CSCA20 Fall 2022 Term Test #2
Duration — 1 hour and 50 minutes
Aids allowed: Printed Material Only,
No Electronic Devices

Student Number: _____

UTORid: _____

Family Name: _____ **Given Name:** _____

Read and follow all instructions on this page, and fill in all fields appropriately.

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*Do **not** turn this page until you have received the signal to start.*
(Please fill out the identification section above, and read the instructions below.)
Good Luck!

This exam is double-sided, and consists of 4 questions on 10 page (including this one). When you receive the signal to start, please make sure that you have all pages.

- Read all instructions before completing any questions
- Do not remove any pages from the exam booklet.
- Write your details on the top of the first page.
- Write your name and indicate your tutorial on the back of the last page.
- If you use any space for rough work, indicate clearly what you want marked.
- Write as clearly and legibly as possible. No marks will be awarded to unreadable answers.

Competencies & Masteries Demonstrated

	User I/O		Variables		Selection		Loops		Files		Functions		Sets/Dicts	
	C	M	C	M	C	M	C	M	C	M	C	M	C	M
Q1														
Q2														
Q3														
Q4														
Total														

Total Pages = 10

[Use the space below for rough work. This page will not be marked unless you clearly indicate the part of your work that you want us to mark.]

Question 1.

Completion of this question demonstrates competency in user I/O and competency + mastery in variables

Your job is to write a simple booking app that asks the user to input a day of the week, a starting time, and duration. If the room is free during that time, it will be booked, if the room is not free for some or all of that time, the system will tell the user that the room could not be booked. You may assume that all times begin on a specific hour, and that all bookings are in hour-long increments.

In order to store the bookings, you should create a list of lists of booleans. That is to say, a list of seven elements where each element is a list of 24 boolean (True or False) values representing the booking status for a specific day/hour.

[Use the space below for rough work. This page will not be marked unless you clearly indicate the part of your work that you want us to mark.]

Question 2.

Completion of this question demonstrates competency selection, loops and files, and mastery in selection

Your job is to create a game of MAD-LIBS. Open a file called input.txt and copy the file to output.txt. But you must observe the following rules:

- You should replace all instances of bad words (the only bad words are DARN, HECK, DANG and GOSH[1]) with the word `CENSORED`
- Every instance of `NAME` in the file should be replaced with the user's name (you should only ask them their name once)
- Every instance of the word `ACTION` in the text should be replaced with an action that the user can specify (you should ask them for a new action each time)
- If the user enters any of the bad words for their name or for actions, you should print the message `TSK TSK` and instead of the bad word, simply insert the word `DUMMY` into the output text

[1] if you know of any others, feel free to add them... but I cant imagine a good university student like you knows any worse words

[Use the space below for rough work. This page will not be marked unless you clearly indicate the part of your work that you want us to mark.]

Question 3.

Completion of this question demonstrates competency and mastery in loops What is printed by the code below?

```
string1 = "ABCDEFGHIJ"
string2 = "1234567890"
for i in range(len(string1) - 1, -1, -2):
    count = 0
    res = ""
    while(count < len(string2)):
        if(i < count):
            res += string1[i]
        elif(i == count):
            res += "X"
        else:
            res += string2[count]
        count += 1
    print(res)
```

```
def get_grade(student_name, course_name):
    #INPUT:
    #    student_name is the name of a student (string)
    #    course_name is the name of a course (string)
    #OUTPUT:
    #    return the grade that student_name got in course_name (number between 0 and 100)

def max(input_set):
    #INPUT:
    #   a set of numbers
    #OUTPUT:
    #   the largest value in that set
```

Question 4.

Completion of this question demonstrates competency in functions and sets/dictionaries
Given the functions on the previous page (you do not have to write these functions, they will be provided for you). Write a function that takes a dictionary mapping strings to sets of strings and returns a dictionary mapping strings to integers. The input dictionary should map the code of a course (e.g., `CSCA20`) to the set of students who took the course. The output dictionary should map the code of a course to the highest grade achieved by any student in that course. You may assume that student names and course codes are unique.

Last Name: _____ **First Name:** _____

Please select your tutorial (So we know how to get your test back to you)

Tutorial	Time	Check
TUT0001	MO 13:00 15:00	
TUT0002	MO 15:00 17:00	
TUT0003	TU 09:00 11:00	
TUT0004	FR 09:00 11:00	
TUT0005	TU 16:00 18:00	
TUT0006	TU 18:00 20:00	
TUT0007	TH 09:00 11:00	
TUT0008	TH 11:00 13:00	
TUT0009	TH 13:00 15:00	
TUT0010	TH 15:00 17:00	
TUT0011	TH 17:00 19:00	
TUT0012	FR 11:00 13:00	
TUT0013	FR 13:00 15:00	