

LAB 6

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1. INSERTING COMPUTER CODE

1.1. **The verbatim environment.** The code below is an implementation of the 'Higher and Lower' game.

an implementation of the game of Higher or Lower

```
import random
```

```
number = random.randint(1, 100)
```

```
print()
```

```
print("Higher or lower?")
```

```
print("-----")
```

```
print()
```

```
print("Try to guess the number I've thought of between 1 and 100.")
```

```
attempts = 0
```

```
guess = 0
```

```
while guess != number:
```

```
    attempts += 1
```

```
    if attempts > 7:
```

```
        print("Hurry up!")
```

```
    attempt_number = str(attempts)
```

```
    guess = int(input("Guess " + attempt_number + ": "))
```

```
    if guess > number:
```

```
        print(guess, "is too high")
```

```
    elif guess < number:
```

```

    print(guess, "is too low")

print("Correct! The answer was", guess)
print("You took", attempts, "attempts.")

if attempts > 8 and attempts < 11:
    print("Too slow for my liking!")
elif attempts > 10:
    print("Were you even trying?")

```

You start an enumerated list with `\begin{enumerate}` and end it with `\end{enumerate}`.

1.2. The listings package. The code below is an implementation of the ‘Higher and Lower’ game.

```

1  # an implementation of the game of Higher or Lower
2
3  from random
4
5  number = random.randint(1, 100)
6
7  print()
8  print("Higher or lower?")
9  print("_____")
10 print()
11 print("Try to guess the number I've thought of between
    1 and 100.")
12
13 attempts = 0
14 guess = 0
15
16 while guess != number:
17     attempts += 1
18
19     if attempts > 7:
20         print("Hurry up!")
21
22     attempt_number = str(attempts)
23     guess = int(input("Guess " + attempt_number + ": "))
24
25     if guess > number:
26         print(guess, "is too high")
27     elif guess < number:
28         print(guess, "is too low")
29
30 print("Correct! The answer was", guess)
31 print("You took", attempts, "attempts.")
32

```

```

33 if attempts > 8 and attempts < 11:
34     print("Too slow for my liking!")
35 elif attempts > 10:
36     print("Were you even trying?")

```

1.3. **Including a file of code.** Here is the source code of a file.

```

1  # an implementation of the game of Higher or Lower
2
3  import random
4
5  number = random.randint(1, 100)
6
7  print()
8  print("Higher or lower?")
9  print("-----")
10 print()
11 print("Try to guess the number I've thought of between 1 and
    100.")
12
13 attempts = 0
14 guess = 0
15
16 while guess != number:
17     attempts += 1
18
19     if attempts > 7:
20         print("Hurry up!")
21
22     attempt_number = str(attempts)
23     guess = int(input("Guess " + attempt_number + ": "))
24
25     if guess > number:
26         print(guess, "is too high")
27     elif guess < number:
28         print(guess, "is too low")
29
30 print("Correct! The answer was", guess)
31 print("You took", attempts, "attempts.")
32
33 if attempts > 8 and attempts < 11:
34     print("Too slow for my liking!")
35 elif attempts > 10:
36     print("Were you even trying?")

```

2. MISCELLANY

(1) We define a function as follows:

$$f(x) = \begin{cases} x^2 & \text{if } x \geq 0, \\ 0 & \text{if } x < 0. \end{cases}$$

(2) Here are some dashes.

- (a) The number before 0 is -1 .
 - (b) Their opening hours are 09:00–17:00.
- (3)

$$f(x) := \frac{(x-x_1)(x-x_2)}{(x_0-x_1)(x_0-x_2)}y_0 + \frac{(x-x_0)(x-x_2)}{(x_1-x_0)(x_1-x_2)}y_1 + \frac{(x-x_0)(x-x_1)}{(x_2-x_0)(x_2-x_1)}y_2.$$

- (4) We have $|\sin(x)| \leq 1$ for all $x \in \mathbb{R}$.