Computer Science B.S.

Question 1: A company uses a ticket system for customer service. Each ticket is given an urgency score when it is entered into the system. For example, a VIP customer would receive a higher urgency score than a regular customer. Assume that the urgency scores range from 1 to 10,000. The company's customer service team needs a way to find the most urgent ticket in the system and remove it when it has been addressed. New tickets can arrive at any time.

a) What simple data structure would best model this situation? Explain.

Some kind of tree where people who have the vip tag get priority over all.

b) Describe one way in which this data structure could be implemented and draw a picture of that data structure.

I dont know



c) Describe a second way in which this data structure could be implemented and draw a picture of that data structure.

I dont know

Question 2: Write a function in a language of your choice that has two parameters: a string and a character. The function should return the number of times that the character occurs in the string.

Your language of choice (e.g. Python): Java

Your solution:

```
public string x;
public char y;

void charFinder(x, y) {
    for i in x:
        if x has.y
        { y++
            }
```

Question 3: Consider a singly linked list that contains **n** floating point numbers and is maintained in ascending order. An additional **k** floating point numbers will be added to the list, one at a time. You may assume that **k << n**.

Best case time complexity of algorithm:

O

Explanation of best case time complexity:

It's so fast it takes O amount of time.

I wasn't really trying at the time of taking 132 + 232. I remember this stuff being mentioned but I don't even know enough to make a guess.

Worst case time complexity of algorithm:

lOr

Explanation of worst case time complexity:

Question 4: List any extracurricular community involvement (e.g. the Gallatin Valley Food Bank or coaching), extracurricular university involvement (e.g. Engineering Ambassadors, Swing Cats, AWC or ACM) or paid internships (e.g. Workiva intern or Undergraduate Course Assistant) that you were involved with during your time at MSU. For each activity, (1) **provide** the name of the organization, (2) **describe** briefly your main activities and (3) **estimate** the total number of hours you spent.

Organization	*Main Activities*	*Hours Spent (estimate)*
N/A		
N/A		

Question 5: IEEE P7003 defines the Algorithmic Bias Standard.

a) Describe briefly what algorithmic bias is.

A specific bias towards solving a problem even though it might not be the most efficicat way to handle said problem.

b) Provide a hypothetical example of how algorithmic bias could manifest itself in college admissions software.

There might be an easy fix for putting something on the course server however it might cause issues with other files.

Question 6: In 2010 Oracle sued Google claiming copyright and patent infringement for 11,500 lines of Java API copied code. Google used this small subset of code from the JAVA API for their mobile platform operating system. Pick a side (Google or Oracle) to win this lawsuit and explain 3 possible impacts to the computing industry of this win.

Side you choose to win: Google

First possible impact:
It should be considered that there are only so many ways a problem can be solved. What says Google can't solve there problem the same way.

Second possible impact:
The code was public therefore they can use and tweak whatever code they want, espeacially since only a selected portion was "copied"

Third possible impact:
Being the only person that can use that code could be considered a form of monopolization.

Question 7: In the ACM Code of Ethics and Professional Conduct, one ethical principle stated is to ***avoid harm***. Describe three different types of harm that the software of an autonomous, self-driving car might cause.

First type of harm:
A glich could lead to actual harm. If the software has a bug could lead to a fatal car crash.

Second type of harm:
Tesla uses music apps and other apps with your info. If this private info isn't protected right persons personal info could be harmed.

Third type of harm:
If the self driving messes with other parts of the car could lead to improper blinkers, lights, etc. This could cause harm to others.

Question 8: Describe your one-year plan following graduation. If you plan to work, list where you have applied (the company and the position) and mention whether you have received any offers. If you plan to go to graduate school, list where you have applied (the school and the area of study) and mention whether you have received any acceptances.

I am going to start looking for a career in video game design ASAP.

I'll work odd jobs until I find a good career start.

I didn't utilize career fairs enough.

I wish there was an easier way to get help with stuff.

Question 9: List any organized social activities (e.g. SwingCats or some other MSU student club, church, a residence hall volleyball team, etc.) that you were involved with during your time at MSU. For each activity, (1) **provide** the name of the organization, (2) **estimate** the total number of hours you spent.

Organization Name	*Estimate Total Hours Spent*
Residance Hall Basketball	20 hours

Question 10: List any activities that you were involved with during your time at MSU that prepared you to work more effectively with teammates whose backgrounds are significantly different than your own. For each activity, (1) **describe** the activity and (2) **estimate** the total number of hours you spent.

Activity Description	*Hours Spent (estimate)*
Forgot the class but the BA capstone	A lot
with DeFrance	

Question 11: Name the most sophisticated version control system that you use and describe three nontrivial features it has.

Name of most sophisticated version control system:

Unity

Non-trivial feature 1:

Create

Non-trivial feature 2:

Design

Non-trivial feature 3:

Sound

Question 12: During your time at MSU, list any major non-classroom, non-paid activities that you engaged in to help prepare for your computer science career. For example, you might have taught yourself a programming language or attended a workshop on a CS topic. For each activity, **estimate** the number of hours spent.

Activity Description	*Hours Spent (estimate)*
Practiced Unity	20 hours (outside of anything class related.

Best wishes wrapping up the semester and in the future!

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Name Aidan Pendergast

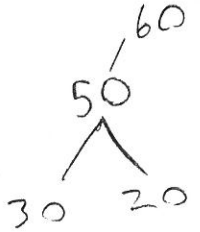
Major (Circle One): Computer Science B.A. or Computer Science B.S.

Question 1: A company uses a ticket system for customer service. Each ticket is given an urgency score when it is entered into the system. For example, a VIP customer would receive a higher urgency score than a regular customer. Assume that the urgency scores range from 1 to 10,000. The company's customer service team needs a way to find the most urgent ticket in the system and remove it when it has been addressed. New tickets can arrive at any time.

a) What simple data structure would best model this situation? Explain.

Tree

b) Describe one way in which this data structure could be implemented and draw a picture of that data structure.



Implemented to search via sorting BST

c) Describe a second way in which this data structure could be implemented and draw a picture of that data structure.

Implemented as an AVL BST

Question 2: Write a function in a language of your choice that has two parameters: a string and a character. The function should return the number of times that the character occurs in the string.

Your language of choice (e.g. Python): Python (kinda)

Your solution:

```
Function F with "Apple" and "P"

for character in string
    number += 1

print(number)
```

Question 3: Consider a singly linked list that contains **n** floating point numbers and is maintained in ascending order. An additional **k** floating point numbers will be added to the list, one at a time. You may assume that **k << n**.

Best case time complexity of algorithm: $O \log n$

Explanation of best case time complexity:

$O \log n$ best case time to insert k floating point numbers into n if its sorted in ascending order.

Worst case time complexity of algorithm: $O \log n$

Explanation of worst case time complexity:

since in ascending order case time stay the same

Question 4: List any extracurricular community involvement (e.g. the Gallatin Valley Food Bank or coaching), extracurricular university involvement (e.g. Engineering Ambassadors, Swing Cats, AWC or ACM) or paid internships (e.g. Workiva intern or Undergraduate Course Assistant) that you were involved with during your time at MSU. For each activity, (1) **provide** the name of the organization, (2) **describe** briefly your main activities and (3) **estimate** the total number of hours you spent.

Organization	*Main Activities*	*Hours Spent (estimate)*

Question 5: IEEE P7003 defines the Algorithmic Bias Standard.

a) Describe briefly what algorithmic bias is.

Algorithmic bias to me is when an algorithm chooses things based on a bias that might not be known by the maker or writer of said algorithm.

b) Provide a hypothetical example of how algorithmic bias could manifest itself in college admissions software.

Unknowingly considering less people to accept into the college based off hometown location.

Question 6: In 2010 Oracle sued Google claiming copyright and patent infringement for 11,500 lines of Java API copied code. Google used this small subset of code from the JAVA API for their mobile platform operating system. Pick a side (Google or Oracle) to win this lawsuit and explain 3 possible impacts to the computing industry of this win.

Side you choose to win: Oracle

First possible impact: Recall or update / change of Google's mobile OS.

Second possible impact: Financial impact via more work to correct issue, lawyers, or settlements

Third possible impact:

Having to write new API code for OS.

Question 7: In the ACM Code of Ethics and Professional Conduct, one ethical principle stated is to ***avoid harm***. Describe three different types of harm that the software of an autonomous, self-driving car might cause.

First type of harm: Bodily harm to a driver if software malfunctions

Second type of harm:

Harm to infrastructure due to malfunction of software

Third type of harm:

Harm to pedestrian or another vehicle in same way as first type of harm.

Question 8: Describe your one-year plan following graduation. If you plan to work, list where you have applied (the company and the position) and mention whether you have received any offers. If you plan to go to graduate school, list where you have applied (the school and the area of study) and mention whether you have received any acceptances.

I plan to continue working at my current job, full-time as a leasing agent and apply to be the leasing manager. While doing this look into website developer, social media related jobs in Bozeman. Recieve some offers from locals I know about jobs once I graduate, but unsure of exact company or positions.

Question 9: List any organized social activities (e.g. SwingCats or some other MSU student club, church, a residence hall volleyball team, etc.) that you were involved with during your time at MSU. For each activity, (1) **provide** the name of the organization, (2) **estimate** the total number of hours you spent.

Organization Name	*Estimate Total Hours Spent*
MSU Club Esports team	100 hours

Question 10: List any activities that you were involved with during your time at MSU that prepared you to work more effectively with teammates whose backgrounds are significantly different than your own. For each activity, (1) **describe** the activity and (2) **estimate** the total number of hours you spent.

Activity Description	*Hours Spent (estimate)*
MSU Club Esports team	100 hours
Leasing Agent Stadium View	400+ hours

Question 11: Name the most sophisticated version control system that you use and describe three nontrivial features it has.

Name of most sophisticated version control system:

I've never heard of a sophisticated version control system

Non-trivial feature 1:

Non-trivial feature 2:

Non-trivial feature 3:

Question 12: During your time at MSU, list any major non-classroom, non-paid activities that you engaged in to help prepare for your computer science career. For example, you might have taught yourself a programming language or attended a workshop on a CS topic. For each activity, **estimate** the number of hours spent.

Activity Description	*Hours Spent (estimate)*
Building a PC	Unknown
learning more about linux	10 hours

Best wishes wrapping up the semester and in the future!

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Name Ryley Sanden

Major (Circle One): (Computer Science B.A.) or Computer Science B.S.

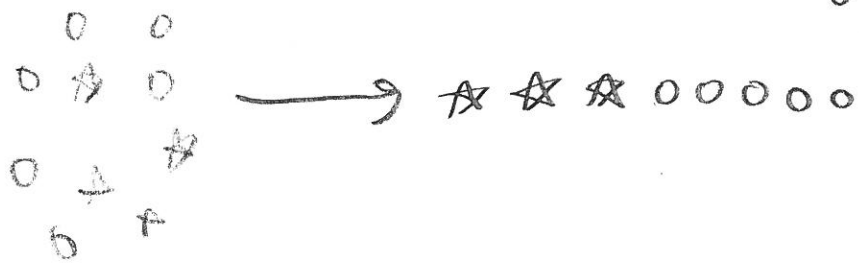
Question 1: A company uses a ticket system for customer service. Each ticket is given an urgency score when it is entered into the system. For example, a VIP customer would receive a higher urgency score than a regular customer. Assume that the urgency scores range from 1 to 10,000. The company's customer service team needs a way to find the most urgent ticket in the system and remove it when it has been addressed. New tickets can arrive at any time.

a) What simple data structure would best model this situation? Explain.

Priority Queue, you can assign priority to VIPs and organize them.

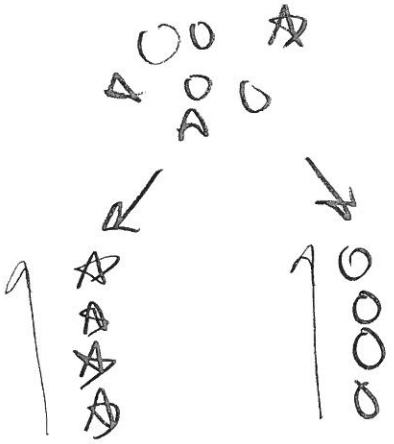
b) Describe one way in which this data structure could be implemented and draw a picture of that data structure.

☆ = VIP
O = regular customer



c) Describe a second way in which this data structure could be implemented and draw a picture of that data structure.

You could also seperate them into 2 different regular Queues and service VIP Queue until empty, then reg. Queue



Question 2: Write a function in a language of your choice that has two parameters: a string and a character. The function should return the number of times that the character occurs in the string.

Your language of choice (e.g. Python): JAVA

Your solution:

```
import random

string char = rand.string("")
int count = 0

for ___ in char {

    count++

}
return count
print("There are " + count "letters in" + char)
```

Question 3: Consider a singly linked list that contains **n** floating point numbers and is maintained in ascending order. An additional **k** floating point numbers will be added to the list, one at a time. You may assume that **k << n**.

Best case time complexity of algorithm:

O(n) n = floats added to SLL $n^1 \rightarrow n^2 \rightarrow n^3 \rightarrow \dots + k$

Explanation of best case time complexity:

This is if only n are added to the singly linked list.

Worst case time complexity of algorithm:

O(n)

Explanation of worst case time complexity:

Question 4: List any extracurricular community involvement (e.g. the Gallatin Valley Food Bank or coaching), extracurricular university involvement (e.g. Engineering Ambassadors, Swing Cats, AWC or ACM) or paid internships (e.g. Workiva intern or Undergraduate Course Assistant) that you were involved with during your time at MSU. For each activity, (1) **provide** the name of the organization, (2) **describe** briefly your main activities and (3) **estimate** the total number of hours you spent.

Organization	*Main Activities*	*Hours Spent (estimate)*
University Student Housing	Resident Advisor, Assistant Community Director	~20 hrs/wk from FALL 2022 - present
Honors presents	Plan events for Honors students from housing perspective	50 hrs

Question 5: IEEE P7003 defines the Algorithmic Bias Standard.

a) Describe briefly what algorithmic bias is.

Algorithmic bias is when input to the algorithm "weighs" more than other things present.

b) Provide a hypothetical example of how algorithmic bias could manifest itself in college admissions software.

It could favor students with 4.0 GPAs but don't necessarily have good extracurriculars.

Question 6: In 2010 Oracle sued Google claiming copyright and patent infringement for 11,500 lines of Java API copied code. Google used this small subset of code from the JAVA API for their mobile platform operating system. Pick a side (Google or Oracle) to win this lawsuit and explain 3 possible impacts to the computing industry of this win.

Side you choose to win: Oracle

First possible impact:
Good Impact: future protections from blatent copying

Second possible impact:

Good impact: reset guidlines for citing another's code as a resource

Third possible impact:
Bad impact: stricter copyright laws could lead to difficulty sharing code that has benefits to society

Question 7: In the ACM Code of Ethics and Professional Conduct, one ethical principle stated is to ***avoid harm***. Describe three different types of harm that the software of an autonomous, self-driving car might cause.

First type of harm:

Poor safety testing could lead to accidents if not tested in many driving conditions (weather, busyness).

Second type of harm:

It could fail to adapt to differing road laws based on certain states leading to unsafe driving conditions.

Third type of harm:

It could not be built with a robust human back up function in case of emergency and a person needing to drive

Question 8: Describe your one-year plan following graduation. If you plan to work, list where you have applied (the company and the position) and mention whether you have received any offers. If you plan to go to graduate school, list where you have applied (the school and the area of study) and mention whether you have received any acceptances.

I am applying to be a Community Director for MSU University Student Housing. I am currently in the interviewing process for this role. I also applied to the same role at UM. Through this job I can fund Grad school starting SP 2026. I would like to either do Adult/Higher Ed or Public Admin. My hope in the future for after grad school would either to be a professor or work in UX/UI + HCI.

Question 9: List any organized social activities (e.g. SwingCats or some other MSU student club, church, a residence hall volleyball team, etc.) that you were involved with during your time at MSU. For each activity, (1) **provide** the name of the organization, (2) **estimate** the total number of hours you spent.

Organization Name	*Estimate Total Hours Spent*
OSTEM (2022-2023)	30 ish hours became too busy with work to continue actively
Residence Hall Association (RHA) Advisor	~ 100 hours

Question 10: List any activities that you were involved with during your time at MSU that prepared you to work more effectively with teammates whose backgrounds are significantly different than your own. For each activity, (1) **describe** the activity and (2) **estimate** the total number of hours you spent.

Activity Description	*Hours Spent (estimate)*
All of my Housing Jobs	2022 - present (20 hrs/week)

Question 11: Name the most sophisticated version control system that you use and describe three nontrivial features it has.

Name of most sophisticated version control system: Git & GitHub

Non-trivial feature 1:

ability to see time changes were made

Non-trivial feature 2:

combine commits into one commit

Non-trivial feature 3:

ability to share across operating systems

Question 12: During your time at MSU, list any major non-classroom, non-paid activities that you engaged in to help prepare for your computer science career. For example, you might have taught yourself a programming language or attended a workshop on a CS topic. For each activity, **estimate** the number of hours spent.

Activity Description	*Hours Spent (estimate)*
learning UX/UI & HCI after the classes through individual projects and research	~ 30 hrs
learning Git Kraken	~ 5 hrs

Best wishes wrapping up the semester and in the future!