1. Ice breaker:
   a. Connor Troy Hayes
      Favorite ice cream: Cookies & Cream
      Something I'd like to do before September: Go on a trip
   b. Luvneet Singh Bamrah
      Favorite ice cream: Chocolate
      Something I'd like to do before September be able to click 50cps
2. Java and C

Java

a. The source code:

```
public class Helloworld{
   public static void main(String[] args) {
      System.out.println("Helloworld");
   }
}
```

a. Directory listing

```
[ywang92@remotelabm09 ~]$ ls
Helloworld.class  Helloworld.java  lab_9  Quiz_0.txt  src  src2
[ywang92@remotelabm09 ~]$
```

b. Screen shot of outcome:

```
[ywang92@remotelabm09 ~]$ java Helloworld
Helloworld
```

C

a. Source code:

```
#include <stdio.h>
int main(int argc, char * * argv){
   printf("Hello World\n");
   return 0;
}
```

b. Directory listing

```
[ywang92@remotelabm09 ~]$ ls
helloworld    Helloworld.class  helloworld.o  Quiz_0.txt  src2
helloworld.c  Helloworld.java   lab_9         src
```

c. Output

```
[ywang92@remotelabm09 ~]$ ./helloworld
Hello World
```

Explanation

When compiling the java file, the java compiler generated a .class file but the C compiler generated a .o file and an excitable file without suffix.

According to the lecture: "Linker: combine object code with other code (e.g. libraries) needed to produce executable program." So C compiling will generate a executable program. But java compiler generates an intermediate language and then

translated to machine language when running the java program using java command. But C compiler generate a native machine language file so the machine can run it directly.

3. Repeated Digits
   a. Source code:

```
#include <stdio.h>
int main(int argc, char * * argv){
    int value;
    int iErr;
    int count = 0;
    printf("Value to examine: ");
    iErr = scanf("%d",&value);
    if(iErr != 1){
        printf("Unable to read the value\n");
        return 0;
    }else{
        while(value > 0){
            if(value%2 == 1){
                count++;
            }
            value = value/2;
        }
        printf("Number of ones: %d \n",count);
        return 1;
    }
}
```

   b. Directory lising:

```
[ywang92@remotelabm09 ~]$ ls
digitOnes     digitOnes.o  helloworld.c      Helloworld.java  lab_9       src
digitOnes.c   helloworld   Helloworld.class  helloworld.o     Quiz_0.txt  src2
```

   c. Testing

```
[ywang92@remotelabm09 ~]$ ./digitOnes
Value to examine: 52
Number of ones: 3
```

```
[ywang92@remotelabm09 ~]$ ./digitOnes
Value to examine: 123
Number of ones: 6
```

```
[ywang92@remotelabm09 ~]$ ./digitOnes
Value to examine: 66
Number of ones: 2
```

```
[ywang92@remotelabm09 ~]$ ./digitOnes
Value to examine: sadf
Unable to read the value
```