# Announcements

**sample midterm (with answers)**

Posted on: Thursday, October 19, 2017 3:47:04 PM EDT

Posted by: Madhusudhan Govindaraju
Posted to: Fall 2017 - Design Patterns (CS-542-01)

1. Your teammate wants to design a method signature using parameterized types. What advice will you give your teammate about this design? [3lines] [Answer in "There are no dumb questions" section of the book.]

2. What are the differences between the Factory Method and Simple Factory patterns, in terms of design features and the class of problems? [3lines] [Answer in "There are no dumb questions" section of the book.]

3. Your team mate argues that the Abstract Base class design of the Factory Method pattern is not useful in cases when only one specialized subclass is currently using it. Will you agree or disagree? [5 lines] [Answer in "There are no dumb questions" section of the book.]

4. Hotels typically have a wake-up calling service. Each customer can call the front-desk and specify the time at which they would like to receive a wake-up call. The front-desk however allows wake-up calls only at every hour (5.00 AM, 6.00 AM, etc.) Sketch th design for an automated wake-up service. [Observer or State pattern]

5. A ceiling fan operates in three modes: low speed, medium speed, and high speed. Sketch th design for a program to control the operation of this fan. [State pattern]

6. As expert in Design patterns, you are hired by a company to design software to plan activities for alumni during homecoming weekend. Each alum during the home-coming weekend should be given an activities-list that includes a Bearcats soccer game, appointment to meet a newly hired Professor, eat in a dining hall, visit the nature preserve,and reservations for dinner at a local restaurant. These activities can be completed in any order, and there are choices for each of the activities. Each alum has to choose which dining hall, which professor to meet, etc. Sketch the design pattern(s) to implement this software.[Builder Pattern]

7. Sketch the design of software so that whenever a library book on reserve is returned, all the students on the waitlist get a text message, the instructors of the corresponding course get an email message, and the my.binghamton.edu portal's database is updated about the status of the book. [Observer and Object Pool]

8. As a Design patterns expert, you are hired by a company to design software to build a Halloween themed maze that has configurable number of dark rooms, spooky rooms, haunted rooms, walls with hidden doors,and a couple of other (scary) surprise features. Sketch the design pattern(s) to implement this maze software. [Builder or FactoryMethod]

9. The latest gadget, dChromeCast, is available in limited supply with designG company. The company has a liberal return policy so assume that many customers will return it after using it for a few days.Design a module so that the company can keep track of its supply.Customers who request after the supply has run out, should be placed on a waitlist, and informed if the gadget becomes available (because somebody returned it). [Observer and Object Pool]

**sample midterm**

Posted on: Wednesday, October 18, 2017 2:13:22 PM EDT

Posted by: Madhusudhan Govindaraju
Posted to: Fall 2017 - Design Patterns (CS-542-01)

1. Your teammate wants to design a method signature using parameterizedtypes. What advice will you give your teammate about this design? [3lines]

2. What are the differences between the Factory Method and Simple Factorypatterns, in terms of design features and the class of problems? [3lines]

3. Your team mate argues that the Abstract Base class design of theFactory Method pattern is not useful in cases when only onespecialized subclass is currently using it. Will you agree ordisagree? [5 lines]

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### Exam-1 syllabus

Posted on: Wednesday, October 18, 2017 2:07:53 PM EDT

Posted by: Madhusudhan Govindaraju
Posted to: Fall 2017 - Design Patterns (CS-542-01)

Exam-1 will be held in class next Tuesday. You can bring your own notes, class presentation slides, and the "Head First Design Patterns" book. You can bring a soft copy of the slides and book. If we find that your Internet access is turned on, or that you are viewing anything other the class notes or book's pdf on your laptop/tablet, it will be considered "cheating".

For the "Sketch the design" questions, please follow the requirement posted in the slides here:

http://www.cs.binghamton.edu/~mgovinda/courses/csx42/presentations/design-patterns-requirements-midterm.ppt

Each "Sketch the design" pattern problem will require 1-2 patterns. Write the names of the patterns first, and then proceed with the code.

Answer questions in the order given in the question sheet.

Keep track of the time so that you can answer all questions.

You are NOT allowed to borrow pencil, paper, notes, etc. from your colleagues in the class during the exam.

Class presentation slides can be found here
http://www.cs.binghamton.edu/~mgovinda/courses/csx42/pf.html

The exams syllabus will be the following:

- all discussions in class up to 10/19/17

- concepts in assignments 1, 2, and 3
- book chapters 5, 4, 2, 10.

### Homework: due beginning of class on Thursday (Oct 19th)

Posted on: Thursday, October 12, 2017 7:07:23 PM EDT

Posted by: Madhusudhan Govindaraju
Posted to: Fall 2017 - Design Patterns (CS-542-01)

I had assigned the following problem and asked you to submit it at the beginning of class on Tuesday. However, as we do not have class on Tuesday, please submit it at the beginning of class on Thursday (19th). Assume you need to design the software for the operation of a bank of elevators (a set of at least two elevators). In a sheet of paper, draw the State pattern diagram to capture the states and actions (no code is needed). Also, assume that you will need to additionally use the Observer pattern. List the data structures, and their purpose, that will be required for the SubjectImpl and ObserverImpl (no code is needed).

### Factory Method - class work

Posted on: Thursday, October 5, 2017 3:52:10 PM EDT

Posted by: Madhusudhan Govindaraju
Posted to: Fall 2017 - Design Patterns (CS-542-01)

- As an expert in Design patterns, you are hired by a company that sells a variety of computer and electronic systems online. You need to design software that will produce a printed user manual for precisely the system that is ordered, including the specific component that the user wants installed (rather than generic manuals, where different sections apply to different models, and none of the model numbers are exactly the same as the one you have because the manuals are out-of-date). Design code to fix this problem so that a user manual with correct sequential page numbers, a unified table of contents, list of figures, and index is printed for each order.

### Assignment-1 Grades

Posted on: Wednesday, October 4, 2017 4:53:28 PM EDT

Posted by: Gourav Rattihalli
Posted to: Fall 2017 - Design Patterns (CS-542-01)

Hi,

Final grades for assignment-1 are uploaded. If you have any questions, please meet TA's during office hours.

Thanks,

Gourav

### Bitbucket Reminder

Posted on: Tuesday, October 3, 2017 1:35:51 PM EDT

Posted by: Gourav Rattihalli
Posted to: Fall 2017 - Design Patterns (CS-542-01)

Hi,

Please share your bitbucket repository with both the TA's.

Following are the email addresses:

grattih1@binghamton.edu

psaha4@binghamton.edu

Thanks,

Gourav

### Bitbucket points update

Posted on: Monday, October 2, 2017 10:26:35 AM EDT

Posted by: Gourav Rattihalli
Posted to: Fall 2017 - Design Patterns (CS-542-01)

Hi,

For those who have lost points for not sharing bitbucket, we will check your submission and update the grades by today.

Thanks,

Gourav

### Assignment-1 Grades are Uploaded

Posted on: Friday, September 29, 2017 5:22:44 PM EDT

Posted by: Gourav Rattihalli
Posted to: Fall 2017 - Design Patterns (CS-542-01)

Hi,

The grades for assignment-1 are uploaded. If you have any queries regarding the grades, please meet the TA's during office hours.

Thanks,

Gourav

### Assignment-2 due date

Posted on: Wednesday, September 27, 2017 9:15:26 AM EDT

Posted by: Madhusudhan Govindaraju
Posted to: Fall 2017 - Design Patterns (CS-542-01)

Assignment 2 due date has been changed to October 3rd.

Please note that the new requirement is to use the Prototype pattern. So, Node should implement the Cloneable interface and also override the clone() method.

### Change in TA office hours

Posted on: Tuesday, September 26, 2017 8:38:57 PM EDT

Posted by: Gourav Rattihalli
Posted to: Fall 2017 - Design Patterns (CS-542-01)

Hi,

There will be a change in office hours tomorrow, i.e. September 27, the office hours will be 10:30-Noon, the location is the same(P17).

Thanks,

Gourav

### Reminder: class canceled on Tuesday, Sept 19th

Posted on: Monday, September 18, 2017 4:35:29 AM EDT

Posted by: Madhusudhan Govindaraju
Posted to: Fall 2017 - Design Patterns (CS-542-01)

This is a reminder that class is canceled this Tuesday, Sept 19th.

### Assignment-2 preview

Posted on: Monday, September 18, 2017 4:33:16 AM EDT

Posted by: Madhusudhan Govindaraju

Posted to: Fall 2017 - Design Patterns (CS-542-01)

Assignment-2 is available for preview:

http://www.cs.binghamton.edu/~mgovinda/courses/csx42/assignments/assign2/assign2.html

### quiz, guest lecture, and about next week

Posted on: Monday, September 11, 2017 9:17:51 PM EDT

Posted by: Madhusudhan Govindaraju
Posted to: Fall 2017 - Design Patterns (CS-542-01)

I announced the following last class:

- There will be a quiz in class on Tuesday (September 12th). The syllabus will include all the discussion in class, including the homeworks that were assigned during the discussion. The Observer pattern is not included.

- You can bring your notes and class presentation slides:

http://www.cs.binghamton.edu/~mgovinda/courses/csx42/pf.html

- On Thursday, Sept 14th, Prof. Lander will make a presentation.

- On Tuesday, Sept 19th, the lecture is canceled and we will have a make up later.

### Class presentation slides

Posted on: Tuesday, September 5, 2017 8:45:11 PM EDT

Posted by: Madhusudhan Govindaraju
Posted to: Fall 2017 - Design Patterns (CS-542-01)

The class presentation slides can be found here:

http://www.cs.binghamton.edu/~mgovinda/courses/csx42/pf.html

### Assignment-1 due date

Posted on: Monday, September 4, 2017 2:13:51 PM EDT

Posted by: Madhusudhan Govindaraju
Posted to: Fall 2017 - Design Patterns (CS-542-01)

Assignment due date:

- Bitbucket setup is due by September 7th
- Full assignment is due by 11.59 PM EST on September 15th.

Git Document:
https://sites.google.com/binghamton.edu/csx42bitbucketsetup/home

ANT example:
http://www.cs.binghamton.edu/~mgovinda/courses/downloads/firstName_lastName_assign_1.tar.gz

http://www.cs.binghamton.edu/~mgovinda/courses/csx42/assignments/assign1/assign1.html

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**Bit bucket instructions for assignment-1**

Posted on: Saturday, September 2, 2017 9:51:30 PM EDT

Posted by: Madhusudhan Govindaraju
Posted to: Fall 2017 - Design Patterns (CS-542-01)

https://sites.google.com/binghamton.edu/csx42bitbucketsetup/home

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**Assignment-1 preview**

Posted on: Monday, September 11, 2017 11:05:29 PM EDT

Posted by: Gourav Rattihalli
Posted to: Fall 2017 - Design Patterns (CS-542-01)

http://www.cs.binghamton.edu/~mgovinda/courses/csx42/assignments.html

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**Academic Honesty Letter**

Posted on: Thursday, August 24, 2017 9:41:18 AM EDT

Posted by: Madhusudhan Govindaraju
Posted to: Fall 2017 - Design Patterns (CS-542-01)

Please read the letter from the CS department on academic honesty. I have posted it in the "Academic Honesty" folder within the "Contents" folder.

## Course Mechanics

Posted on: Thursday, August 24, 2017 10:50:11 AM EDT

Posted by: Madhusudhan Govindaraju
Posted to: Fall 2017 - Design Patterns (CS-542-01)

Course web page:
http://www.cs.binghamton.edu/~mgovinda/courses/csx42/

Presentation slides can be found here:
http://www.cs.binghamton.edu/~mgovinda/courses/csx42/pf.html

Office hours of the instructor: Tuesday and Thursday: 4.10 pm - 5.00 pm, Engineering Building, P-15
Office hours of the TA, Gourav Rattihalli, Monday and Wednesday: noon - 1.30 PM, P-17
Office hours of the TA, Pankaj Saha, Tuesday (1 pm - 2.30 pm), Friday (9 am - 10.30 am). P-17