# Data Visualization & Design

**Week 10**

1. **VR Demo** (Google Cardboard)
2. Principles of **Gamification**
3. **VR Design** Considerations
4. Programming Concept: **For-Loops**
5. Studio: Introduction to VR with **A-Frame**

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# Google Cardboard

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## 1. The App Experience Evolves with the User

It’s important to think about your product as multiple experiences. In gaming, players generally go through a tutorial first, and then for days or weeks after, are given basic missions and slowly ramped to more difficult ones.

## 2. Identify the “Core Loop”

This is the heart of gamification — building systems that reward and incentivize player, so they feel some accomplishment for engaging in these main actions.

*Example:* ***LinkedIn***

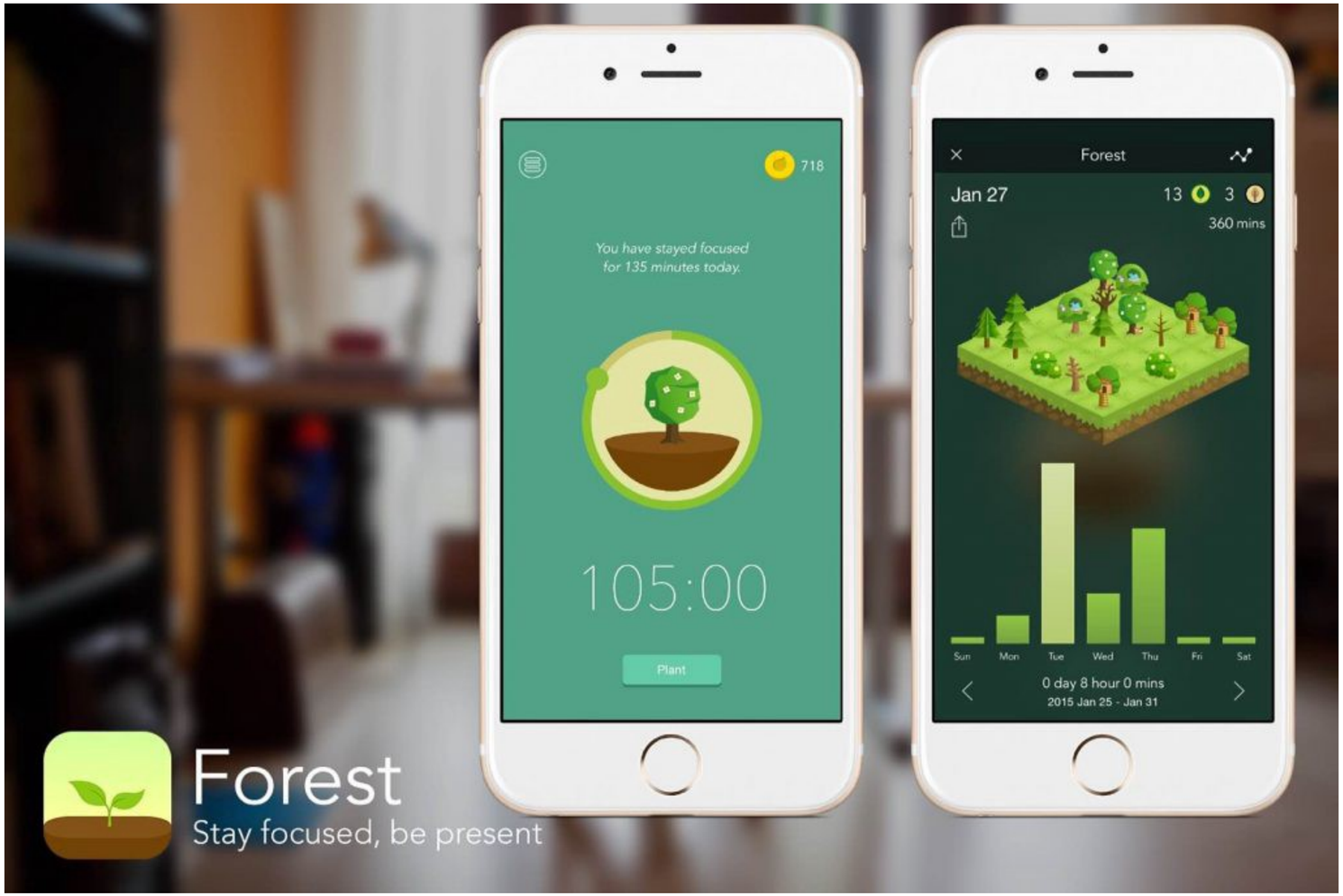
## 3. Limited Resources

Users crave to be smart, and by constraining or limiting actions based on resources available, players will naturally try to maximize their experience.

## 4. Instill a Sense of Ownership

If players are able to personalize something, then they will have a greater affinity for the product as a whole.

# *Example:* ***Forest***



## 5. Integrate Social to your Experience

For engaged users, social is hyper important instill a sense of belonging to your app, website, or service.

By designing incentives to complete a desired action, users will be **more likely** to complete the action in the future.

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Designing for a new dimension is **hard**.

In virtual reality, best practices are informed by **physiological considerations**, along with human perception and cognition.

# 1. Avoiding simulator sickness

Mismatches between physical and visual motion cues can give rise to nausea.

## 2. Familiarity

Because a virtual reality canvas is infinite, it is important to provide the user with cues for focus and attention as they explore a new environment.

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```
print(“hello”);
```

```
print(“hello”);

=hello
```

```
myArray = [1,2,3,4,5];
```

```
print(myArray);
```

```
print(myArray);

=[1,2,3,4,5]
```

```
print(myArray[0]);
```

```
print(myArray[0]);
```

=1

```
print(myArray[0]);
print(myArray[1]);
print(myArray[2]);
print(myArray[3]);
print(myArray[4]);
```

```
print(myArray[0]);
print(myArray[1]);
print(myArray[2]);
print(myArray[3]);
print(myArray[4]);
```

```
=12345
```

```
for(int i=0; i < 5; i++)
{
    print(myArray[i]);
}
```

```
for(int i=0; i < 5; i++)
{
    print(myArray[i]);
}

=12345
```

Define and set starting point for counter

Set limit for counter

Count up +1 every time

```
for(int i=0; i < 5; i++)
{
    print(myArray[i]);
}
```

Access counter value

```
for(int i=0; i < 5; i++)
{
    print(myArray[i]);
}

=12345
```

```
for(int i=0; i < myArray.length; i++)
{
    print(myArray[i]);
}
```

```
for(int i=0; i < myArray.length; i++)
{
    print(myArray[i]);
}
```

```
=12345
```

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**https://github.com/emilyfuhrman/datavis_design/**blob/master/2018_Summer/Studios/06_Introduction_to_VR_with_A-Frame.md