

Cognitive Robotics

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Lecture 5

Outline

- Mid-Term Review
- Introduction to C Programming
- Not Exactly C (NXC)
- Bricx Environment

Programming in C

- Comments

```
// single line comment
```

```
/* multiple line comment
```

```
line 2
```

```
*/
```

- Variables

```
int x = 1;
```

```
x = x + 1;
```

```
++x;
```

```
x += 1;
```

```
bool t = true;
```

```
bool f = false;
```

Programming in C

- Control structures

```
if (x > 5) {
```

```
    t = true;
```

```
    f = false
```

```
else {
```

```
    t = false;
```

```
    f = true;
```

```
}
```

Programming in C

- Switch statement

```
switch (x) {  
    case 1: // is x == 1  
        ++y; // increment y  
        t = true;  
        break;  
    case 2:  
        y += 2; // increment y by 2  
        t = false;  
        break;  
    default: // everything else  
        y += 3;  
        t = true;  
        break;  
}
```

Programming in C

- While loops

```
int x = 0;  
while (x < 10) {  
    // do something in loop  
    ++x;  
}
```

- For loops

```
int x;  
for (x = 0; x < 10; x++) {  
    // do something in loop  
}
```

- NXC tasking
 - multi-threaded coding

```
task first_task() {
    while (true) {
        // do something
    }
}
task second_task() {
    while (true) {
        // do something else
    }
}
task main () {
    start first_task;
    start second_task;
    wait (10000); // wait for 10 seconds
    StopAllTasks ();
}
```