Introduction to Programming

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Lab 3 Solution 1 (initialisation)

```javascript
var secret_answer = Math.round( (Math.random() * 99) +1 );
var guess = -1;
```
Lab 3 Flowchart 1 (initialisation)

Alternatively, we can put both statements into one box:

- setup secret

setup initial guess (garbage)
while( guess != secret_answer ){
    guess = prompt("Guess a number 1-100");
    if( guess == secret_answer ) {
        document.write
            ("<p>Yes. Yes, you got it!</p>");
    }else{
        if( guess < secret_answer ){
            alert("Wrong! Guess higher next time!");
        }else{
            alert("Wrong! Guess lower next time!");
        }
    }
}
Flowchart for Wrong Answer

WRONG-ANSWER

Yes: guess < answer

No:
- alert “higher”
- alert “lower”
Flowchart to Handle Answer

HANDLE-ANSWER

guess == answer

Yes

alert "Winner"

No

WRONG-ANSWER
Flowchart Summary: sequencing, if

stmt1; stmt2; stmt3;

if (cond) {
    then-stmt
} else {
    else-stmt
}
Lab 3 Flowchart 1 (main loop)

```
       guess != answer
     _________      _________
   No  |            |  Yes  |
   |          |            |
  |            |            |
  |            |            |
  |            |            |
get guess from user

HANDLE-ANSWER
```
Flowchart Summary: while

```java
while( cond ) {
    loop-body
}
```
Lab 3 Solution 2 (initialisation)

```javascript
var secret_answer = Math.round( (Math.random() * 99) +1 );
var guess = -1;
var remaining_tries = 6;
```
Lab 3 Flowchart 2 (initialisation)

- setup secret
  - setup initial guess (garbage)
    - setup tries left
Lab 3 Solution 2 (main loop)

```javascript
while( (guess !== secret_answer) && (remaining_tries > 0) ){
    guess = prompt("Guess a number 1-100");
    remaining_tries = remaining_tries-1;
    if( guess == secret_answer ) {
        document.write("<p>Yes. Yes, you got it!</p>" );
    }else{
        if( guess < secret_answer ){
            alert("Wrong! Guess higher next time!");
        }else{
            alert("Wrong! Guess lower next time!");
        }
    }
}
```
Lab 3 Flowchart 2 (main loop)

1. If `guess != answer && tries > 0`, go to get guess from user. Otherwise, go to HANDLE-ANSWER.
2. Subtract 1 from tries.
3. Go back to step 1.
if( guess == secret_answer ) {
  document.write("<p>You win with "+remaining_tries+" left")
} else {
  document.write("<p>You lose, I wanted: "+secret_answer)
}
Lab 3 Flowchart 2 (final report)

```
- guess == answer
- Yes
- alert "Winner"
- show tries left
- No
- alert "Loser"
- show secret
```