

Goal: To learn and practice your problem solving skills and C-language programming skills.

Objectives: We plan to accomplish these goals using an emerging cloud programming environment in Codecon.

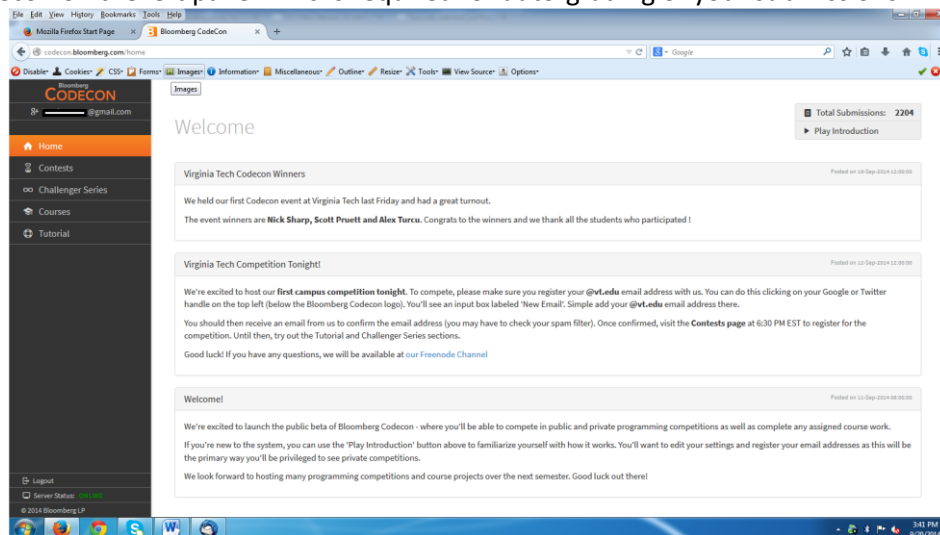
Motivation:

1. One of the required skills for our course is **problem solving** in C. However the language you use in the earlier courses (CSE115 and CSE116) is Java. We need a tool for transition into C language.
2. Most of you have been working on Windows system or an IDE and need introduction to Unix-like systems. It would be nice have platform-os-independent programming environment.
3. We find that compilers (g++, gcc) and libraries are different on the different environments (timberlake, linux on your laptop, etc.). Can the system auto-compile on submission?
4. Students send me email with partial stages of their programs and ask me if they are in the right direction. It would nice to have a tool where you can submit the code and see if you program is correct. It will nice to submit and get an automatic feedback about compile errors too.
5. It will be good have some program metrics such a performance, time to complete and number of attempts. This is NOT concern for our course's exercises.
6. We would like a system that is administered outside the university environment so that you can continue your learning (**lifelong learning**) beyond this course and well after your graduation. It will nice to have a permanent computing facility that like to your permanent email.

How do we address all the issues listed above? We will work on 10 problems uploaded on the Codecon¹ environment, one problem per week.

What to do?

1. Log into Codecon environment using your gmail account or your linked account.
2. **Link your UB email xyz@buffalo.edu** to this account by clicking on your email under the Codecon on the left panel. This is required for auto-grading of your submissions.



¹ Codecon is a problem solving and programming environment developed by volunteer developers from Bloomberg L.P.

- There will be a special course set up for cse321 students.
- Select the problem and code the solution on the right coding window as shown on the right side the screen shot below.

The screenshot shows the Bloomberg CodeCon interface. The main content area displays the problem title "The Answer is 42" with an "Active" status. Below the title, there is an "Editor" tab and a "Submissions" tab. The "Introduction" section explains the problem: users must write a patch to a Q&A engine that returns 42 for all incoming questions. It also lists "Sample implementations" in JS, C++, Java, Python, and C#. The "Input Specifications" section states that the program will take an input N ($1 \leq N \leq 100,000$) and N questions. The "Output Specifications" section requires the program to output the question followed by 42 on a new line. On the right, a C++ code editor is open with the following code:

```

9 #include <algorithm>
10 #include <climits>
11
12 using namespace std;
13
14 int main(int argv, char* argc[])
15 {
16     using namespace std;
17
18     int numQuestions;
19     string question;
20
21     cin >> numQuestions;
22     //Clear the rest of the line
23     getline(cin, question);
24
25
26     for (int ii = 0; ii < numQuestions; ii++)
27     {
28         getline(cin, question);
29
30         cout << question << endl << 42 << endl;
31     }
32
33     return 0;
34 }
35
  
```

The interface also shows a "Time Left: 23:45:40", "Memory Limit: 512 MB", and "Runtime Limit: 10s". A "Submit" button is visible in the top right of the code editor.

- You can submit the solution you coded any number of times. You are given 1 week – 2 weeks for each problem. We will adjust the times needed as per your performance and needs.
- Do not hesitate to keep submitting the code as and when you think you have a solution. It may or may not be right. But that how we learn.
- In the case of Codecon just getting the code from somewhere and submitting as one final correct answer is NOT going to work in your favor... your incomplete submits also count, we know how many times you tried and submitted...this is the learning process.
- Please give me or the TAs any feedback on any problems issues with the Codecon environment or the exercises themselves.
- Grading is automatically done based on the data/statistics collected by Codecon. So the very popular last minute, single correct solution, one shot submission will not work!
- It is preferable to use Chrome or Firefox browser.
- Finally, the most important item: the Codecon environment is available at:

<http://codecon.bloomberg.com/>

Good luck, keep coding.