

Test 1 Topic List

Test 1 covers material from **Labs 1-8**. There is no new material covered since our last mini quiz.

You will complete the test **on paper** during class. You will not be allowed to use the computer or any other reference material.

The following is a summary of what you should know. Use the previous mini quizzes, slides, reference documents, videos, and your work in Replit to study from.

- switch cases
 - Similar functionality to if-else ladders
 - Remember break statements!
 - Example:


```
int main() {
    int usernumber, option=4;
    cout << "Enter your user number: ";
    cin >> usernumber;

    switch (usernumber)
    {
    case 0:  cout << "You are the null user!" << endl;
            break;
    case 42: if (option == 1)
              cout << "You are all-knowing!" << endl;
            else
              cout << "You are almost all-knowing!" << endl;
            break;
    case 999: cout << "You are the superuser!" << endl;
             break;
    default: cout << "You are some random user." << endl;
    }
}
```
- while loops
 - Checks condition at the beginning
 - Example:


```
int n = 0;
while(n != 25)
{
    cout << "Please enter a number: ";
    cin >> n;
}
```
- do-while loops
 - Checks condition at the end (will always run at least once)


```
do
{
    cout << "Enter a number: ";
    cin >> num;
}while (num != -1);
```

- `for` loops
 - o Runs a pre-specified number of times
 - o Example that runs 6 times:

```
for(int n = 0; n < 6; n++)
{
    cout << "blah" << endl;
}
```
- Totaler variables
 - o Build off previous values (ex. `total = total + i`)
 - o Should be initialized (given a starting value, like 0)
- If-else structures
- Notation for conditional testing
 - o `==` equal?
 - o `!=` not equal?
 - o `>`, `<`, `>=`, `<=`
 - o `&&` and
 - o `||` or
- Variables Types and Operations
 - o Arithmetic operations: adding, subtracting, multiplying and dividing.
 - o Modulus (%)
 - o Careful of mixing types (i.e. integer division results in integer answer)
 - o Typecasting
- How to use `cin` and `cout` for input and output.
- How to format your output (e.g. putting some information on different lines)