

Topic	SELF DESIGN PROJECT STAGE 4: NAVMESH	
Class Description	Students will create the navigation mesh of the virtual reality scene for the car drive simulation.	
Class	C192	
Class time	45 mins	
Goal	<ul style="list-style-type: none"> Design / add features in the project by writing code. Test and debug the code for the project. 	
Resources Required	<ul style="list-style-type: none"> Teacher Resources: <ul style="list-style-type: none"> Visual Studio Code Editor laptop with internet connectivity smartphone earphones with mic notebook and pen Student Resources: <ul style="list-style-type: none"> Visual Studio Code Editor laptop with internet connectivity smartphone earphones with mic notebook and pen 	
Class structure	Warm-Up Teacher-led Activity Student-led Activity Wrap-Up	05 mins 15 mins 20 mins 05 mins
WARM-UP SESSION - 5 mins		
CONTEXT <ul style="list-style-type: none"> Review the progress in the project so far. Continue working on the self designed project. 		



Teacher Starts Slideshow

Slide 1 to 4

Refer to speaker notes and follow the instructions on each slide.

Hey <student's name>. How are you? It's great to see you!
Are you excited to learn something new today?

Following are the WARM-UP session deliverables:

- Greet the student.
- Revision of previous class activities.

ESR: Hi, thanks!
Yes I am excited about it!

Click on the slide show tab
and present the slides

WARM-UP QUIZ

Click on In-Class Quiz




Continue WARM-UP Session



Slide 5 to 10

Following are the session deliverables:

- Appreciate the student.
- Narrate the story by using hand gestures and voice modulation methods to bring in more interest in students.

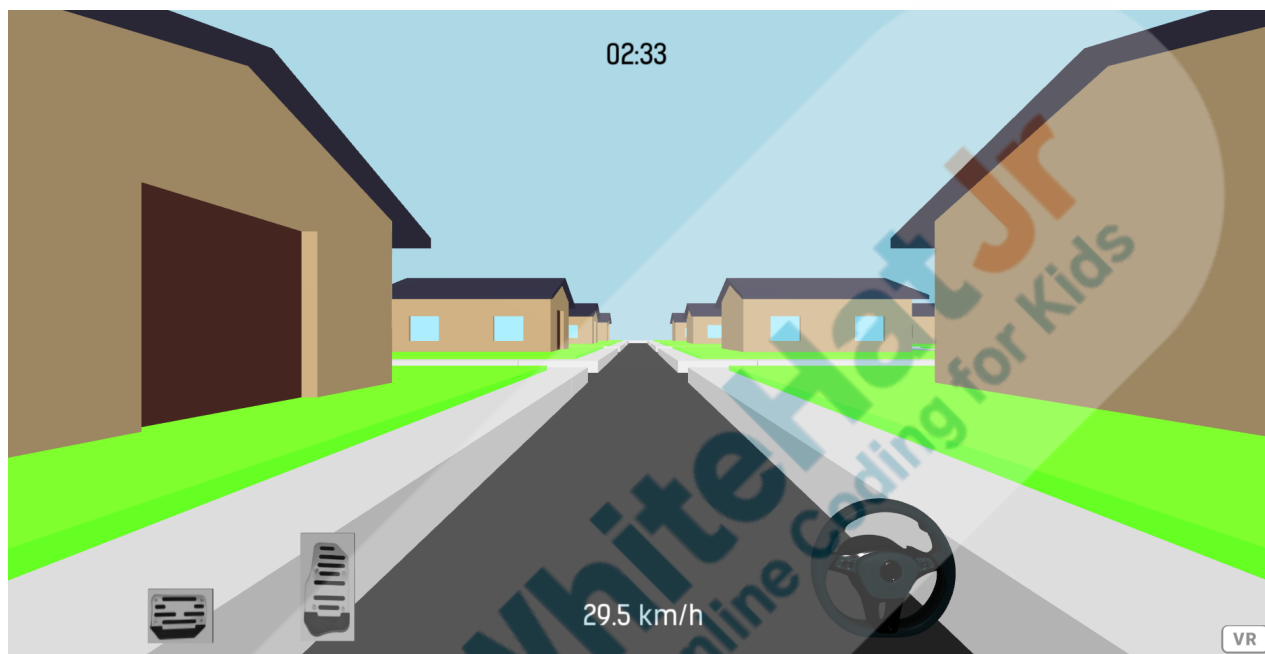
Class Steps	Teacher Action	Student Action
Step 1: Warm-Up (5 mins)	Hi, how are you? Great!	ESR: I am good!
	Let's quickly review our progress in the project so far.	<i>The student reviews the different features, storyline, characters etc. built in the project so far.</i>

	<p>Note: Encourage the student to discuss what they remember and help them to be more involved.</p> <p>What is the feature we will be adding in our simulation today?</p>	<p>Note: The student discusses his/her views with the teacher.</p> <p>The student identifies the next feature to be added in the project.</p>
<p>Teacher Ends Slideshow </p>		
TEACHER-LED ACTIVITY - 15 mins		
Teacher Initiates Screen Share		
<p>CHALLENGE</p> <ul style="list-style-type: none"> Review the progress in the project so far. Continue working on the self designed project. 		
<p>Step 2: Teacher-led Activity (15 mins)</p>	<p>What else can we do in the car drive simulation next from what we did in the previous class?</p> <p>There is one important feature which is required for simulation in which you travel/move around the scene on ground.</p> <p>Can you tell me what that could be?</p> <p>Superb! Whenever we move around the scene we should not be passing through the objects right?</p>	<p>ESR: Varied.</p> <p>ESR: Navigation meshes.</p> <p>ESR: Yes.</p>

	<p>Well navigation meshes help us to divide the whole into walkable and non-walkable areas.</p> <p>Let's build and add that to the scene.</p> <p><i>Challenge the student's thought process to write better quality and more structured code.</i></p>	
Teacher Stops Screen Share		
	<p>Now it's your turn. Please share your screen with me.</p>	
<p>Teacher Starts Slideshow </p> <p>Slide 11 to 13</p> <p>Refer to speaker notes and follow the instructions on each slide.</p>		
	<p>We have one more class challenge for you. Can you solve it?</p> <p>Let's try. I will guide you through it.</p>	
<p>Teacher Ends Slideshow </p>		
STUDENT-LED ACTIVITY - 20 mins		
<ul style="list-style-type: none"> • Ask the student to press the ESC key to come back to the panel. • Guide the student to start screen share. • Teacher gets into fullscreen. 		
<p><u>ACTIVITY</u></p> <ul style="list-style-type: none"> • Review the progress in the project so far. • Continue working on the self designed project. 		

<p>Step 3: Student-led Activity (20 mins)</p>	<p><i>Guide the student to build and add navigation mesh of the scene.</i></p> <p><u>Important points to keep in mind while making navmeshes:</u></p> <ul style="list-style-type: none"> • Try to make sure the <u>scene isn't that heavy</u>. It's difficult to create a navmesh of heavy models/scenes so it will give you errors. • Or we can <u>build the scene with just basic shapes</u> like boxes, cones, cylinders etc! • Also the <u>camera should not be included</u> while building the navmesh. • Make sure there is a <u>plane/flat ground</u> on which the whole scene is built. • Make sure the <u>bounding radius</u> of the whole scene is less than 500 meters. <p><i>Guide the student to add the movement controls and navmesh is properly in the code.</i></p> <p>Make sure <u>wasd controls are not added to the camera when movement-control component is being used.</u></p>	
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Note: This is just for the teacher's reference. Since this is a self design class students will build their own VR scene and then add controls to the elements in the scene. Students can add game play features (like timers, speeds, scores etc.) to make the simulation more fun.



Teacher Guides Student to Stop Screen Share

WRAP UP SESSION - 5 mins

Teacher Starts Slideshow
Slide 14 to 17



Activity details

Following are the WRAP-UP session deliverables:

- Appreciate the student.
- Revise the current class activities.
- Discuss the quizzes.

WRAP-UP QUIZ

Click on In-Class Quiz



Continue WRAP-UP Session

Slide 18 to 23

Activity Details

Following are the session deliverables:

- Explain the facts and trivia
- Next class challenge
- Project for the day
- Additional Activity (Optional)

FEEDBACK

- Appreciate and compliment the student for trying to learn a difficult concept.
- Get to know how they are feeling after the session.
- Review and check their understanding.

Teacher Action

You get Hats off for your excellent work!

Student Action

Make sure you have given at least 2 Hats Off during the class for:

Creatively
Solved Activities



Great
Question



Strong
Concentration



PROJECT OVERVIEW DISCUSSION

Refer the document below in Activity Links Sections

Teacher Clicks

✕ End Class

Additional Activities	<p><i>Encourage the student to write reflection notes in their reflection journal using markdown.</i></p> <p>Use these as guiding questions:</p> <ul style="list-style-type: none"> • What happened today? <ul style="list-style-type: none"> ○ Describe what happened. ○ The code I wrote. • How did I feel after the class? • What have I learned about programming and developing projects? • What aspects of the class helped me? What did I find difficult? 	<p><i>The student uses the markdown editor to write their reflections in a reflection journal.</i></p>
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Activity	Activity Name	Links
Teacher Reference	Self Design Project Final Code	https://github.com/whitehatjr/PRO-C189-192-Reference <i>Note: The model used in the Reference might vary based on availability of model as these models are used from a third-party website. Although the functionality of the project will not be affected by this.</i>
Student Activity	Self Design Project Stage 4	--NA-- <i>Note: As it is an open-ended project, there is no specific solution. The student is expected to work on this project on their own, with teacher's guidance.</i>
Teacher Reference 1	Project Document	https://s3-whjr-curriculum-uploads.whjr.online/fa8387e5-3bc5-4729-8f7a-f24799fb200a.pdf

Teacher Reference 2	Visual-Aid	https://s3-whjr-curriculum-uploads.whjr.online/8801bda0-0789-41ab-aea7-ce603083d2be.html
Teacher Reference 3	In-Class Quiz	https://s3-whjr-curriculum-uploads.whjr.online/ace94b71-0e62-4752-a80d-0fcc11a843d2.pdf

