

# IS1110 Tutorial 10 - Revision

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## 1) Variable, Input, and Basic Equations

- a. Ask the user for the price of an item and how many they wish to buy.  
Calculate and print the total cost
- b. Apply a 5% discount to the total, then print the discounted amount

**Expected Output:**

```
Enter item price: 12
Enter quantity: 2
Total cost: 24.0
Discounted total (5% off): 22.8
```

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## 2) Conditionals

- a. Ask the user for their age  
Print whether they are:  
“child” if age < 13  
“teenager” if 13-17  
“adult” if 18+
- b. If the age is below 0 or above 120, print “Invalid age” and stop the question
- c. If the age is valid, also print the year they were born

**Expected Output:**

```
Enter your age: 19
Enter the current year: 2025
You are a adult.
You were born in 2006.
```

```
Enter your age: -5
Enter the current year: 2025
Invalid age
```

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## 3) Strings & Text Processing

- a. Ask the user to enter a sentence  
Count how many spaces it contains and print the result

- b. Replace each space in the sentence with an underscore ("\_") and display the new sentence

**Expected Output:**

```
Enter a sentence: Python is quite fun to learn
Number of spaces: 5
Sentence with underscores: Python_is_quite_fun_to_learn
```

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#### 4) Loops

- a. Ask the user for a number n.  
Use a loop to print all odd numbers from 1 to n (inclusive).
- b. Use a loop to repeatedly ask the user for numbers until they type "stop".  
Add all the entered numbers together and print the total.

**Expected Output:**

```
Enter a number (or 'stop' to finish): 4
Enter a number (or 'stop' to finish): -1
Enter a number (or 'stop' to finish): 10
Enter a number (or 'stop' to finish): stop
Total: 13.0
```

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#### 5) Lists

- a. Ask the user for:
  - their favourite hobby
  - how many years they have been doing it
- b. Use an f-string to print:  
"You have enjoyed <hobby> for <years> years."
- c. Then print a second line where the hobby is shown in uppercase

**Expected Output:**

```
Enter your favourite hobby: guitar  
How many years have you done this hobby? 4  
You have enjoyed guitar for 4 years.  
In uppercase your hobby looks like: GUITAR
```

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## 6) Functions

- Define a function square (n) that returns the square of a number

**Input:**

```
print(square(5))
```

**Expected Output:**

```
25
```

- Define a function that returns:

- “short” if the word length is 3 or less characters
- “medium” if 4-6 characters
- “long” if 7 or more characters

**Input:**

```
print(describe_word("cat"))  
print(describe_word("python"))  
print(describe_word("elephant"))
```

**Expected Output:**

```
short  
medium  
long
```

- Define a function that:

1. Calculates the subtotal (price \* quantity)
2. Adds tax, where tax\_rate is a percentage
3. Returns the final amount

Call the function and print the result to 2 decimal places

```
amount = total_cost(15, 2, 20)
```

Total including tax: €36.00