

COMPUTER SCIENCE J277



2 Exams - 50% each end of Y11

Content Overview

J277/01: Computer systems

This component will assess:

- 1.1 Systems architecture
- 1.2 Memory and storage
- 1.3 Computer networks, connections and protocols
- 1.4 Network security
- 1.5 Systems software
- 1.6 Ethical, legal, cultural and environmental impacts of digital technology

J277/02: Computational thinking, algorithms and programming

This component will assess:

- 2.1 Algorithms
- 2.2 Programming fundamentals
- 2.3 Producing robust programs
- 2.4 Boolean logic
- 2.5 Programming languages and Integrated Development Environments

Assessment Overview

Written paper: 1 hour and 30 minutes
50% of total GCSE
80 marks

This is a non-calculator paper.

All questions are mandatory.

This paper consists of multiple choice questions, short response questions and extended response questions.

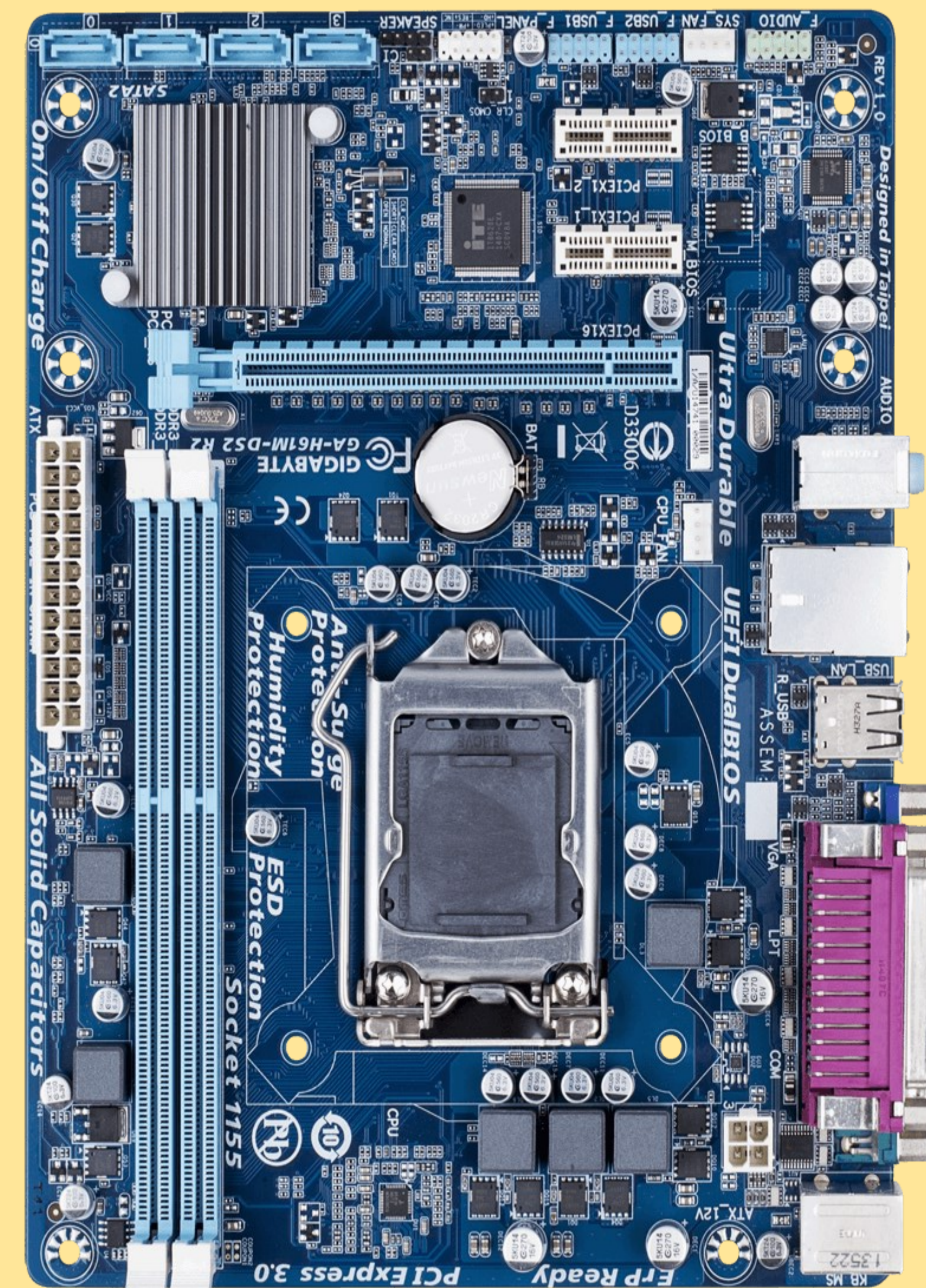
Written paper: 1 hour and 30 minutes
50% of total GCSE
80 marks

This is a non-calculator paper.

This paper has two sections: Section A and Section B. Students must answer both sections.

All questions are mandatory.

In Section B, questions assessing students' ability to write or refine algorithms must be answered using **either** the OCR Exam Reference Language **or** the high-level programming language they are familiar with.



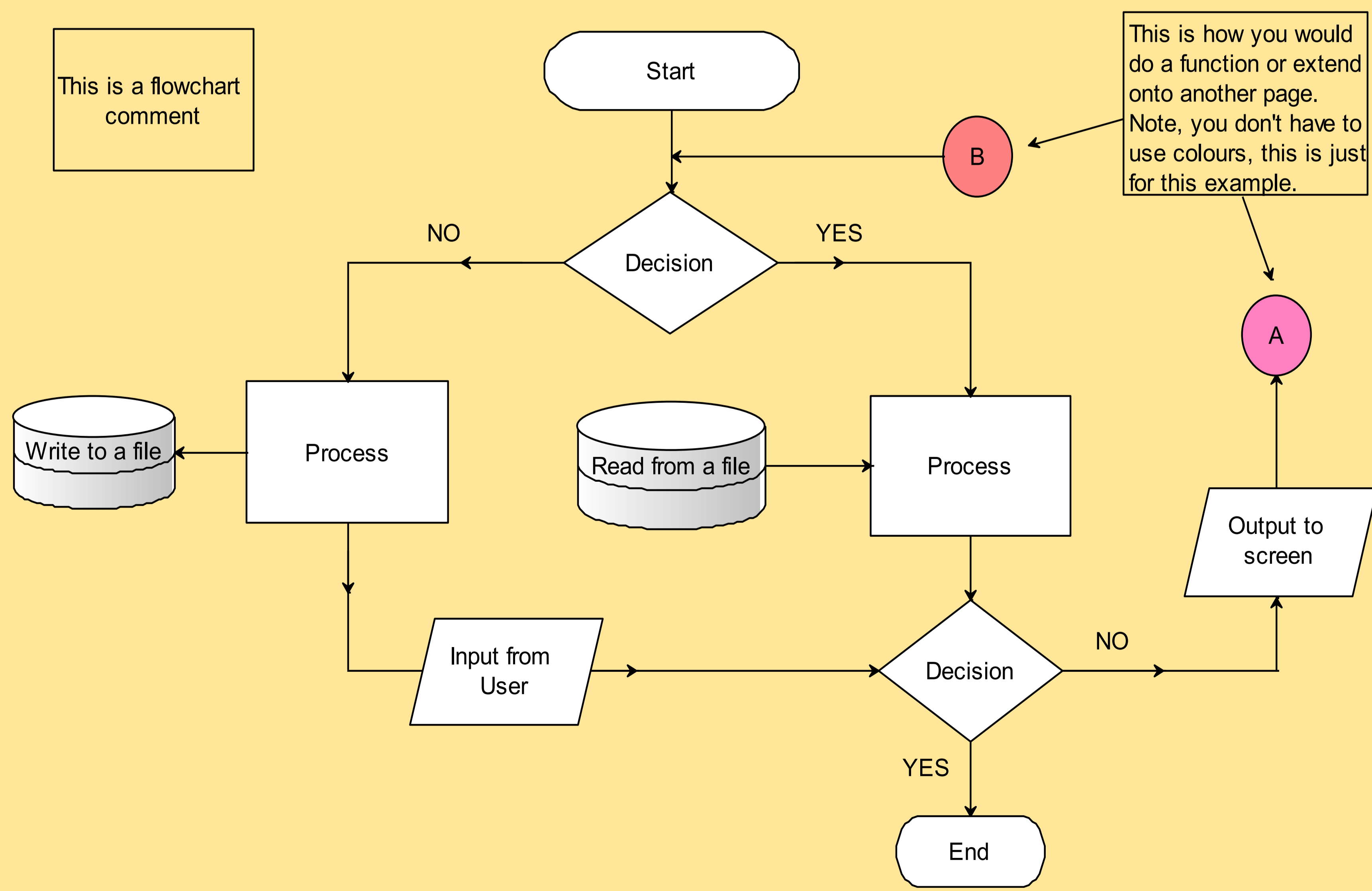
```
while True: #main program loop - until user decides to finish
    user_bet = int(input("\nEnter your bet = £"))
    if user_bet >= Min_Bet and user_bet <= Max_Bet: #user bet ok?
        user_guess = int(input("What do you think the Computer will 'guess' = "))
        if user_guess >= Min_Guess and user_guess <= Max_Guess: #user guess ok?
            comp_guess = ri(Min_Guess, Max_Guess) #generate random 'comp' guess

            #next 2 lines are for testing 'win' scenarios - remove as req.
            #user_guess = 17 #testing remove when req. force user guess
            #comp_guess = 17 #testing remove when req. force computer guess

            if user_guess == comp_guess: #test if user guess is a winner
                print("Computer also guessed",user_guess,"- you win!")
                Bonus_Factor = 0 #variable to store accumulated bonus
                if user_guess % 2 == 0: #even match (Bonus_A)
                    Bonus_Factor += Bonus_A
                if user_guess % 10 == 0: #divisible by 10 match (Bonus_B)
                    Bonus_Factor += Bonus_B
                if user_guess < 5: #less than 5 match (Bonus_C)
                    Bonus_Factor += Bonus_C
                if Bonus_Factor == 0: #no Bonus but still a match
                    Bonus_Factor = Win_No_Bonus
                print("Amount won = ",f"{:.2f}".format(user_bet * Bonus_Factor))
            else: #user guess did not match, print no win message
                print("No Win - you didn't guess correctly")
            else: #user guess not ok
                print("Guess must be",str(Min_Guess)+"-"+str(Max_Guess),"inc.")
            else: #user bet not ok
                print("Bet must be £"+str(Min_Bet)+"-£"+str(Max_Bet),"inc.")

            another_go = input("Another go?... 'Y' to continue: ").upper()
            if another_go != "Y":
                break #user did not type 'Y' or 'y' so exit main loop and finish

input("End Program <Press Enter>") #end prog msg & console mode 'stopper'
```



Top reasons to study computer science: - It is everywhere. - Expertise in Computer Science enables you to solve complex, challenging problems. - Computer Science enables you to make a positive difference in the world. - Computer Science offers many lucrative careers. - Computer Science jobs are here to stay, regardless of where you are located. - Expertise in Computer Science helps even if your career is something else. - Computer Science offers great opportunities for true creativity and innovativeness. - Computer Science has space for both collaborative work and individual effort. - Computer Science is an essential part of well-rounded academic preparation. - Future opportunities are without boundaries.