

planning motion performance capture

Script, storyboard, animatics, shot list, etc

Today

- Show side-by-side videos (mood board onto USB – with Name)
- Talk about next assignment
- Choose Groups
- Introduce the planning process of motion performance capture shoots

For tomorrow

- Continue with mood-board / visual reference for your idea, script, storyboard, and animatics and **shot list**. These need to be complete by end of tomorrow.

Next assignment:

- Plan script for motion capture shoot
- Create animation list, shot list, storyboard, and animatics
- Coordinate and direct motion capture performer in groups of 3 or 4

Final assignment:

- Clean up and composite the motion capture data
- Add face animation and lipsync
- Create a video or game using the animation inside Unreal Engine

Assessments		
WEEK 1	1A: CHOOSE A SOURCE VIDEO TO RECREATE	Make a short presentation about topics that interest you, related to motion and gesture (e.g., dance, action movies, video games) Choose a scene from film, video game, music video, dance that you want to recreate. Create a presentation with the clip, and some visual reference material around the idea
	1B: SIDE-BY-SIDE	Present Side-by-side video of original segment and your version
WEEK 2	2A: IDEA	Prepare a presentation on an idea for an original animation
	2B: DEVELOP	(in class tutorial - I will check storyboards, etc)
	2C: MOCAP SESSION	Project: Record motion in groups of 4. Choose 1 person to be performer. Create shot lists from each student's projects. Take recordings, edit, and clean up. Record at least 4 different pieces of animation.
WEEK 3	3: FINAL WORK	Delivery: Present your animation to class, with composite documentation (with sound, camera motion or multiple shots, post processing, environment). Video (or game experience).

Your Mocap Idea

Planning animation for Thursday mocap day

Idea Brief

- 2 characters
- about 1 minute long
- Dance, sports, action, drama, etc.
- Can have dialogue (we will look at face tracking and lip-sync later)
- You can write your own script, so make it fun and **relevant to your own interests**



Picking Groups

- We'll pick groups of 3-4
- One person will be 'performer' others will be 'director' of their action sequences
- Motion capture will happen on Thursday all day

TIME	ACTIVITY	PEOPLE	DURATION
9:00 AM	Set up equipment, clear space	JOSH	30
9:30 AM	GROUP A (10 minutes to set up suit, 20 minutes to record)	JOSH + GROUP A STUDENTS	45
10:15 AM	GROUP B (10 minutes to set up suit, 20 minutes to record)	JOSH + GROUP B STUDENTS	45
11:00 AM	GROUP C (10 minutes to set up suit, 20 minutes to record)	JOSH + GROUP C STUDENTS	45
11:45 AM	Contingency		15
12:00 PM	LUNCH BREAK		120
2:00 PM	Set up equipment	JOSH	30
2:30 PM	GROUP D (10 minutes to set up suit, 20 minutes to record)	JOSH + GROUP D STUDENTS	45
3:15 PM	GROUP E (10 minutes to set up suit, 20 minutes to record)	JOSH + GROUP E STUDENTS	45
4:00 PM	GROUP F (10 minutes to set up suit, 20 minutes to record)	JOSH + GROUP F STUDENTS	45
4:45 PM	Contingency		15
5:00 PM	END		

No.	STUDENT NUMBER	FULL NAME	性别	Group
1	2121825	Daniel	M	
2	2121826	Fox	F	
3	2121828	Scarlett	F	
4	2121838	Alan	M	
5	2121841	Rick	M	
6	2121844	Legecie	M	
7	2121845	Alex	M	
8	2121847	Jason	M	
9	2121849	Ryan	M	
10	2022113	Felix	M	
11	2022117	Karl	M	
12	2022118	Peter	M	
13	2022121	Evlin	M	
14	2022127	Marissa	F	
15	2022128	Raine	F	
16	2022129	Aaron	M	
17	2022130	Jane	F	
18	2022131	Jacky	M	
19	2022134	Chelsie	F	
20	2222324	Jaheim	M	
21	2222325	June	M	
22	2222326	Freddie	M	
23	2222328	Reimu	F	
24	2222332	Viscar	F	
25	2329010	Alina Vereikina	F	

Ideation / Pre -planning

Mood board for ideas – develop today

Planning Documents

For motion performance capture

Templates online

Example templates of the files you'll need are in the website

Day 2.2: Mocap Planning

Mocap-Shot-List-Template

Download

Animation-List-Example

Download

Mocap-Session-Checklist

Download

MOCAP_RUN_SHEET_14DEC_DRAFT

Download

Planning Documents

For different types of shoots, you'll need different sets of documents, but some are shared across all types.

L - linear narrative mocap recording

M - mechainim / "moves"-based mocap recording

R - reference video used to "copy" character mocap

- **Run Sheet** **L M R**
basic info on the crew: names, call times, duties/activities, phone numbers
- **Preparation Checklist** **L M R**
Giving details of activities that need to happen at various stages of the shoot: "the week before", "the day before", "on scene transition", "each take", etc.
- **Animation List** **L M R**
In this case a single POV character only?, invent a name
- **Flow Chart** **M**
pre-planned moves to be assessed and added to on review/rehearsal
- **Shot list** **L M R**
detailed description of how each move in the flow chart will be shot, normally done In File Maker Pro

Planning Documents

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L - linear narrative mocap recording

M - meanim / "moves"-based mocap recording

R - reference video used to "copy" character mocap

- **Annotated script** **L R**
prepared, with timing beats
- **Video Reference** **L M R**
Video of the moves / parts being acted out, to use for performance reference
- **Storyboards** **L M R**
Visual diagrams of gestures and motion
- **Animatic / Annotated Video Guide** **L M R**
Draft audio with reference video or animatics, and simple gesture cues offset
- **Appendix: Environment and Prop measurements** **L M R**
scene and prop measurements, which correspond to the game environment
- **Appendix: Character reference document** **L M R**
approved sketches of the game characters in costume, to guide special consideration

For our shoot we will need:

- Run sheet (already provided)*
- Checklist (already provided)*
- Animation list
- shot list
- storyboard
- animatic

optional

- (optional)** Character sketch and basic environment design

Run Sheet / Call sheet

- Providing a thorough run sheet of how you see the event running gives everyone a chance to prepare and make suggestions based on their experience.
- Key information includes event running order, estimated timing, crew roles and contact details, individual equipment requirements, lighting look, contact details and so on.

MOTION CAPTURE RUN SHEET

SESSION	CulPer / DSS Respect
TIME	2 - 6PM
DATE	THURSDAY 26 MAY 2022
LOCATION	TACTICAL SPACE LAB, 4 LACKEY ST, ST PETERS
PARKING	ON STREET PARKING ONLY
COORDINATOR	VICTORIA: 0420 281 405
CONTACTS?	VICTORIA: 0420 281 405 JOSH HARLE: 0491 155 985
CREW	JOSH, EMAN, VICTORIA, REA, LANGUAGE GUIDES X 4
LANGUAGES	HINDI, VIETNAMESE, ARABIC, CANTONESE/MANDARIN
LANGUAGE GUIDES	EMAN, REA + 2
GOPHER / ASSIST?	"Assign the talent a "gopher" during the shoot day; remember the talent may feel imprisoned in a mo-cap suit. I.e. get food water, etc." (do we need this? Yes. good to keep them in the scene area)
AMENITIES	TEA, COFFEE, WATER, FRUIT & BISCUITS

TIME	ACTIVITY	PEOPLE	DURATION
1:00 pm	Room setup (refreshments, projector, seating) Reference camera + lighting setup SCENE 1 - SET UP: NEW BORN / LIVING ROOM	JOSH + VICTORIA	60
2:00 pm	mocap performer arrive; performer orientation; suit fitting; calibration; test recording	JOSH, EMAN	30
2:30 pm	INTRO TO THE SHOT LIST	JOSH + CREW	15
2:45 pm	SCENE 1 - SET UP & REHEARSALS NEW BORN / LIVING ROOM		15
3:00 pm	SCENE 1 - LANGUAGE 1 - HINDI	JOSH, EMAN, LG1 (REA)	10
3:10 pm	SCENE 1 - LANGUAGE 2 - ARABIC	JOSH, EMAN, LG2 (EMAN)	10
3:20 pm	SCENE 1 - LANGUAGE 3 - VIETNAMESE	JOSH, EMAN, LG3	10
3:30 pm	SCENE 1 - LANGUAGE 4 - CANTONESE/MANDARIN	JOSH, EMAN, LG4	10
3:40 pm	INSERT A 15 minute BREAK (Josh will be working flat out)		15
3:55 pm	SCENE 2 - SET UP & REHEARSALS FIRST DAY AT HIGH SCHOOL		15
4:10 pm	SCENE 2 - LANGAGE 1 - HINDI	JOSH, EMAN, LG1 (REA)	10
4:20 pm	SCENE 2 - LANGAGE 2 - ARABIC	JOSH, EMAN, LG2 (EMAN)	10
4:30 pm	SCENE 2 - LANGAGE 3 - VIETNAMESE	JOSH, EMAN, LG3 (TBC)	10
4:40 pm	SCENE 2 - LANGAGE 4 - CANTONESE/MANDARIN	JOSH, EMAN, LG4 (TBC)	10
4:50 pm	SCENE 3 - SET UP AND REHEARSALS NOTE: DIFFERING SET UPS		15
5:05 pm	SCENE 3 - LANGAGE 1 - HINDI - DIWALI	JOSH, EMAN, LG1 (REA)	10
5:15 pm	SCENE 3 - LANGAGE 2 - ARABIC - BBQ	JOSH, EMAN, LG2 (EMAN)	10
5:25 pm	SCENE 3 - LANGAGE 3 - VIETNAMESE - LUNAR NEW YEAR	JOSH, EMAN, LG3 (TBC)	10

Checklist

- Make sure all important actions are listed, especially actions in preparation of the shoot, and checks like correctly naming the mocap files each take
- This will help keep your shoot organised and make sure you don't miss anything!

Mocap Session Checklist

Before

- Mocap planning documents finalised:
 - Animation list
 - Shot list
 - Schedule / Run sheet
 - Annotated script (if needed)
 - Video Reference and/or Storyboards
 - Environment & Prop Measurements and Details (if needed)
- prepare/create props, rigs, and special set ups (if needed)

Day of the session

- Clean and tidy space
- Xsens suit and glove sensors charged
- arrange props, rigs, and special setups

Each New Scene

- set up new cue points (tape on ground, etc)
- set up any props, rigs, or special setups

Each New Motion

- Brief performer on the motion, do some test "dry runs" through

Each Take

- Tick off file in shot list spreadsheet document
- Add notes and quality info to spreadsheet
- copy filename from spreadsheet and use for motion file save

Animation List

The first stage before the shot list, and possibly annotated script.

- Headings 1: Character
- Heading 2: Location (if necessary)
- Heading 3: Character's animations

Remember:

- Consider the rough timing of each animation, as this will go into the shot list.
- For long sections, use notes in brackets to indicate elements of the sequence.
- If long sections correspond to dialogue in a script, make sure the script is split into appropriate sections named the same as your animations – you'll probably need an annotated script too.

e.g.

Superguy's moves

- Stand (rest frame)
- Walk
- Special Move #1
- Special Move #2
- Run Defend (from stand)
- Punch forward/right/left (from stand)
- Get hit forward/right/left (from stand)
- Kick forward/right/left (from stand)
- Get hit forward/right/left (from crouch)
- Shoot forward/right/left (from stand)
- Fall down (from stand)
- 1Crouch Fall down (from crouch)
- Punch forward/right/left (from Crouch)
- Lying down (not dead)
- Kick forward/right/left (from crouch)
- Get up from fall to stand
- Shoot forward/right/left (from crouch)
- Dead

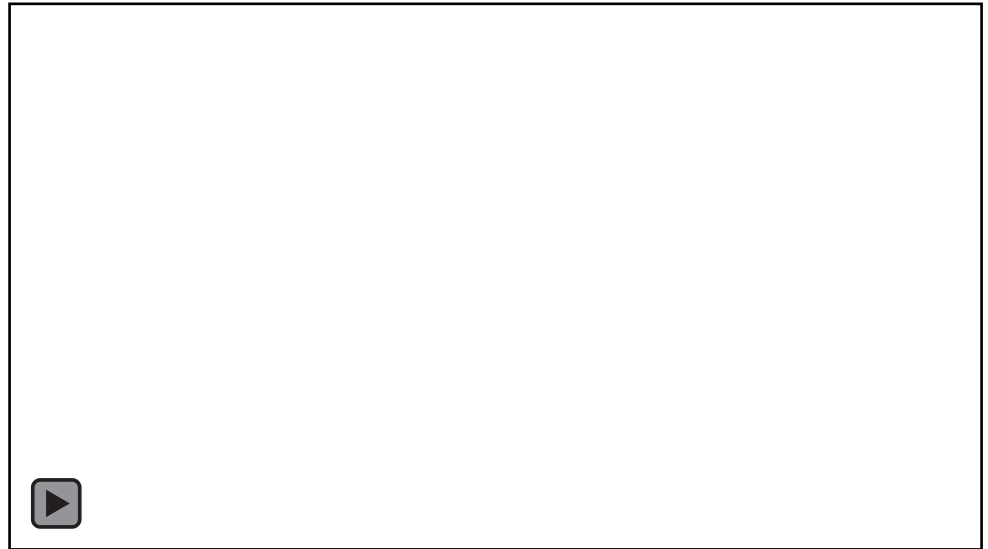
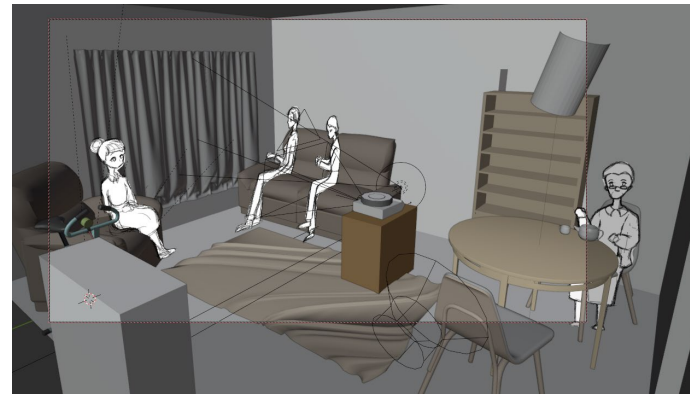
Animatic

Animatics take the storyboard action, and fit them into a live video of the action (normally with some sound elements or dialogue/talking if present)

The animatic allows you to test and refine the timing and flow of your scenes.

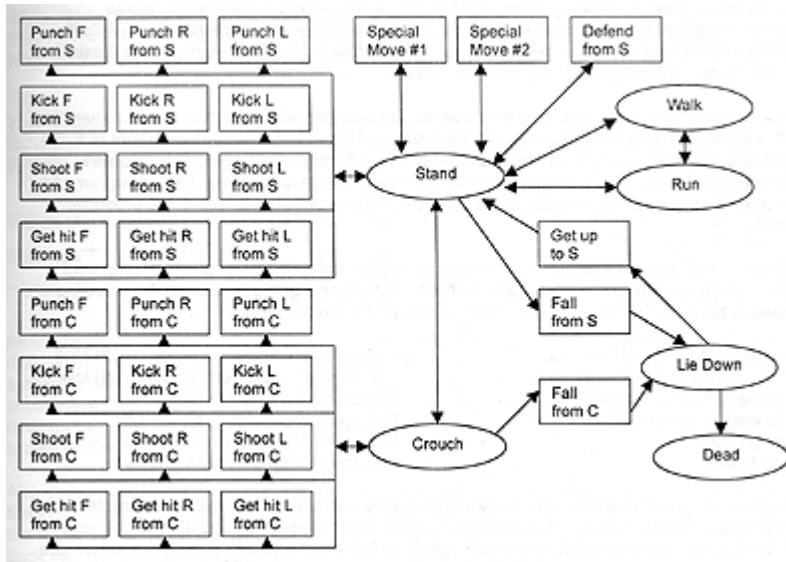
You can use still images (e.g. “grease pen” tool in Blender) to create shots, or:

- i) bring in two Mixamo characters,
- ii) create control rig with Mixamo plugin
- iii) pose the characters using IKs in pose mode



Flow graph

- For non-linear mocap sessions create a flowgraph (i.e. game animations like Unity mechanim, not single long scripted performances)



Look at your mo-cap flowchart and see if your character can easily transition from each move to any other. You'd do this no matter how the animation was being created, but with motion capture, **you can't have an animator create the missing move without a re-shoot.**

This animation list and flowchart would lead to many questions. For example:

- Does the character have to stand up from a crouch before he can walk or run?
- Does the character have to stop walking or running to fight?
- If Superguy is hit hard enough to fall, is that all one move (fall) or will it be a combination of motions (e.g., Get Hit from Stand/Stand/Fall from Stand)?
- If the character is walking, can he transition to a stop or to a run from either foot? Or does one walk cycle have to be completed before the transition?
- If the enemy characters are different sizes, where will the punch and kick attacks connect on each of them?
- Will each of the enemy attacks (which would be listed on their move lists) cause the same "get hit" reaction on Superguy?
- Does Superguy have a gun at all times, or does he pick it up or pull it from a holster?
- What are the parameters for the Special Moves?

Shot list

- Organise in order of mocap session performance capture
- Group according to Talent, size of capture space, special set-ups (e.g. rigs), logical progression of moves.

Filename	Location / Space	Character Name	Talent	Scene / Move Name	Loop or Transitional	Description	Duration (seconds)	Action / Variation	Take Number	Props	Special Setup
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File Name	Character	Move Name	Start	End	Fr Ct	Props	Description
SGSL001A	Superguy	Standing Loop	--	--	6	N	Standing, arms at sides. Rock side to side slightly, looking tough. No gun.
SGSA001A	Superguy	Punch Forward from Standing	s	s	15	N	Throws quick jab forward from standing position.
SGSA001A	Superguy	Shoot Right from Standing	s	s	15	Gun	Pull out gun and shoot to right, replace gun.

Filename (generated from ruleset) with reference to [Discussion of naming conventions](#)

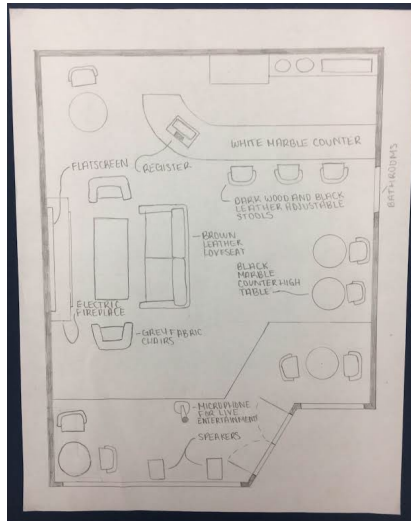
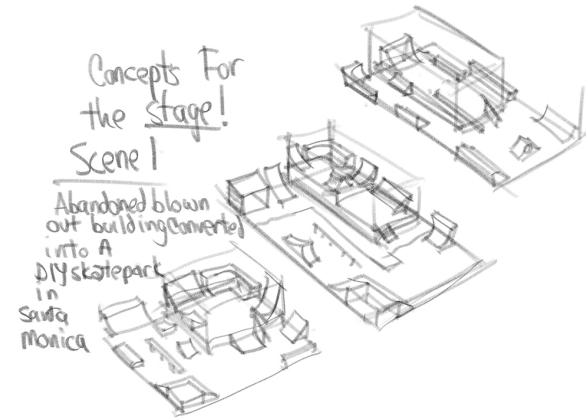
FILENAME	20220526-respect-livingroom-arabicPOV-birth-main-001
Shoot Date	20220526-respect-livingroom-arabicPOV-birth-main-001
Project ID	20220526- respect -livingroom-arabicPOV-birth-main-001
Location / Capture Space	20220526-respect- livingroom -arabicPOV-birth-main-001
Character Name	20220526-respect-livingroom- arabicPOV -birth-main-001
Scene Name	20220526-respect-livingroom-arabicPOV- birth -main-001
Action / Variation Name	20220526-respect-livingroom-arabicPOV-birth- main -001
Take Number	20220526-respect-livingroom-arabicPOV-birth-main- 001

Tick checkbox when shoot is complete. The next (potential) take will be created.

A	B	C	D	E	F
Filename	<input checked="" type="checkbox"/>	Shoot	Location / Scene / Space	Character Name	Talent
20220526-respect-Livingroom-arabicPOV-BirthPickUp-main-001	<input checked="" type="checkbox"/>	20220526	Livingroom	arabicPOV	Example Pers
20220526-respect-Livingroom-arabicPOV-BirthPickUp-main-002	<input type="checkbox"/>	20220526	Livingroom	arabicPOV	Example Pers

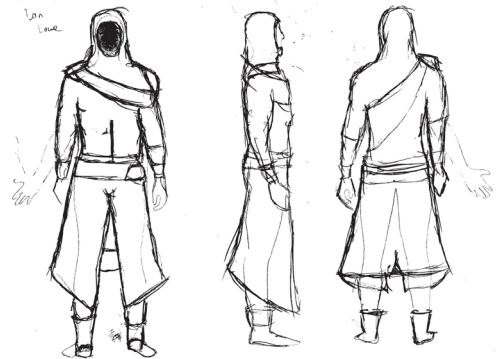
Appendix: Environment & Prop measurements

scene and prop measurements, which correspond to the game environment, and will help with understanding any limitations to the performed motion, size and shape of room, location of props, etc.



Appendix: Character reference document

Also include approved sketches of the game characters in costume. Anything that's flowing, like long hair or a coat or cape, is going to need special attention from both the animators and the studio personnel. You may be able to create a special motion capture costume or prop to track the motion of tricky costume elements. When you do a test shoot, you can see if it works properly.



For our shoot we will need:

- Run sheet (already provided)*
- Checklist (already provided)*
- Animation list
- shot list
- storyboard
- animatic

optional

- (optional)** Character sketch and basic environment design

For Tomorrow:

Bring and continue to develop mocap plan documents