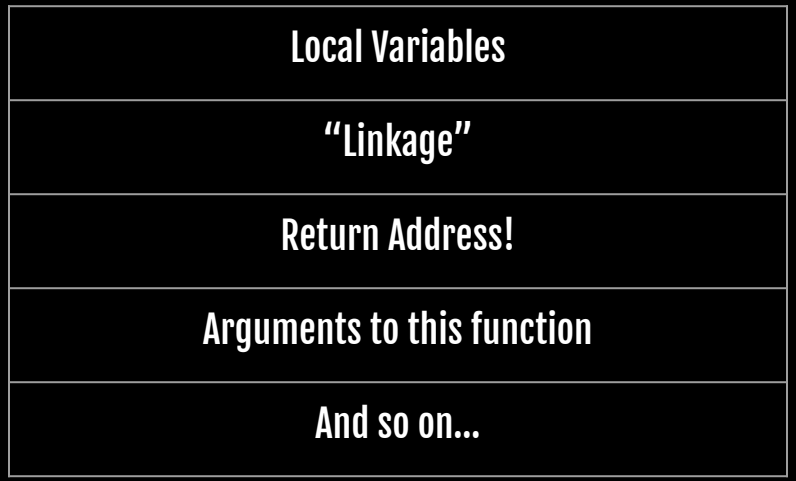
Binary Exploitation

SIGPWNY

Where we last left our heroes...

The Stack

“It’s where things go™”

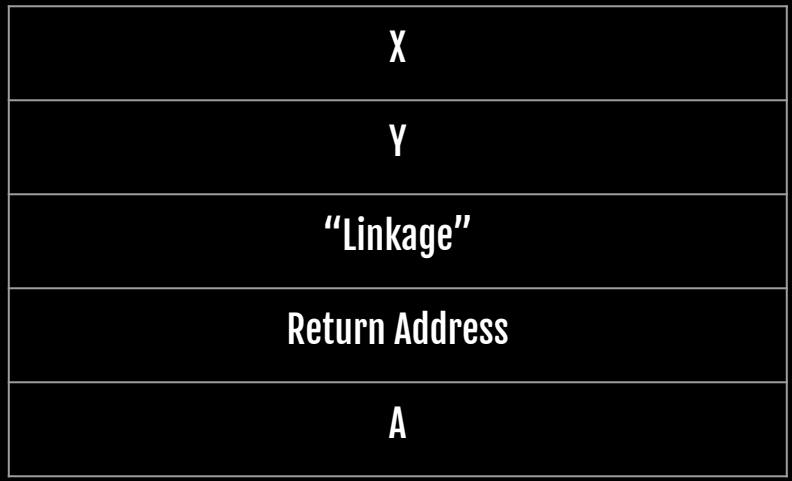


Example

```
int demo (int A) {
    int Y;
    int X;

    X = A + 2;
    Y = A - X;

    return A + X + Y;
}
```



Another Example

```
int demo () {
    char buffer[4];
    buffer[0] = ‘A’;
    buffer[1] = ‘B’;
    buffer[2] = ‘C’;
    buffer[3] = ‘D’;
    return 0;
}
```

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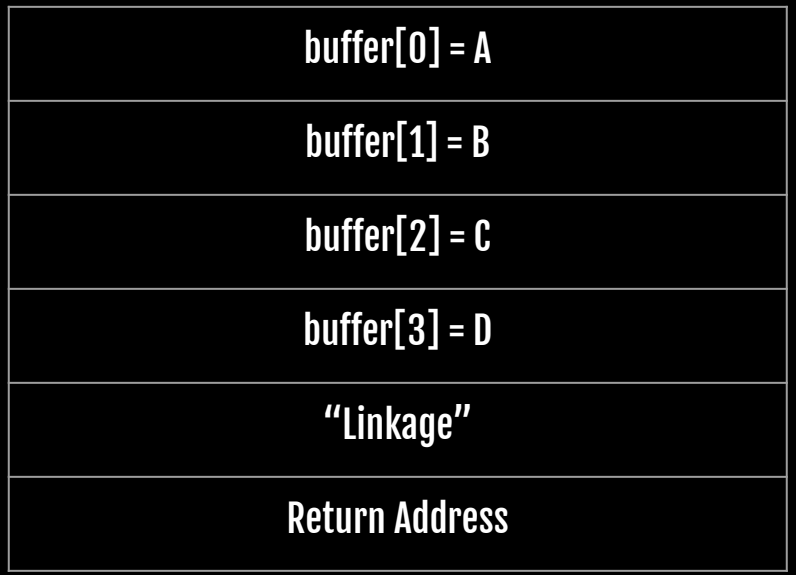

What about user input?

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int read_input () {
    char buffer[4];
    gets(buffer);
    printf(“You said: %s\n”, buffer);
    return 0;
}
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./program
Say something!
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You said: 1234
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What about a lot of user input?

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Say something!
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Segmentation fault
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1
2
3
4
AAAA
BBBB

How to play

1. Program asks for user input, stores it in a variable
2. You give extra data to “overflow” the variable
3. Carefully choose extra data to change program execution flow

Your First Challenge

```
int main()
{
      printf("This is SIGPwny thing, go\n");
      vulnerable();
}
```

Your First Challenge

```
void print_flag()
{
      printf("GOOD JOB! Run this on server for flag");
}
```

Your First Challenge

```
void vulnerable()
{
      int changethis = 0x12345678;
      char buf[4];
      gets(buf);
      if(changethis != 0x12345678) {
            print_flag();
      }
}
```

Your First Challenge

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{
	printf("GOOD JOB! Run this on server for flag");
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void vulnerable()
{
	int changethis = 0x12345678;
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