

C programing Assignment 1

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C programming

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Q1. The main() function is the entry point of every C program. It tells the compiler where execution

begins and usually returns an integer to indicate program success.

Q2. Declaration tells the compiler about a variable and reserves memory (e.g., int x;).

Initialization

assigns an initial value (e.g., int x = 10;).

Q3. See src file for code: program prompts user for name and displays greeting.

Q4. Data types in C: int (e.g., int age = 20), float (float pi = 3.14), double (double num = 3.14159),

char (char grade = 'A'), void (no value).

Q5. Type conversions: Implicit (done by compiler, e.g., int x=5; float y=x;). Explicit (done by programmer using cast, e.g., float y=(float)x/2).

Q6. See src file for code: program calculates area of rectangle.

Q7. scanf() reads formatted input from user. Example: int age; scanf("%d", &age);

Q8. See src file for code: converts Celsius to Fahrenheit.

Q9. See src file for code: converts days to weeks and days.

Q10. See src file for code: swaps two variables using temp.

Q11. Expression: $x = (x + 1) * 3 - 10$;

Q12. Expression: $(a > b) \ \&\& \ (c \neq 0)$;

Q13. Expression: $(num \% 2 == 0) \ \&\& \ (num \% 3 == 0)$;

Q14. Expression: $x = x + y$; $y = x - y$; $x = x - y$;

Q15. Expression: $(num > 0) \ \&\& \ (num \% 2 == 0)$;

Q16. Expression: $(x + y) / 2.0;$

Q17. Expression: $(ch \geq 'A' \ \&\& \ ch \leq 'Z');$

Q18. Expression: $(a*a + b*b + c*c);$

Q19. Expression: $(a == b) \ \&\& \ (b != c);$

Q20. Expression: $(num \% 3 == 0) \ || \ (num \% 5 == 0);$

Q21. Expression: $temp = x; x = y; y = z; z = temp;$

Q22. Expression: $(int)(0.5 + \sqrt{a + b});$

Q23. Expression: $(num > 0) \ \&\& \ ((num \ \& \ (num - 1)) == 0);$

Q24. Expression: $((int)(\sqrt{num})) * (int)(\sqrt{num}) == num);$