LAB 6

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Contents

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

from random import randint

number = 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 import randint
4
5  number = 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  from random import randint
4
5  number = 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 $x \in \mathbb{R}$.