

The image shows a screenshot of the Turbo C++ (TC) IDE. The top window is the source code editor, which has a blue background and contains the following C code:

```
#include<stdio.h>
#include<conio.h>
void main()
{
clrscr();
printf("%d\n", 25 & 15 );
printf("%d\n",25|15);
printf("%d\n",25^15);
printf("%d\n",~25);
printf("%d\n",~-25);
printf("%d\n",25<<1);
printf("%d\n",25<<15);
printf("%d\n",25<<16);
printf("%d\n",25>>2);
getch();
}
```

The bottom window is the output console, which has a black background and displays the results of the program's execution:

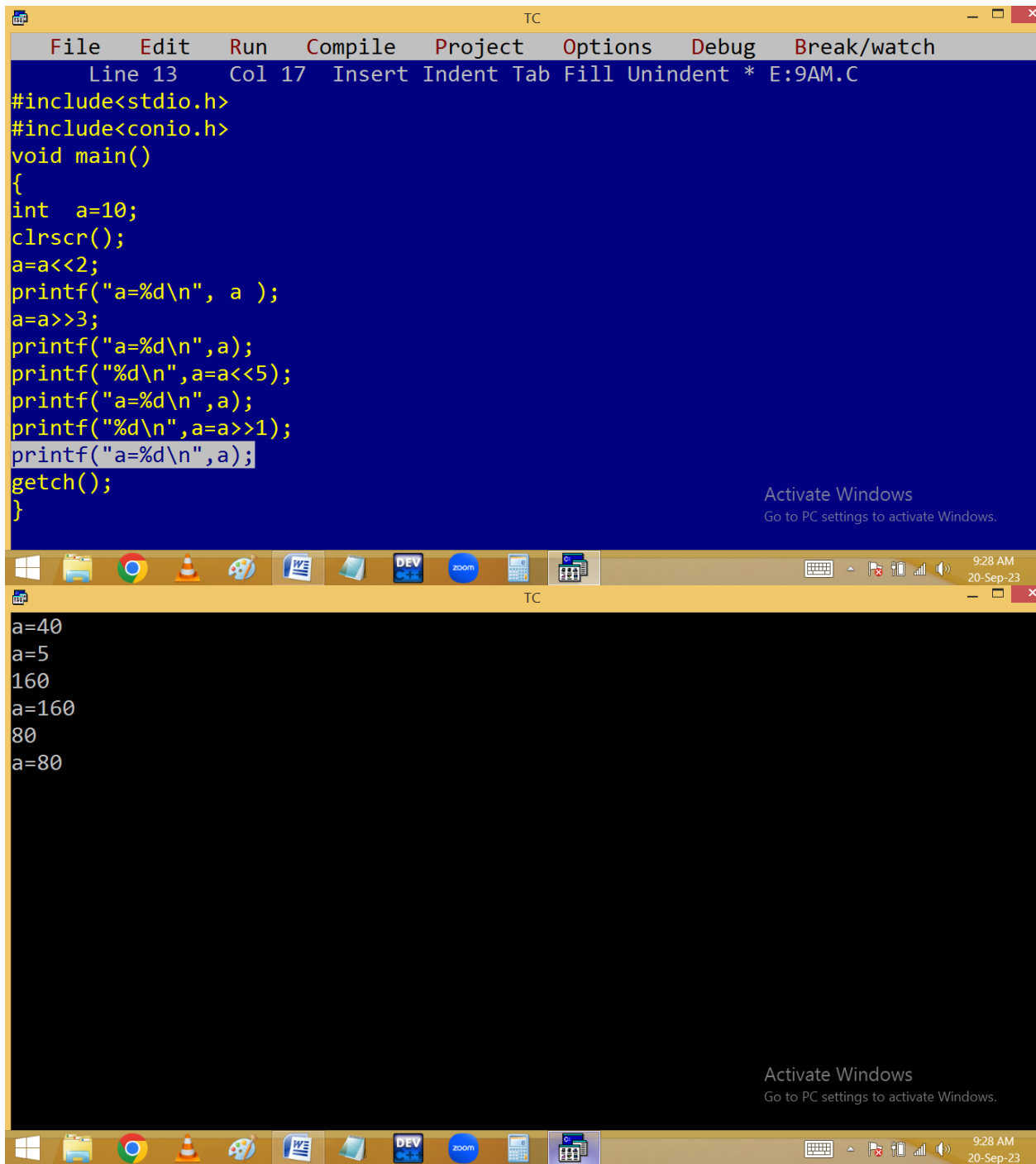
```
9
31
22
-26
24
50
-32768
0
6
_
```

Both windows have a menu bar with 'File', 'Edit', 'Run', 'Compile', 'Project', 'Options', 'Debug', and 'Break/watch'. The status bar at the bottom of each window shows 'TC' and 'E:9AM.C'. The Windows taskbar at the bottom of the screen shows the time as 9:21 AM on 20-Sep-23.

The image shows a screenshot of the Turbo C++ (TC) IDE. The top window is the source code editor, which has a blue background. It contains a C program that includes `<stdio.h>` and `<conio.h>`. The `main` function starts with `int a=10;`, followed by `clrscr();`. Then, it performs a left shift operation `a<<2;` and prints the value of `a` using `printf("a=%d\n", a);`. Next, it performs a right shift operation `a>>3;` and prints the value of `a` using `printf("a=%d\n",a);`. This is followed by a left shift operation `a<<5;` and a print statement `printf("%d\n",a<<5);`. Then, it prints the value of `a` again with `printf("a=%d\n",a);`, followed by a right shift operation `a>>1;` and a print statement `printf("%d\n",a>>1);`. Finally, it prints the value of `a` with `printf("a=%d\n",a);` and ends with `getch();` and a closing brace. The bottom window is the output console, which has a black background. It displays the output of the program: `a=10`, `a=10`, `320`, `a=10`, `5`, and `a=10`. The Windows taskbar at the bottom shows various icons including the Start button, File Explorer, Google Chrome, VLC media player, Paint, Word, a folder, DEV, Zoom, and the Task Manager. The system clock in the bottom right corner indicates the time is 9:27 AM on 20-Sep-23. An "Activate Windows" watermark is visible in the bottom right corner of both the code and output windows.

```
File Edit Run Compile Project Options Debug Break/watch
Line 16 Col 3 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a=10;
clrscr();
a<<2;
printf("a=%d\n", a );
a>>3;
printf("a=%d\n",a);
printf("%d\n",a<<5);
printf("a=%d\n",a);
printf("%d\n",a>>1);
printf("a=%d\n",a);
getch();
} _
```

a=10
a=10
320
a=10
5
a=10
_



The image shows a screenshot of a Turbo C++ (TC) IDE. The top window displays a C program with the following code:

```
File Edit Run Compile Project Options Debug Break/watch
Line 13 Col 17 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a=10;
clrscr();
a=a<<2;
printf("a=%d\n", a );
a=a>>3;
printf("a=%d\n",a);
printf("%d\n",a=a<<5);
printf("a=%d\n",a);
printf("%d\n",a=a>>1);
printf("a=%d\n",a);
getch();
}
```

The bottom window shows the output of the program:

```
a=40
a=5
160
a=160
80
a=80
```

Both windows include a taskbar at the bottom with various application icons and a system tray showing the time as 9:28 AM on 20-Sep-23. An "Activate Windows" watermark is visible in the bottom right corner of both windows.

The image shows a screenshot of the Turbo C++ (TC) IDE. The top window is the source code editor, which has a blue background and a yellow menu bar. The menu bar includes 'File', 'Edit', 'Run', 'Compile', 'Project', 'Options', 'Debug', and 'Break/watch'. The status bar at the bottom of the editor shows 'Line 9', 'Col 20', and 'Insert Indent Tab Fill Unindent * E:9AM.C'. The code in the editor is as follows:

```
#include<stdio.h>
#include<conio.h>
void main()
{
int  a=10;
clrscr();
a<<=2; /* a=a<<2; */
printf("a=%d\n", a );
a>>=3; /* a=a>>3 */
printf("a=%d\n",a);
getch();
}
```

The bottom window is the output console, which has a black background. It displays the output of the program:

```
a=40
a=5
```

Both windows have a yellow title bar with the text 'TC'. The Windows taskbar is visible at the bottom of the screen, showing various application icons and the system clock indicating 9:29 AM on 20-Sep-23. An 'Activate Windows' watermark is present in the bottom right corner of both the IDE windows.

The image shows a screenshot of the Turbo C++ (TC) IDE. The top window displays the source code of a C program. The code includes headers for `stdio.h` and `conio.h`, defines a `main` function, declares an integer `a` with a value of 10, clears the screen, updates `a` to 20 using the expression `a << 2 + 1 >> 2`, and prints the values of `a` at two different points. The bottom window shows the output of the program, which is `a=10` followed by `a=20` on the next line. The Windows taskbar at the bottom shows the time as 9:31 AM on 20-Sep-23.

```
File Edit Run Compile Project Options Debug Break/watch
Line 9 Col 26 Insert Indent Tab Fill Unindent * E:9AM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a=10;
clrscr();
a<<2+1>>2;
printf("a=%d\n", a );
printf("a=%d\n",a<<2+1>>2);
getch();
}
```

a=10
a=20

C - PROGRAM STRUCTURE

It illustrates[Describes] how to write a program in c-language.

Every programming language is having a particular structure and we should have to follow this structure.

C-Programming structure is divided into the following parts.

- **[documentation section]**
- **Header files / Proto types / Preprocessor**
- **[global variables]**
- **[function declarations & definitions]**
- **void main() / main() / int main()**
- **Other statements.**

Generally documentation section consists of program headings, definitions etc and They should be represented with comments.

The statements that are enclosed in between `/*` and `*/` are called comments.

Comments never participate in program execution. They are only for user understandability or display purpose.

C-Language supports comment block only.

Eg:

```
/*  
.....;  
.....;  
*/
```

C++ supports comment block and single line comments.

Eg: `//`

Header files consists of function definitions, global variables, macros etc.

We can declare the header files at any place of our program. But before going to use the relevant function, its header file should be declared. It is recommended to declare the header files at the top of the program.

Every header file should be started with **#include**. Here **#** is a **preprocessor** indicator.

We can place header files in angled brackets **< >** or double quotes **" "**.

Header file never ends with **semicolon(;)** .

Note: In C++, we should have to declare header files at the top only.

The variables that are declared before **main()** or top of the program are called **global variables** and they can be accessed from anywhere in our program. They are optional.

Function declarations and definitions contain function header and body.

- * Every C-Program execution starts from main() function and travel towards down. Hence it is also called **top-down** approach.

- * Without main(), C-Program never executed but compiled.

- * main() is predefined function with user defined body. main() doesn't have any header file. One program have to maintain one main() only. **We can create alternate for main()**. Other statements are changed from program to program.

Note: It is recommended to write C programs in lower case only. Every statement should have to end with semicolon except header files, control statements, main().