

Princeton University

COS 217: Introduction to Programming Systems

C Symbolic Constants

Method 1: #define

```
#define START_STATE 0
#define ONE_IN_A_ROW_STATE 1
#define TWO_IN_A_ROW_STATE 2
...

int main(void)
{
    int iState;
    ...
    iState = START_STATE;
    ...
    iState = ONE_IN_A_ROW_STATE;
    ...
}
```

Method 2: "const" Variables

```
int main(void)
{
    const int iStartState = 0;
    const int iOneInARowState = 1;
    const int iTwoInARowState = 2;
    ...
    ...
    int iState;
    ...
    iState = iStartState;
    ...
    iState = iOneInARowState;
    ...
}
```

Note: Compiler is allowed to not allocate storage if it need not.

Method 3: Enumerations (preferred when applicable)

```
enum State {START_STATE, ONE_IN_A_ROW_STATE, TWO_IN_A_ROW_STATE, ...};

int main(void)
{
    enum State eState;
    ...
    eState = START_STATE;
    ...
    eState = ONE_IN_A_ROW_STATE;
    ...
    eState = 0; /* Sadly, can mix enumerations and ints. */
    ...
}
```