BEGIN MAIN

Initialise GAME object: //the application is created as an object, so local variables of the application can be accessed across functions, without utilising global variables

BEGIN PlayMastermind:

Initialise GAME.difficulties with: //as a dictionary

Easy corresponding to 10

Medium corresponding to 8

Hard corresponding to 5

Call InputUserInfo

Call GenerateCombination

END PlayMastermind

BEGIN InputUserInfo:

Print Initial Interface

Input WantsToPlay

IF WantsToPlay = True:

Input PlayerName to GAME.PlayerName //GAME.x refers to variables attributed to the GAME object

Input PlayerDifficulty to GAME.PlayerDifficulty

IF WantsToPlay = False:

Goto END

ENDIF

END InputUserInfo

BEGIN GenerateCombination:

Access colours.txt

Input colours.txt to ColoursAvailable //created as an array Randomly select 4 elements from ColoursAvailable //repetitions accepted

Set GAME.CorrectCombination to 4 elements

END GenerateCombination

BEGIN PlayGame:

Print Initial Interface

Set GuessNum to 0

Set GuessCorrect to 0

Set GuessExpired to 0

WHILE GuessCorrect ≠ 1 and GuessExpired ≠ 1:

Input guess to Guess

Add 1 to GuessNum

IF Guess = GAME.CorrectCombination:

Set GuessCorrect to 1

ELSE:

Set RightColourRightPlace to 0

Set RightColourWrongPlace to 0

FOR i = 0 to length of CorrectCombination:

FOR j = 0 to length of Guess:

IF Guess[j] = CorrectCombination[i] and i = j:

Add 1 to RightColourRightPlace

ELSEIF Guess[j] = CorrectCombination[i]:

Add 1 to RightColourWrongPlace

ENDIF

ENDFOR

ENDFOR

IF RightColourRightPlace > 0: //if any pegs are in the right colour right place

Print B, (RightColourRightPlaces) times //symbolising the number of black pegs the player ‘receives’

ENDIF

IF RightColourWrongPlace > 0:

Print W, (RightColourWrongPlace) times //symbolising the number of white pegs the player ‘receives’

ENDIF

IF GuessNum = GAME.Difficulties[GAME.PlayerDifficulty]:

//If the current guess number is equal to the maximum guess (determined by the difficulty)

Set GuessExpired to 1

ENDIF

ENDIF

END WHILE

IF GuessExpired = 1:

Print Game Over Screen

ENDIF

IF GuessCorrect:

Print Game Victory Screen

ENDIF

END PlayGame

END MAIN