A·P·U
ASIA PACIFIC UNIVERSITY
OF TECHNOLOGY & INNOVATION

Introduction to Visual and Interactive Programming

CT803-4-0-OIVIP

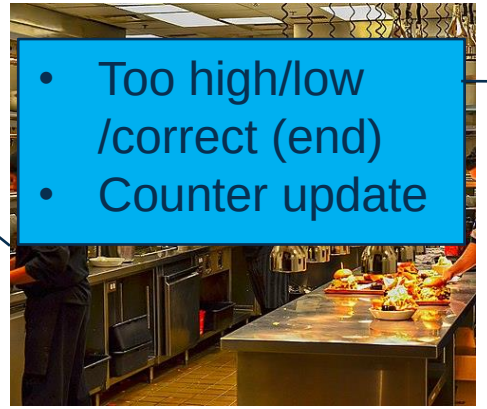
Lab 2

Computational Thinking and Program Planning

Recap: Week 2 Exercise

- **Create a guessing game:** the sprite will greet the user and asks the user to guess a random number between 1 and 100, and the program gives feedback on whether the guess is too high, too low, or correct. The user can only guess __ number of times (decided by the programmer) so the program needs to keep track of how many guesses the user has made. The game ends when the user guesses the correct number or runs out of guesses.

Wireframe: quick sketch of main steps (summary)

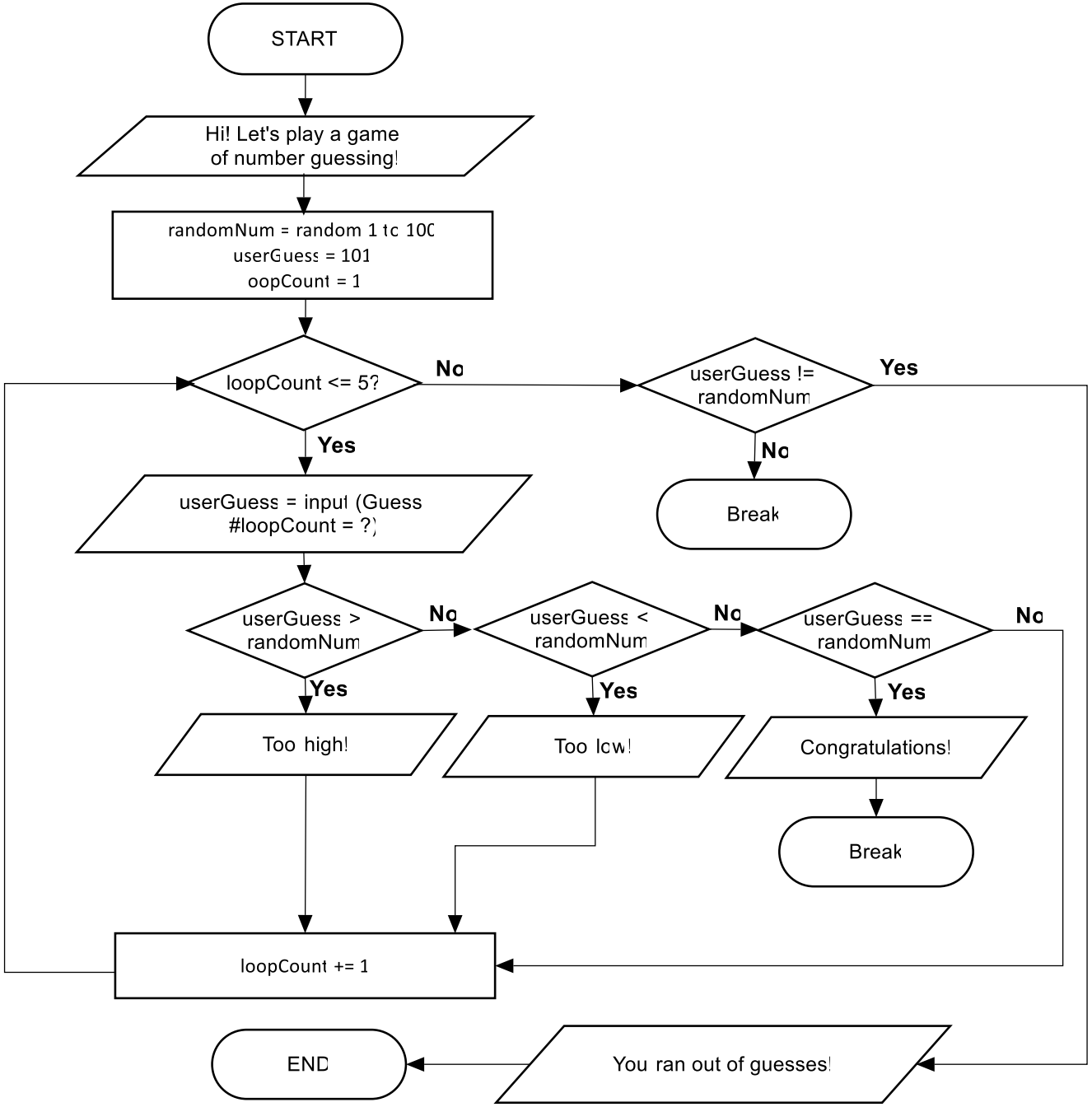


Pseudocode: detailed recipe

When green flag clicked

Greet the user and explain the game
randomNum = random number between 1 and 100
userGuess = 101; loopCount = 1
while loopCount <= 5: # user can only guess up to 5 times
  Ask for guess no. loopCount and store answer in userGuess
  if userGuess > randomNum:
    Display "Too high!" message
  if userGuess < randomNum :
    Display "Too low!" message
  if userGuess == randomNum :
    Display "Congratulations! You guessed the number!" and end the game
  increase loopCount by 1
if userGuess != randomNum: Display "Sorry, you ran out of guesses!"
End the program

Flowchart: steps in diagram form (like a map)



Storyboard: steps in pictures (like a comic book)

Scene	Description
1	A sprite pops up and says, "Welcome! Guess a number between 1 and 100!"
2	The user types a number into a text box.
3	The sprite analyzes the guess.
4a	The sprite frowns and says, "Too high! Go lower."
4b	The sprite looks surprised and says, "Too low! Aim higher."
4c	The sprite cheers and says, "You got it! Play again?"
5	The counter displays how many guesses the user has left.
6	The sprite shakes its head and says, "Out of chances! Play again?"

Exercise!

Plan a Snap! program for a pizza party

- The program will ask how many people will be attending
- The program will then ask each person on their favourite topping
- The topping with the most number of “votes” will be the topping for the pizza in the party

Write the pseudocode for solving this problem and create a flowchart

Then, start coding!