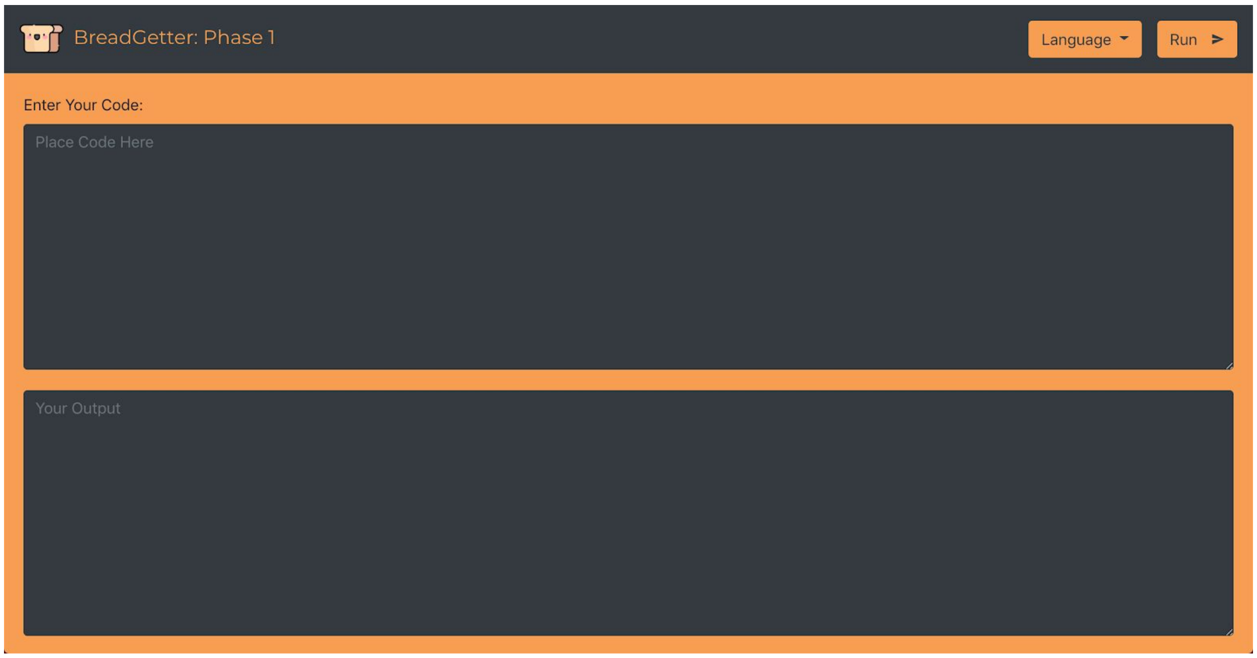
Manmeet Singh, Timothy Chase
manmeets, tbchase

CSE 486
Project 2 Report

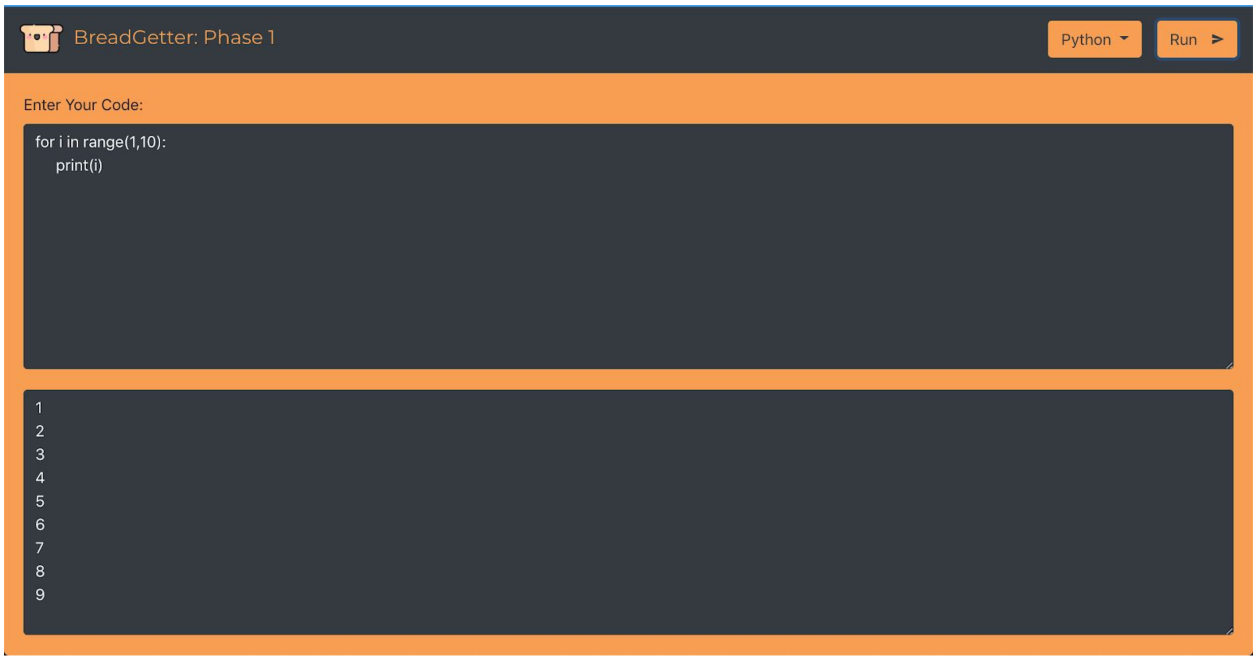
Phase 1:

The goal of phase 1 was to make a web application that takes code input from the user and outputs the compilation response. We can compile and output the result using docker. Using the Docker documentation we learned how to install Ubuntu, gcc and python onto our container. We then use node.js and shell.js to build the docker container and host on localhost:8080 off node.js.



We are using bootstrap and local css to design a frontend for users to enter their code. On the navbar, we have a language dropdown and a run button. We have an input textarea and a readonly textarea for output. Since it was halloween month, our color scheme was spooks.

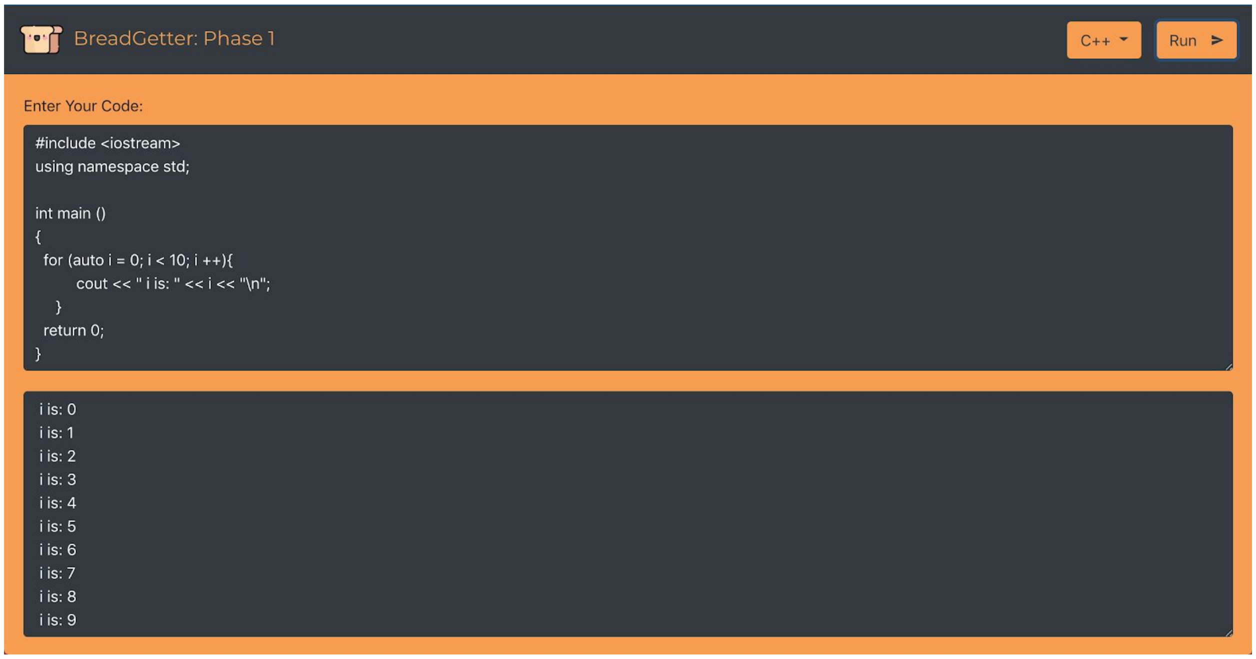
Running Python Code:



```python
for i in range(1,10):
    print(i)
```

```
1
2
3
4
5
6
7
8
9
```

Running C++ Code:

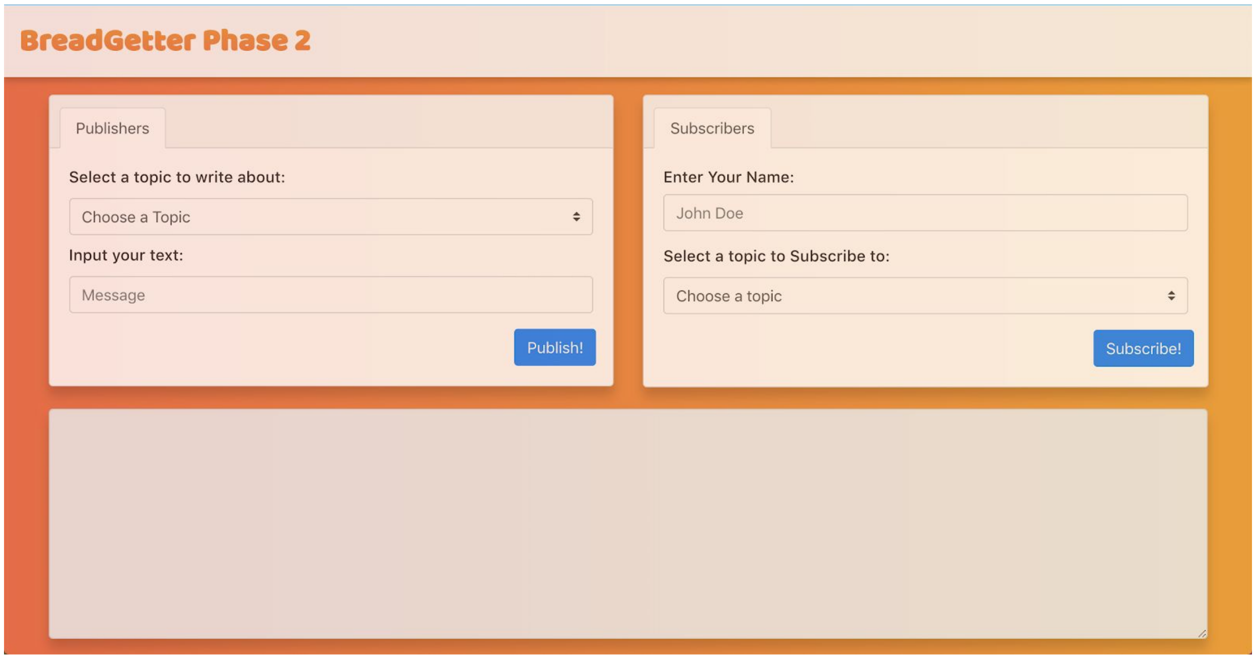


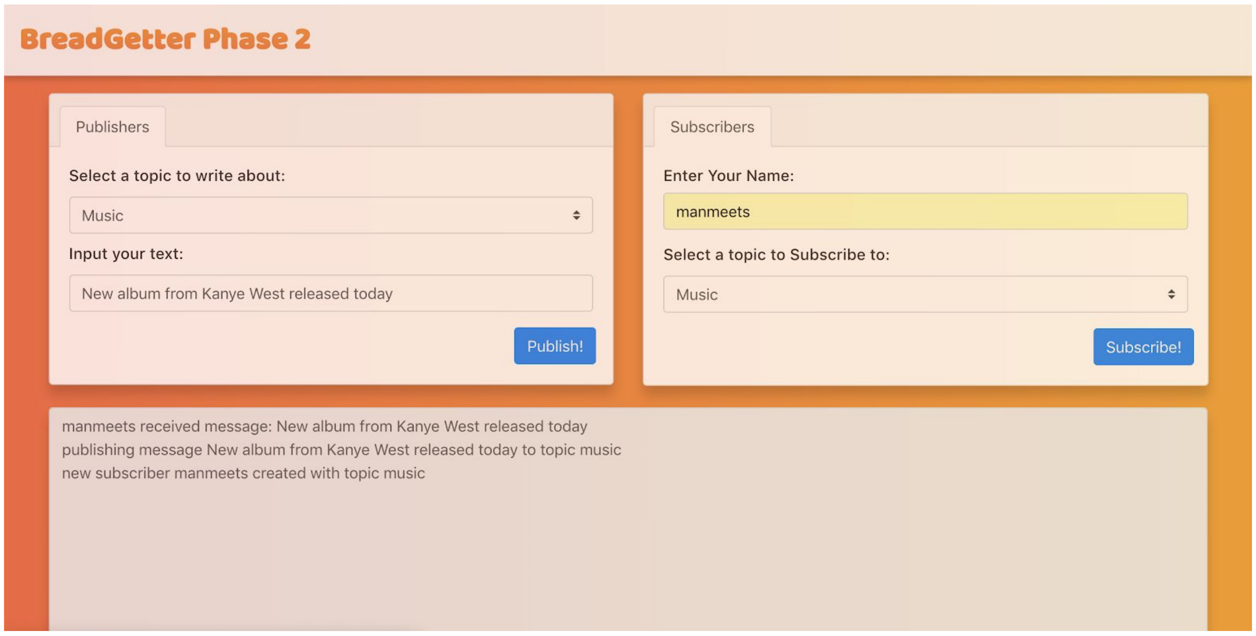
```cpp
#include <iostream>
using namespace std;

int main ()
{
 for (auto i = 0; i < 10; i ++){
        cout << " i is: " << i << "\n";
    }
 return 0;
}
```

```
 i is: 0
 i is: 1
 i is: 2
 i is: 3
 i is: 4
 i is: 5
 i is: 6
 i is: 7
 i is: 8
 i is: 9
```

Phase 2:

The goal of phase 2 was to make a web application that simulates the pub/sub system. We made two sections to separate the publisher from the subscriber. The subscriber window has a topic dropdown and an enter name input. The publisher window has a topic dropdown and a textarea for the publisher to input something about the topic. There is a read only output box that updates the viewer whenever there is a new subscriber, whenever there is new content from the publisher and if the subscriber receives the information. We use docker to run node.js and expose to port 8081.





```
manmeets received message: New album from Kanye West released today
publishing message New album from Kanye West released today to topic music
new subscriber manmeets created with topic music
```

Phase 3:

Phase 3 was essentially phase 2 emulated three times. We made three separate instances of our phase 2 project, naming each one after a major city in the U.S (Buffalo, Houston, and San Francisco). To achieve the Pub/Sub emulation for each one of these instances and to allow ease of passing data between each one, each city has a publication file. When subscribers want to subscribe to a cities publication, they peak into the cities publication file to grab any new information. This publish/subscribe methodology lets subscribers from each city hear about information from other cities, and get notified when publishers publish to their respective city.