

Create – Applications From Ideas

Written Response Submission Template

Please see [Assessment Overview and Performance Task Directions for Student](#) for the task directions and recommended word counts.

Program Purpose and Development

2a)

Blackjack is an online game of 21 I made in Python. The purpose of this program is to help users develop critical thinking skills and practice concentration through an intense game. The program fulfills this purpose by dealing out a set of cards and prompting the user to make a decision based on the value of their hand, prompting them to think ahead and then allowing them to review their past actions and keep score of the game. This video illustrates the above features and shows one full game of 21 and how after the user is given a hand they must decide to hit or stand and at the end the game decides who wins based on the basic rules of 21. Additionally, the video shows how the program finally prints out who won the round and the total score while also allowing the user to review their decisions.

2b)

An incremental process was when I developed the possible outcomes of the game as the player can either bust, get 21 or have less than the computer so I implemented one possible outcome at a time to ensure there were not overlapping issues when I finished. Additionally an incremental process is an if statement that issues a new card until until the user reaches or exceeds 21. An iterative process was when I added a loop for the computer's play by using `comp.append(rc(cards))` to determine how the computer will generally play, thus eliminating the need to set a difficulty or reprogram the dealer every time. Both of these processes were completed independently. A difficulty faced was when I had to find out a way to make my random number generator run over and over again until a winner was decided. I resolved this by using a `while True:` statement to ensure that the program would not stop running until one side won. Additionally, a difficulty was when I needed to make the program print out the total score and I resolved this issue by using `%d`. Both of these difficulties were resolved independently.