

CS 101: Computer Programming and Utilization

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(Abhiram Ranade's slides, borrowed and edited)
Lecture 7

Today's Lecture

- “bool” data type and logical operators
- Relational operators
- if and if-else statements

Boolean data, operations

- Declaration: `bool x = true, y = false;`
- “true” and “false” are C++ constants.
- Conjunction (AND): `bool z1 = x && y;`
- Disjunction (OR): `bool z2 = x || y;`
- Negation (NOT): `bool z3 = !x;`

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6 relational operators

- Operands are usually numbers, result a boolean.
- `bool x1 = (23 < 35);`
- `bool x2 = (23 <= 35);`
- `bool x3 = (23 > 35);`
- `bool x4 = (23 >= 35);`
- `bool x5 = (23 != 35);`
- `bool x6 = (23 == 35);`

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Let us calculate income tax

Write a program to read income and print income tax, using following rules.

- If $\text{income} \leq 180,000$, then $\text{tax} = 0$.
- If $180,000 \leq \text{income} \leq 500,000$, then $\text{tax} = 10\%$ of $(\text{income} - 180,000)$.
- If $500,000 \leq \text{income} \leq 800,000$, then $\text{tax} = 32,000 + 20\%$ of $(\text{income} - 500,000)$.
- If $\text{income} > 800,000$, then $\text{tax} = 92,000 + 30\%$ of $(\text{income} - 800,000)$.