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INTRODUCTION TO PROGRAMMING

```c
#include <stdio.h>

struct Student {
    char grade;
    char course[50];
    int registrationNumber;
    char lastName[50];
    char firstName[50];
};

int main() {
    struct Student student;

    printf("Enter grade: ");
    scanf(" %c", &student.grade);

    printf("Enter course: ");
    scanf(" %[^\n]", student.course);

    printf("Enter registration number: ");
    scanf("%d", &student.registrationNumber);

    printf("Enter last name: ");
    scanf(" %[^\n]", student.lastName);

    printf("Enter first name: ");
    scanf(" %[^\n]", student.firstName);

    printf("\nStudent Details:\n");
    printf("Grade: %c\n", student.grade);
    printf("Course: %s\n", student.course);
    printf("Registration Number: %d\n", student.registrationNumber);
    printf("Last Name: %s\n", student.lastName);
    printf("First Name: %s\n", student.firstName);

    return 0;
}
}
```

2.

Compiler- is a software tool that translates the entire source code written in the C programming language into machine code.

Source code – refers to human readable set of instructions written by a programmer using the C programming language.

Object code- is a compiled code.

Linkers-is a utility that combines object code with other codes to produce the final executable program.

4.

INTERPRETER	COMPILER
Translates and executes each statement at a time	Translates the source code statement as a unit
Interpreted object codes that take less memory compared to compiled programs	Compiled programs require more memory as their object codes are larger
Syntax errors are corrected and reported before execution can continue	Syntax errors are corrected after source code has been translated to its object code equivalent
Tends to have slower execution as it translates and executes simultaneously	Faster execution since the entire program is optimized beforehand
Requires more memory as it generates an entire executable file	Generally uses less memory since it interpretes code on the fly
Results in platform specific executables	Often more portable as it works with the source code and relies on an interpreter available o

5.

Arithmetic

Logical

Relational

Assignment operations