Number Guessing Game – Answer (Question 4)

Below is a complete solution for the Number Guessing Game using Python with object■oriented programming.

Python Code:

```
import random

class NumberGuessingGame:
def __init__(self, low=1, high=100, max_attempts=None):
self.low = low
self.high = high
self.max_attempts = max_attempts
self.reset()

def reset(self):
self.secret = random.randint(self.low, self.high)
self.attempts = 0
self.won = False

def guess(self, value):
if not isinstance(value, int):
return "invalid", f"Please enter an integer between {self.low} and {self.high}."

if value < self.low or value > self.high:
return "out_of_range", f"Guess out of range. Choose between {self.low} and {self.high}."

self.attempts += 1

if value == self.secret:
self.won = True
return "correct", f"Correct! You guessed the number {self.secret} in {self.attempts} attempt(s)."
elif value < self.secret:
return "low", "Too low. Try a higher number."
else:
return "high", "Too high. Try a lower number."

def is_over(self):
if self.won:
return True
if self.max_attempts is not None and self.attempts >= self.max_attempts:
return True
return False

def play_cli():
print("Welcome to Number Guessing Game!")
game = NumberGuessingGame(low=1, high=50, max_attempts=10)
print(f"I'm thinking of a number between {game.low} and {game.high}.")
```

```
while not game.is_over():
try:
user_input = input("Enter your guess: ").strip()
guess = int(user_input)
except ValueError:
print("Invalid input. Enter an integer.")
continue

status, message = game.guess(guess)
print(message)
if status == "correct":
break

if not game.won:
print(f"Game over. The number was {game.secret}.")
```