

CSE 8B - Week 8 Discussion Worksheet
Generics and Exception Review

Queue.java

```
1 public class Queue<T> {
2     private int size;
3     private List<T> people;
4
5     public Queue(int size) throws InvalidSizeException {
6         if (size <= 0) {
7             _____;
8         }
9         this.people = new ArrayList<T>();
10        this.size = size;
11    }
12
13    public void add(T person) throws MaxSizeException {
14        if (_____) {
15            _____;
16        }
17        this.people.add(person);
18    }
19 }
```

InvalidSizeException.java

```
1 public class InvalidSizeException extends Exception {
2     private static final String EXCEPT_MSG =
3         "Size must be greater than or equals to zero";
4
5     public InvalidSizeException() {
6         super(EXCEPT_MSG);
7     }
8
9     @Override
10    public String toString() {
11        return EXCEPT_MSG;
12    }
13 }
```

MaxSizeException.java

```
1 public class MaxSizeException extends Exception {
2     private static final String EXCEPT_MSG = "Queue is full!";
3
4     public MaxSizeException() {
5         // Call constructor of parent Exception
6         super();
7     }
8
9     @Override
10    public String toString() {
11        return EXCEPT_MSG;
12    }
13 }
```

Person.java

```
1 public class Person {
2     private String name;
3     public Person(String name) {
4         this.name = name;
5     }
6 }
```

Student.java

```
1 public class Student extends Person {
2     private String PID;
3
4     public Student(String name, String PID) {
5         _____;
6         this.PID = PID;
7     }
8 }
```

Discussion8.java

```
1 public class Discussion8 {
2     private static Queue<Person> queue;
3
4     public static void main(String[] args) {
5         try {
6             queue = new Queue<Person>(-1);
7             queue.add(new Person("Zheng Hao"));
8             queue.add(new Student("Zheng Hao", "A12345678"));
9         }
10
11        catch (_____) {
12            System.out.println("Caught Invalid Size Exception");
13            System.out.println(_____);
14        }
15
16        catch (_____) {
17            System.out.println("Maximum size exceed in the queue");
18        }
19
20        catch (_____) {
21            System.out.println(_____);
22        }
23    }
24 }
```