# CP5639 Assessment 1 Planning the Ultimate Ninja Battle Combat Game

## Task

You are to plan a computer game as outlined in the following description. Use what you have learned in class, including simple functions, selection and repetition. Assignment 2 will cover the implementation of this program in Python.

**See the last section of this document for sample output showing how the program should run.**

## Program Features:

**Short description:**

You are required to prepare a plan for a game of Ultimate Ninja Battle Combat!!! (The exclamation points are important ☺). The player will be fighting against the computer, and the winner gets bragging rights. You will create a plan for a game played between the player and the computer. The player will choose a move, and so will the computer, and the winner will be announced. You will be using the problem solving tools covered in the first few weeks of semester to produce IPO charts, Condition/Action tables, Loop Outlines and a flowchart in Flowgorithm.

The player will choose their move from a list of six possibilities, and the computer will randomly choose a move as well. Once the player has chosen their move the computers move will be revealed, and the winner declared. The possible moves are:

1. Punch of Fury
2. Kick of Punishment
3. Sword of Justice
4. Shuriken of Vengeance
5. Nunchucks of Anger
6. Knife of Freedom

On the next page you will find the chart showing how each move performs against the others.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Computer’s Move** | | | | | |
|  |  | **Punch of Fury** | **Kick of Punishment** | **Sword of Justice** | **Shuriken of Vengeance** | **Nunchucks of Anger** | **Knife of Freedom** |
| **Player’s Move** | **Punch of Fury** | Tie No Winner | Player Loses | Player Loses | Player Wins | Player Wins | Player Loses |
| **Kick of Punishment** | Player Wins | Tie No Winner | Player Loses | Player Loses | Player Wins | Player Loses |
| **Sword of Justice** | Player Wins | Player Wins | Tie No Winner | Player Loses | Player Loses | Player Wins |
| **Shuriken of Vengeance** | Player Loses | Player Wins | Player Wins | Tie No Winner | Player Loses | Player Wins |
| **Nunchucks of Anger** | Player Loses | Player Loses | Player Wins | Player Wins | Tie No Winner | Player Loses |
|  | **Knife of Freedom** | Player Wins | Player Wins | Player Loses | Player Loses | Player Wins | Tie No Winner |

Once the player chooses their move your game will check the computers move and see who wins. It will then announce the winner, or a tie, and the game will end.

**Detailed Instructions:**

1. Ask the player’s name and welcome them to the game using their name.
2. Show game menu  
     
   **(I)nstructions  
   (P)lay game  
   (Q)uit game**  
   If the player chooses ‘I’ display the following instructions:  
     
   **Welcome to Ultimate Ninja Battle Combat!!! You will be fighting against the computer, and the winner gets bragging rights. For each turn you will be asked to use one of the 6 attacks below:  
     
   (1) Punch of Fury**

**(2) Kick of Punishment**

**(3) Sword of Justice**

**(4) Shuriken of Vengeance**

**(5) Nunchucks of Anger**

**(6) Knife of Freedom.  
  
Choose wisely.**

1. If the player chooses ‘P’ from the menu then ask the player to choose an attack.  
     
   **(1) Punch of Fury  
   (2) Kick of Punishment  
   (3) Sword of Justice  
   (4) Shuriken of Vengeance  
   (5) Nunchucks of Anger  
   (6) Knife of Freedom.**
2. Once the player has entered a number they display the message “You chose: ” and their move. Make sure you use the name of the move not just the number they entered. If they entered anything other than a number between 1 and 6 then display an error message and ask the user for their move until they enter a valid value.
3. Display the message “The computer chose: ” and the computer’s move.
4. Display the result of the combat, showing that either the computer or the player won.
5. If the player chooses ‘Q’ from the menu then display the quit message “**Thank you for playing Ultimate Ninja Battle Combat!!!**”. After every menu option other than ‘Q’ the program will return to the menu.
6. If the user enters anything other than the options above then display an error message.

# Planning:

You are to divide your solution into functions, following the principles shown in class. These may involve one for each menu option (other than Quit) as well as functions for parts of the program (e.g. a calculating the total ticket price could be implemented as a function). For each function you are to provide an IPO chart listing all variables which are needed for your solution. In cases where selections are necessary you must include a suitable condition action table directly below the IPO chart. Follow the sample solution provided as a guide.

You also need to provide either an algorithm in pseudocode for each function, being sure to clearly indicate input and output variables for each.

In addition, you need to create a Flowgorithm flowchart that shows how the program would operate.

You may show your assignment to your tutor during practical time to get comments or suggestions. It is important to note that you can only get help from staff in practical time after your prac work is finished.

# General Principles:

In this assignment, you will be focusing on basic planning using selections, repetition and functions.

Use the techniques and patterns that you have learned and seen demonstrated in class.

* Make use of named constants (named in all caps) where appropriate. You should be able to modify these constants to adjust the values they hold. This is one of the most important aspects of this assignment, so consider carefully how to use constants. Remember to use your constants everywhere you can.
* Note that menu choice and other character selection should handle upper and lower case letters.
* You also must make sure that any functions that get input from the user do error checking to ensure that the input is within the expected range (1-6 etc).

# Submission:

Hand in (Submit on LearnJCU):

* + a MS Word (.docx) or PDF (.pdf) file containing all of your planning.
  + a Flowgorithm file with your planned structure – should be able to be run
* Please name the file like: **FirstnameLastnameA1.docx** *or* **FirstnameLastnameA1.pdf**
  + e.g. if your name were Miles Davis, the filename would be MilesDavisA1.docx Submit your single by uploading it on LearnJCU under Assessment.

# Due:

Submit your assignment bythe date and time specified on LearnJCU.

Submissions received after this date will incur late penalties as described in the subject outline.

# Integrity:

The work you submit for this assignment must be your own. You are allowed to discuss the assignment with other students and get assistance from your peers, but you may not do anyone else’s work for them and you may not get anyone else to do any part of your work. Programs that are detected to be too similar to another student’s work will be dealt with promptly according to University procedures for handling plagiarism.

If you require assistance with the assignment, please ask **general** questions on the LearnJCU discussion board, or get **specific** assistance with your own work by talking with your lecturer or tutor.

# Marking Scheme:



Example of game play. Game Output is in **Bold.**

**Welcome to Ultimate Ninja Combat!!!**

**What is your name?**

Josh

**Welcome Josh.**

**(I)nstructions  
(P)lay game  
(Q)uit game**

I

**Welcome to Ultimate Ninja Battle Combat!!! You will be fighting against the computer, and the winner gets bragging rights. For each turn you will be asked to use one of the 6 attacks below:  
  
(1) Punch of Fury**

**(2) Kick of Punishment**

**(3) Sword of Justice**

**(4)Shuriken of Vengeance**

**(5)Nunchucks of Anger**

**(6) Knife of Freedom.  
  
Choose wisely.**

**(I)nstructions  
(P)lay game  
(Q)uit game**

Play

**I did not understand that response. Please choose either I, P or Q.**

**(I)nstructions  
(P)lay game  
(Q)uit game**

P

**Please choose an attack to use.**

**(1) Punch of Fury  
(2) Kick of Punishment  
(3) Sword of Justice  
(4) Shuriken of Vengeance  
(5) Nunchucks of Anger  
(6) Knife of Freedom.**

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**I did not understand that response. Please choose 1-6.**

2  
  
**You chose: Kick of Punishment.**

**The computer chose: Shuriken of Vengeance.**

**Unfortunately you have been defeated.**

**(I)nstructions  
(P)lay game  
(Q)uit game**

Q

**Thank you for playing Ultimate Ninja Battle Combat!!!**