

# Self Exercise C 1.2

## Q1: Purpose of the `printf()` function in C

- Used to print formatted output to the screen.
- Displays strings, numbers, characters, and other data types.

### Example:

```
#include <stdio.h>

void main() {
    printf("Hello, World!\n");
}
```

## Q2: Significance of escape sequence characters in C

- Represent characters that are not easily typed or displayed.
- Start with a backslash (`\`).

### Examples:

- `\n` - Newline: : Moves the cursor to the beginning of the next line.
- `\t` - Tab: Moves the cursor to the next tab stop.

### Usage:

- Enhance readability and formatting of output.

## Q3: Role of the `\n` escape sequence character in C

- Represents a newline.
- Moves the cursor to the next line.

### Example:

```
printf("Hello, \nWorld!");
```

Output:

```
Hello,  
World!
```

#### Q4: Function of the `\t` escape sequence character in C

- Represents a horizontal tab.
- Adds a tab space in the output.

**Example:**

```
printf("Hello,\tWorld!");
```

Output:

```
Hello,    World!
```

#### Q5: Printing a backslash character `\` using the `printf()` function in C

- Use double backslashes `\\`.

**Example:**

```
printf("This is a backslash: \\");
```

Output:

```
This is a backslash: \
```

#### Q6: Concept of a basic C program with components.

**Components:**

- **Headers:** Included at the beginning of the program using `#include` directives to incorporate standard libraries.

- **main() function:** The entry point of every C program, where the execution starts.
- **Statements:** Inside the main function, performing the actions of the program.

**Example:**

```
#include <stdio.h>

void main() {
    printf("Hello, World!\n");
}
```

### Q7: Importance of the `main()` function in a C program

- **Significance:**
  - Entry point of the program.
  - Execution starts and ends in this function.
- **Functionality:**
  - Contains all executable statements.
  - Manages the overall flow of the program.
- **Role:**
  - Defines what the program will do when run.

### Q8: Including comments in a C program

- **Purpose:**
  - Non-executable parts of the code.
  - Provide explanations or notes for developers.
- **Types:**
  - **Single-line comments:** Start with `//` and continue to the end of the line.
  - **Multi-line comments:** Start with `/*` and end with `*/`.

- **Usage:**

- Enhance code readability and maintainability.

**Example:**

```
// This is a single-line comment
/* This is a
   multi-line comment */
```

### Q9: Purpose of the `#include <stdio.h>` and `#include <conio.h>` directives in a C program

- `#include <stdio.h>`: Includes standard input/output library functions. like `printf()`, `scanf()`, `fgets()`, and more.
- `#include <conio.h>`: Includes console input/output functions (not part of the standard C library, typically used in DOS/Windows environments). like `getch()`, `clrscr()`, `getche()`, and more.
- Note: Use of `<conio.h>` is compiler-specific and not portable across all platforms.

### Q10: Simple C program to display "Hello, World!" followed by a new line

```
#include <stdio.h>

void main() {
    printf("Hello, World!\n");
}
```