

Project Title

Kong's Walk

Description

Kong's walk is a VR simulation, approaching room-scale locomotion technique where player can walk around as Human or Giant in VR environment, the purpose is to demonstrate an approach for exploring and playing in VR environments to make ease for player and reduce dizziness effect as one of the major problems while playing VR games

Getting Started

Dependencies

- 7-zip
- Unity 2019.4.39f
- XR plugin management
- XR interaction toolkit
- Steam-VR
- Visual studio
- Windows 10, 11

Installing

- Install 7-zip (preferably, version ≥ 22.01)
- Download and install Unity 2019.4.39f and related unity extensions for VR interaction, have a look at the Unity README for installation instructions
- Download Kong's walk zip folders of project files and direct executable via direct links as stated
 - Project files (<https://cloud.tu-ilmenau.de/s/kfaHKEZyw6WGQSB>)
 - Executable (<https://cloud.tu-ilmenau.de/s/2ZE3XJzqF5CQQSB>)

Executing program

- Project files
 - Unzip downloaded folders
 - Run steam-VR and make sure hardware is properly connected and working
 - Run Unity and open project by just selecting the unzipped project folder
 - Go to scenes and select vr-menu scene and select play from menu, controllers fire keys 1 and 2 are mapped that player can use to change between Human and Kong modes
 - For quit " Esc key " on keyboard can be used or simply by stopping play mode from unity
 - Options can be selected in menu using controller trigger keys



- Executable built file
 - Make sure VR devices are connected and working
 - Simply unzip the built folder and start by Kong's walk application
 - Run on administrator if needed
 - Controllers fire keys 1 and 2 are mapped that player can use to change between Human and Kong modes
 - Options can be selected in menu using controller trigger keys
 - For quit headsets needed to be removed then press " Esc key " on keyboard and quit the game

Authors

Muhammad Adil (muhammad.adil@tu-ilmenau.de)

Muhammad Adnan Noor (muhammad-adnan.noor@tu-ilmenau.de)

Version History

- 0.1 (Initial Release)

Acknowledgments

- <https://www.youtube.com/watch?v=b2Te3UOJ4BU>
- <https://www.youtube.com/watch?v=p0YxzgQG2-E&t=188s>

Sources

Tutorials

- <https://learn.unity.com/course/create-with-code?uv=2019.4>
- <https://learn.unity.com/pathway/vr-development?uv=2019.4>
- <https://learn.unity.com/project/vr-basics?uv=2021.3&courseId=60183276edbc2a2e6c4c7dae>
- <https://learn.unity.com/tutorial/enabling-vr-1#>
- <https://www.youtube.com/watch?v=VdT0zMcgTQ&t=268s>
- <https://www.youtube.com/watch?v=1Y6suVBaBK8&t=1s>
- https://www.youtube.com/watch?v=WAVa_9iIlEQ&t=216s
- <https://www.youtube.com/watch?v=ddy12WHqt-M&t=78s>
- <https://www.youtube.com/watch?v=pME123lfnEI>

- https://www.youtube.com/watch?v=GSdfqOq_p5k
- <https://www.youtube.com/watch?v=ojZkl8q3YBI>
- <https://www.youtube.com/watch?v=qMhjLT7iVZ0>
- <https://www.youtube.com/watch?v=ndwJHpxd9Mo>
- <https://www.youtube.com/watch?v=iJ0oNYIUfJo&t=232s>
- <https://www.youtube.com/watch?v=RtERk6jpxdY&t=764s>

Assets

- <https://assetstore.unity.com/packages/3d/vegetation/trees/realistic-tree-9-rainbow-tree-54622>
- <https://assetstore.unity.com/packages/2d/textures-materials/floors/outdoor-ground-textures-12555>
- <https://assetstore.unity.com/packages/2d/textures-materials/nature/grass-flowers-pack-free-138810>
- <https://assetstore.unity.com/packages/3d/environments/free-stylized-nature-environment-96371>
- <https://assetstore.unity.com/packages/3d/environments/landscapes/free-rocks-19288>
- <https://assetstore.unity.com/packages/3d/characters/easyroads3d-free-v3-987>

Code Snippets

- Use this code for scene loadings for play and quit game functions

```
public void PlayGame()
{
    SceneManager.LoadScene("SampleScene")
}

public void QuitButton()
{
    Application.Quit();
}
```

- Use this code to get parameters set for human size measurements

```
public void HumanSize()
{
    float headHeight = camera.transform.localPosition.y;
    float scale = defaultHeight / headHeight;
    transform.localScale = Vector3.one * scale;
}
```

- Use this code to modify scaling outputs

```
public void Kongsize()
{
    float headHeight = camera.transform.localPosition.y;
    float scale = defaultHeight / headHeight;
    transform.localScale = Vector3.one * scale * 13;
}
```

- Use this code for controller keys assignment

```
void Update()
{
    if (Input.GetButtonDown("Fire1"))
    {
        Kongsize();
    }

    if (Input.GetButtonDown("Fire3"))
    {
        HumanSize();
    }
}
```

- Use this code for volume adjuster slider

```
[SerializeField] Slider volumeSlider;

public void ChangeVolume()
{
    AudioListener.volume = volumeSlider.value;
}
```