CSE 1322L Midterm
Spring 2021

- You will use repl.it to write, test, and debug your code during this test.
- **YOU MUST PASTE (Ctrl v) THE COMPLETE PROGRAM CODE INTO THE D2L ANSWER BOX**
    - **Paste all classes, methods, attributes and includes/uses statements into the D2L answer box below each question. We only grade what you put into D2L, nothing in repl.it will be graded.**
    - **Do not paste the URL of the repl.it.**

- All answers must be your own, without the assistance of others.
- While taking this test you may not use any resources. This includes but is not limited to:
    - You cannot converse or listen to anyone while taking the test.
    - You cannot use electronics of any kind, including cell phones, tables, other computers, earbuds, headphones, calculators or watches.
    - No paper of any kind, including scratch paper, notes, or book.
    - You cannot use any resources from the internet other than the repl.it we provide
- You must remain in view of the camera with adequate lighting for the duration of the testing period. The camera should be centered on your face so that the monitoring software can detect your face during the test.

- Anyone who violates these rules will receive a 0 on this test.

- You will only have one (1) attempt to take the test, make sure you can commit to the full amount of time as there is no stopping the timer for any reason.
- You will have 90 minutes to take this test. Use your time wisely, answer the easiest questions first, come back to the more difficult ones.
- **If you are in a Java section (WJ1, J01-5) you must write in Java. If you are in a C# section (W#1, #01-04) you must write in C#. What you turn in must compile**.
- Partial credit will be awarded where appropriate.

Name: _____

KSU ID: _____

Date: _____

Question 1 [20 points]:
Using repl.it, write a class called PlayingCard. A playing card has a suite (string) which will be either Clubs, Diamonds, Hearts or Spades. And a value (string) which will be either A, 2, 3, 4, 5, 6, 7, 8, 9, 10, J, Q or K.

Add a constructor which takes in a suite and value and sets them in the object.

Override toString (Java) or ToString (C#) so it returns [value] of [suite]. For example: “A of Hearts” or “3 of Spades”.

Paste (ctrl v) all your code from repl.it into this box:

Question 2 [25 points]:
Begin with the following code, and the class you defined in #1 (you can assume it works even if you couldn't code #1):

Java

```
import java.util.ArrayList;
import java.util.Random;

class Main {
 public static void main(String[] args) {
   Random myrand = new Random();

   String[] suites =
{"Clubs","Diamonds","Hearts","Spades"};
   String[] values =
{"A","2","3","4","5","6","7","8","9","10","J",
"Q","K"};

    //Insert code here
  }
}
```

C#

```
using System;
using System.Collections.Generic;

class MainClass {
 public static void Main (string[] args) {
   Random myrand = new Random();

   string[] suites =
{"Clubs","Diamonds","Hearts","Spades"};
   string[] values =
{"A","2","3","4","5","6","7","8","9","10","J",
"Q","K"};

    //Insert code here
  }
}
```

Add code to do the following things:

1) Create an ArrayList (java) or List (C#) called Deck of PlayingCard (the Class you defined in the previous question)
    a) You will put an object of type PlayingCard into each cell of the ArrayList/List.
    b) The first PlayingCard should be an "A of Clubs", ie, it's value should be A, it's suite should be Clubs. Next add a "2 of Clubs", "3 of Clubs", "4 of Clubs" … "Q of Clubs" … "K of Clubs".
    c) Repeat step b above for Diamonds, Hearts and Spades.
    d) Thus you'll add all 13 values (A, 2, 3, 4, 5, 6, 7, 8, 9, 10, J, Q, K) of each of the 4 suites, so you should end up adding 52 PlayingCard objects to the ArrayList.
    e) **Hint**: You should use a nested loop to do this step
2) Next, you will create a "hand" of 5 unique cards in a new ArrayList/List.
    a) You'll do this by picking a random number between 0 and 51 using:
        C#: `int pos=myrand.Next(51);`
        Java: `int pos=myrand.nextInt(51);`
    b) If you've not picked that number before, you'll add the card that is in the Deck ArrayList/List at that position you just randomly picked to the Hand ArrayList/List
    c) You'll have to keep track of which numbers you've picked so you don't accidentally add the same card twice.
3) Finally, print out the 5 cards of the hand ArrayList/List. You must use the toString (Java) or ToString (C#) override you put in the class in the last question.

Answer for #2. Paste (ctrl v) all your code from repl.it into this box:

Question 3 [15 points]:

Create an interface called IPlayable. It should have 4 methods

1) start()
2) stop()
3) pause()
4) unpause()

Each should take in a song name (string) and return nothing.

Paste (ctrl v) all your code from repl.it into this box:

Question 4 [15 points]:

Create a MusicPlayer class which implements IPlayable (from the previous question).

1) Implement start(). Have it print “I’m playing”
2) Implement stop(). Have it print “I’m stopping”
3) Define pause() and unpause() as abstract methods.

Paste (ctrl v) all your code from repl.it into this box:

Question 5 [15 points]:

Create a PortableMusicPlayer class which extends MusicPlayer (from the previous question).

1) Implement pause - have it print out “I’m Pausing”
2) Implement unpause - have it print out “I’m unpausing”

Paste (ctrl v) all your code from repl.it into this box:

Question 6 [10 points]:

Write the statement to instantiate 2 objects of type PortableMusicPlayer:

Paste (ctrl v) all your code from repl.it into this box: