**Module: Programming - Level 8 Year 1**

**CA Weighting: 6% Upload Due Date: Sun Dec 8th @ 9pm**

***Develop a menu-driven Java application allowing the user to choose from and repeatedly play a number of games.***

**Option#1 – Dice game against the computer (10%)**

Each “round” simulates a dice throw for player and a dice throw for computer. Dice with highest value wins. Equal value means a draw. Play multiple rounds. Show statistics after a number of rounds.

**Option#2 – Dice game between two players (10%)**

Each round allows a pair of players to guess a dice value. The player that guesses the computer generated dice value wins the round. Show statistics after a number of rounds.

**Option#3 - Guess the random number (30%)**

1. Computer generates a random number [1, 20] and user tries to guess the number.
2. Allow user multiple attempts until the correct number is entered.
3. Limit the number of player guesses allowed before ending a round.
4. Allow different ranges of random numbers.
5. Give player “hints” to help them guess the number (e.g. based on higher or lower than target OR how close the player’s guess was to the target number OR some matching digits found etc.)
6. Produce statistics (e.g. average number of attempts per round before target guessed correctly, number of rounds where user didn’t guess correctly etc.)

**Option#4 – Play a simple card game e.g. BlackJack or “21” (30%)**

You MUST document the rules for your game

**General & Additional (20%)**

1. Menu driven application well written, formatted, documented, tested and working.
2. Good and appropriate use of programming constructs as outlined in class (e.g. variables, constants, loops, conditions, simple methods).
3. Any additional functionality or advanced processing – *documented clearly*.

**Please note:**

* Upload **a single file** **(using your own names)** to the Moodle link by the given deadline.
* An interview on the project will take place during week Dec 9th – Dec 13th
* Plagiarised assignments will receive a mark of zero. A sample “menu-driven” program will be developed in class for you to use. Any other code submitted must be your own work.
* Non-attendance at interview will result in grade of 0% for the project.
* Dates and times for interview will be arranged and posted in Moodle.