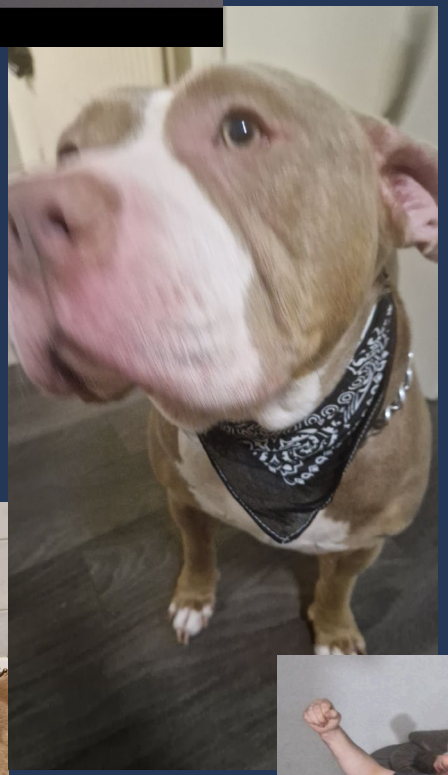
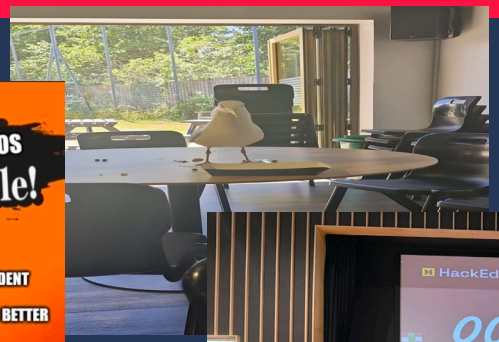
Windscape game

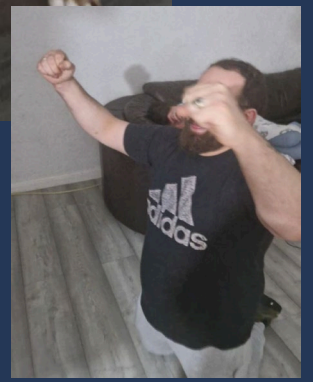
Presentation

About me (Patrick's version)

- I'm 17 , 18 in december
- Family is from portugal
- Inspiring engineer
- Studying math , physics and computer science
- Hobbies – guitar , playing games and going on walks
- Random fact I have 4 animals right now and they all share one braincell

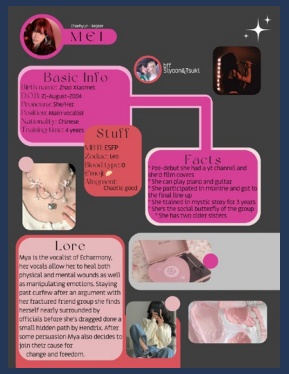


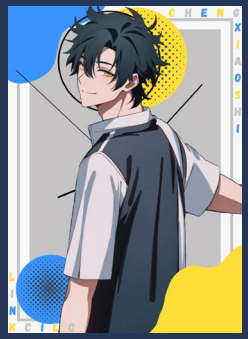


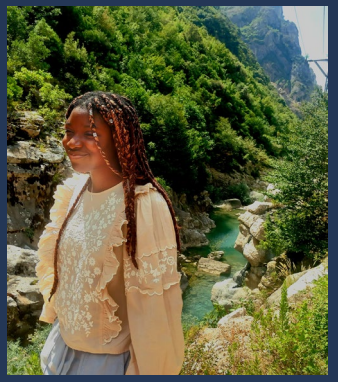


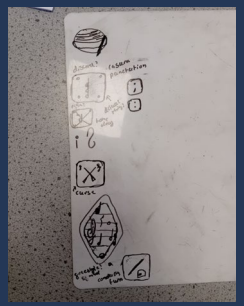
About me – Haziqah

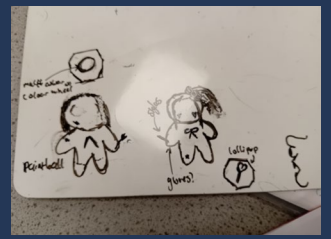
- I'm 16 turning 17 this week
- Play Netball, Athletics(Sprints), Violin
- Studying Graphics, PE and Chemistry

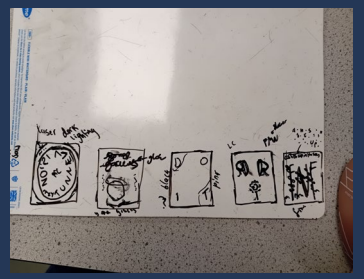












Introduction

Our task – Create a game for the Windscape museum that accurate represents everything about how a windfarm operates

Goals :

- Learning about Equinor and job roles
- Creating a viable prototype
- Improving ourselves

Research

- We used visits, observation and conversations to understand how wind farms operate and how museums use games.

IN-PERSON RESEARCH

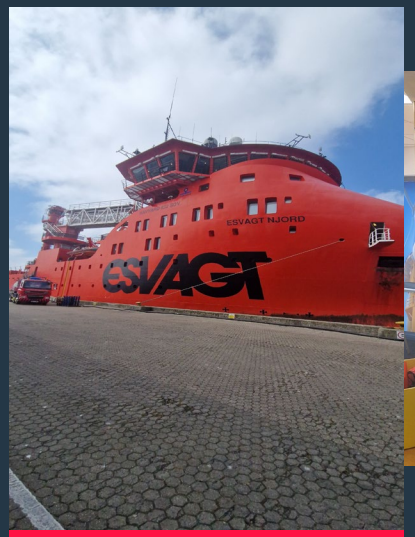
Tour of the ESVAGT NJORD and visits to Windscape Museum and the Science Museum.

OBSERVATION

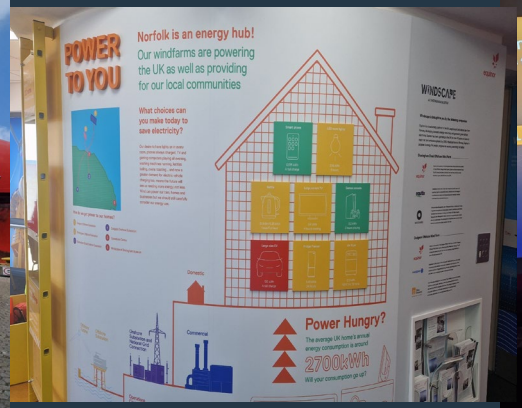
We studied interactive exhibits, visitor behaviour and how information was presented.

CONVERSATIONS

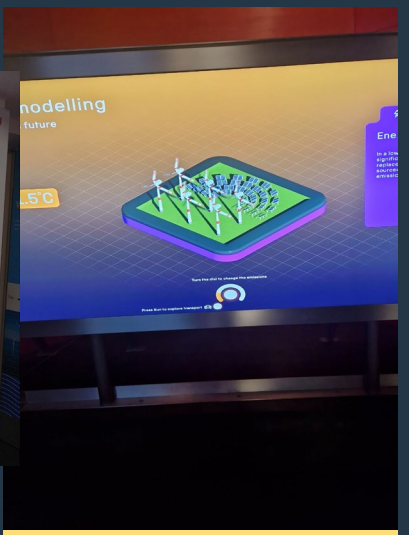
We learned about communications, safety, engineering, logistics, finance and other roles. (I also met such wonderful people that im going to hate my part time job when I get in university – Patrick)



ESVAGT NJORD



WINDSCAPE



SCIENCE MUSEUM

The research showed that a wind farm depends on a wide workforce — not only the people working directly on the turbines but also the people onshore.

RESEARCH INFORMED THE GAME'S JOBS, LEVELS AND LEARNING CONTENT

Stakeholders, target audience

- Stakeholders
  Equinor – project partner and source of wind-sector knowledge
  Windscape at Sheringham Museum – venue, exhibit and visitor experience
  Museum staff and teachers – support learning and accessibility
- Target audience
  Younger teenagers, families and school groups
  Visitors with little previous knowledge of offshore wind
  Players using the museum touch table for a short, interactive experience

Audience

The main aim of this game is,

to teach people the different jobs and roles involved in offshore wind, especially the lesser-known ones which tend to be the ones onshore.

This has been achieved by;

- Making sure each task in the game is related to a different job
- A bar along the bottom that when clicked pops up and explains the job and the skills involved.
- A level in the game which is directly for the different jobs involved and assign roles to people

The main target audience for this game is younger teens;

- More likely to use the touch table
- Smaller children can't reach
- Help inform future subject and job choices

Ideas and logisitics (timing, money, wining/losing, name)

The game will use three short levels so the player can experience onshore planning, the journey offshore and turbine maintenance.

Each level should take around 3 minutes

Tasks should normally take 10–15 seconds

Players gain or lose diamond currency depending on their choices

SCADA gives instructions, feedback and extra information

A working name is the Windscape Wind Farm Game

Initial game idea

Our first thought on how the game should behave is for a *3-level* style game.

Museum games are supposed to be **short , quick and entertaining** for engagement from a young audience.

So, the biggest problem was to implement the entire work force of Equinor into the game without it being overwhelming.

Based on our research and our introduction on how Equinor works we decided on a 3 level layout:

- **Level one** – *project management (office level)*
  How to plan and execute a windfarm
- **Level two** – *safety management (vessel level)*
  Transition from onshore to offshore
- **Level three** – *maintenance (wind turbine level)*
  How a wind farm is maintained

Timing

Timing is an important feature so that it stays engaging by not being too slow or too fast.

At the start of the project the goal was **3 minutes** due to research that showed that this was the average engagement time - **However** this would've meant the game would be too short.

- A minute for each level
- Only 10 – 15 seconds for the tasks

not even including explaining the game

After going to the Science museum in London and playing and observing others play, I noticed that;

- Their games were short (around the 3 minutes)
- But had more screens in the museums
  So, they wouldn't want people taking too long on a game

The Windscape exhibit is different as there is only one screen, so;

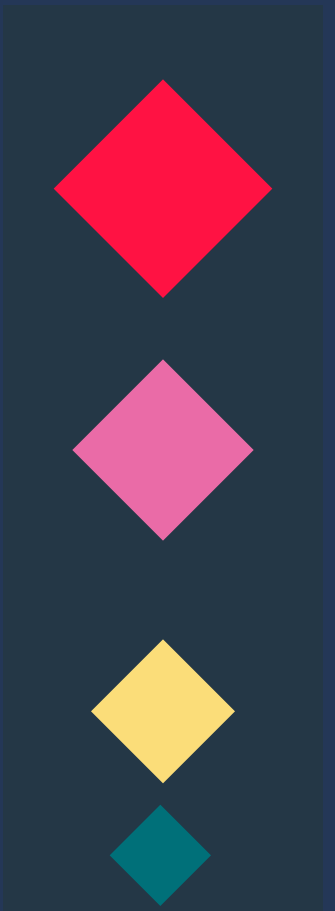
- Our game could be longer that 3 minutes
- But still not too long – so that the game is completed

Making each level last 3 minutes means that engagement would still be up as there would be a different background/situation after 3 minutes.

Money

To help with engagement and to make it more gamelike we added the idea of being able to gain and lose money depending on how well you do each task. This means that it is also possible to lose if you run out of money/don't have enough

The sign for the currency would be a **diamond** as that is the shape on the Equinor logo, it would either be upright or pointing to the right.



Art style – Initial idea

My first ideas for the art style was based on the Equinor logo

Geometric shapes
Diamonds

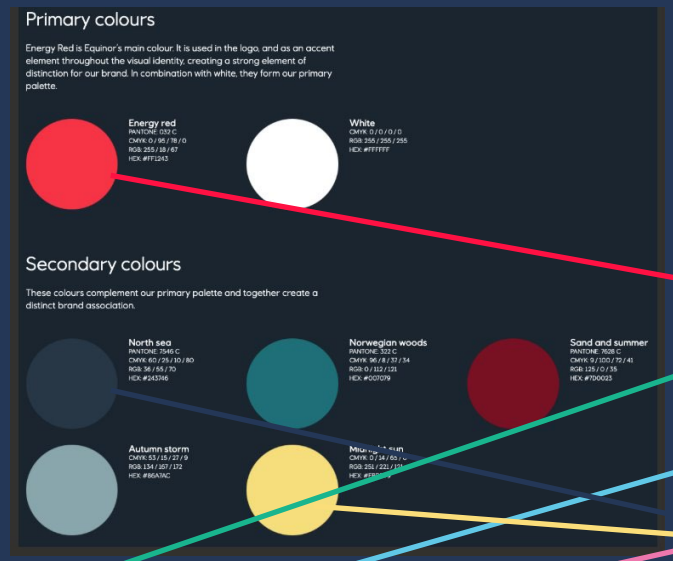
Rounded edges
Softer design

Red = Primary colour
Orange = next to red on the colour wheel

Blue and green = accent colour
Complementary
Balance

Final art style

The final style changed to comply with the house style of Equinor and the Sherringham museum



Combining;

- Keeps style of museum
- Shows who produced by

19B58E
61C8E7
EE77AD
FF1243
FBDD79
243756

19B58E Mint Leaf
61C8E7 Sky Blue (Light)
EE77AD Rose Kiss
F22E27 Racing Red
FFCB06 Bright Amber
00629F Baltic Blue

Fonts

Before we had Equinor's font we were planning on using two different fonts,
- one for headings and that would look more decorative
- and one that was easier to read for most of the text

The **decorative font** is more cursive and larger as it for headings and parts of the game with only a small number of words.
Even though this font may be harder to read it may make the different sections easier to see.

The **second font** was easier to read due to;
- Round and square shapes
- lines and shapes clear

makes it easier for younger children and more accessible for everyone and less time consuming.

Using the same font will make the game and the design more cohesive but even when using a bold version of the font there will not be as much contrast, but this may not be as important in a game compared to other designs disciplines.

Character design

The characters need to be simple, friendly and easy to recognise on a museum touch screen.

Round shapes and edges make the design softer and more inviting for a younger audince as well as bright colours.

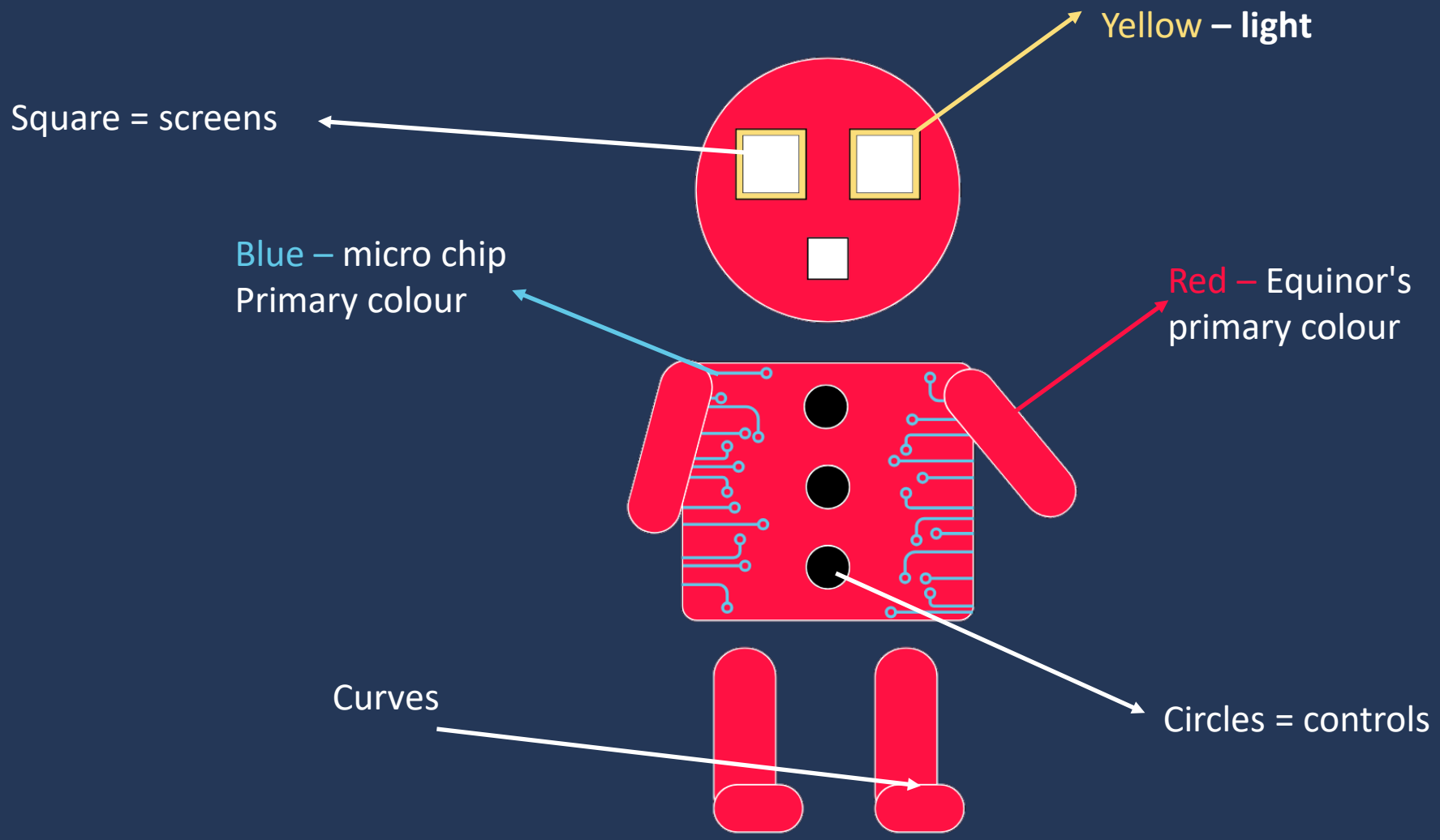
The playable characters should have different shapes, clothing and colours so their roles can be understood quickly.

SCADA has a more square body to show that they are not playable and that they are there to help.

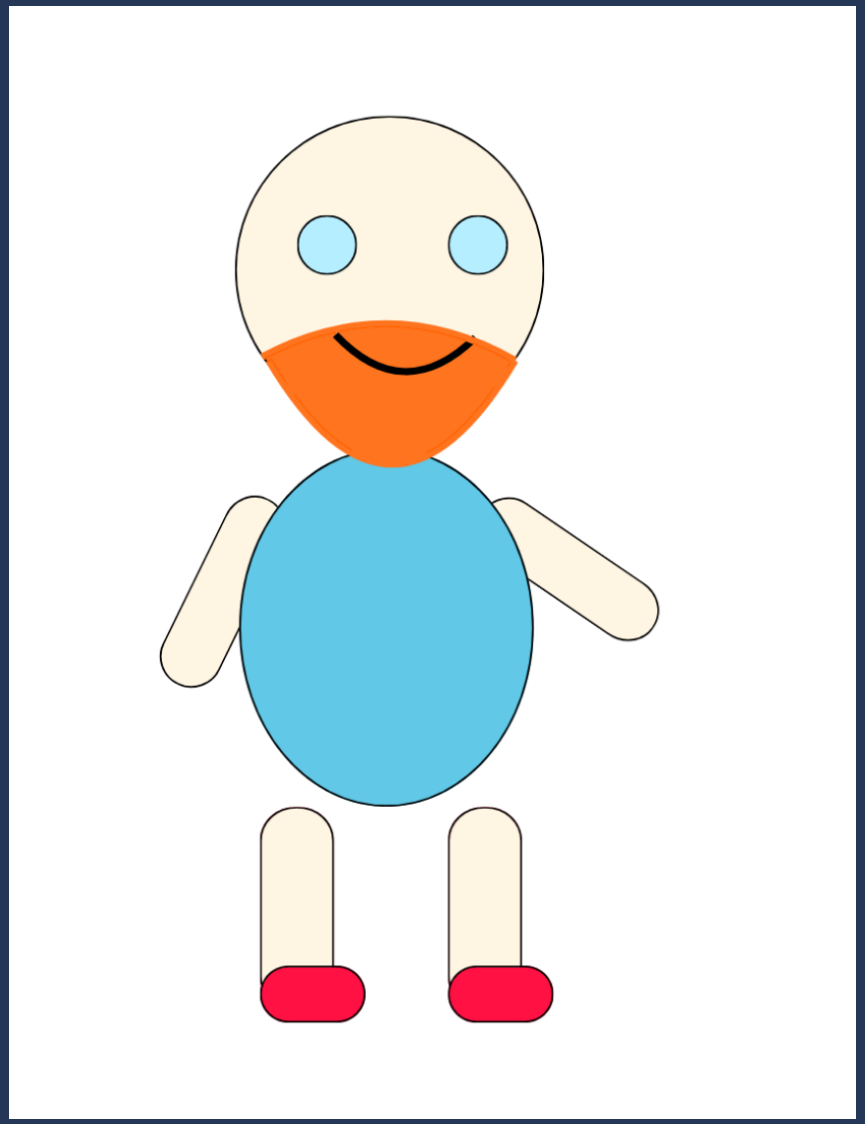
SCADA Character

- SCADA stands for Supervisory Control and Data Acquisition. In real wind farm operations, SCADA systems collect and display information about equipment and performance.
- In the game, SCADA acts as the player's guide. It explains tasks, records progress, gives feedback and introduces facts about each job.
- The screen-like face, controls and microchip-inspired edges show that the character is digital and full of information.

SCADA Character design

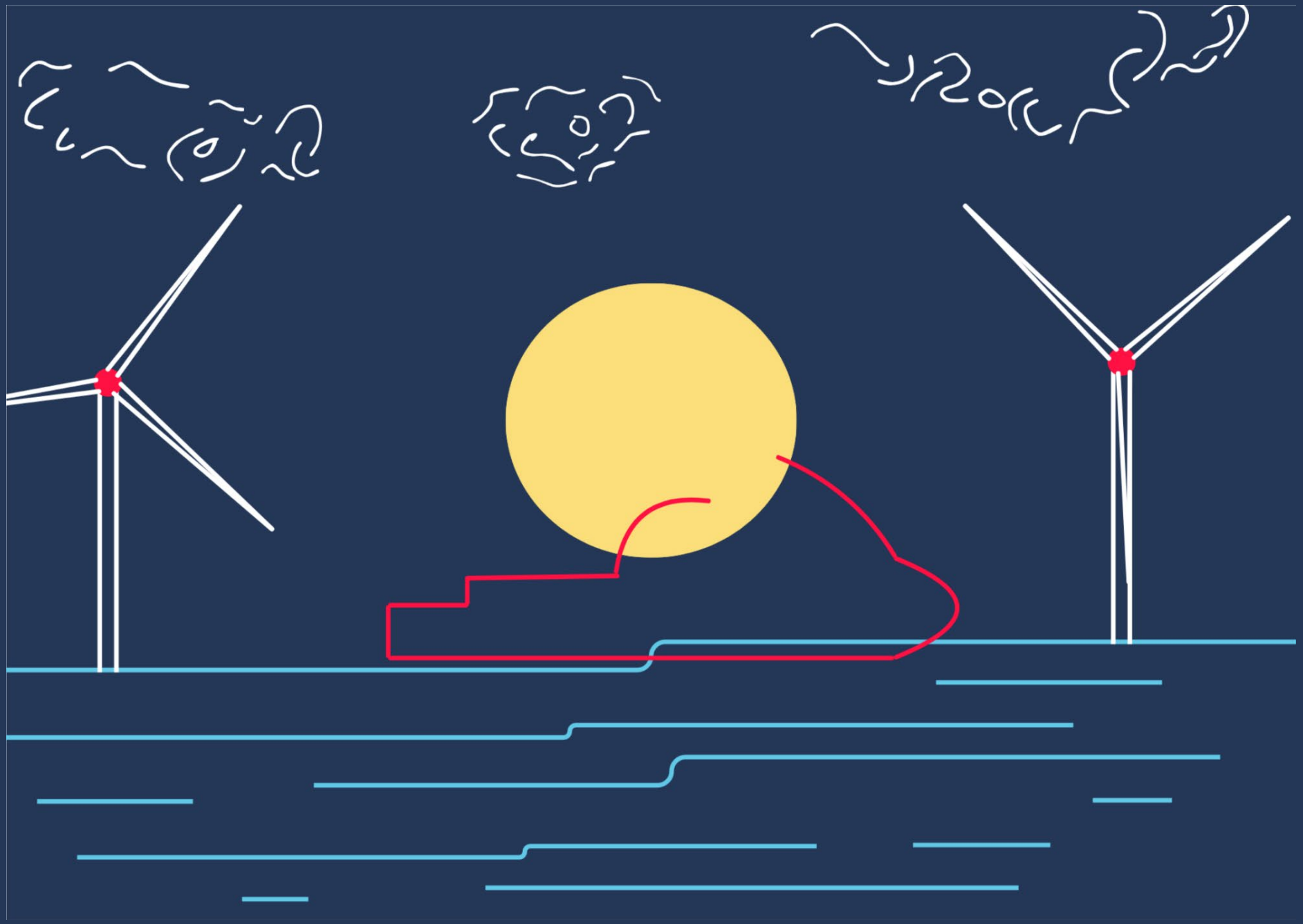


Character design



Design and levels

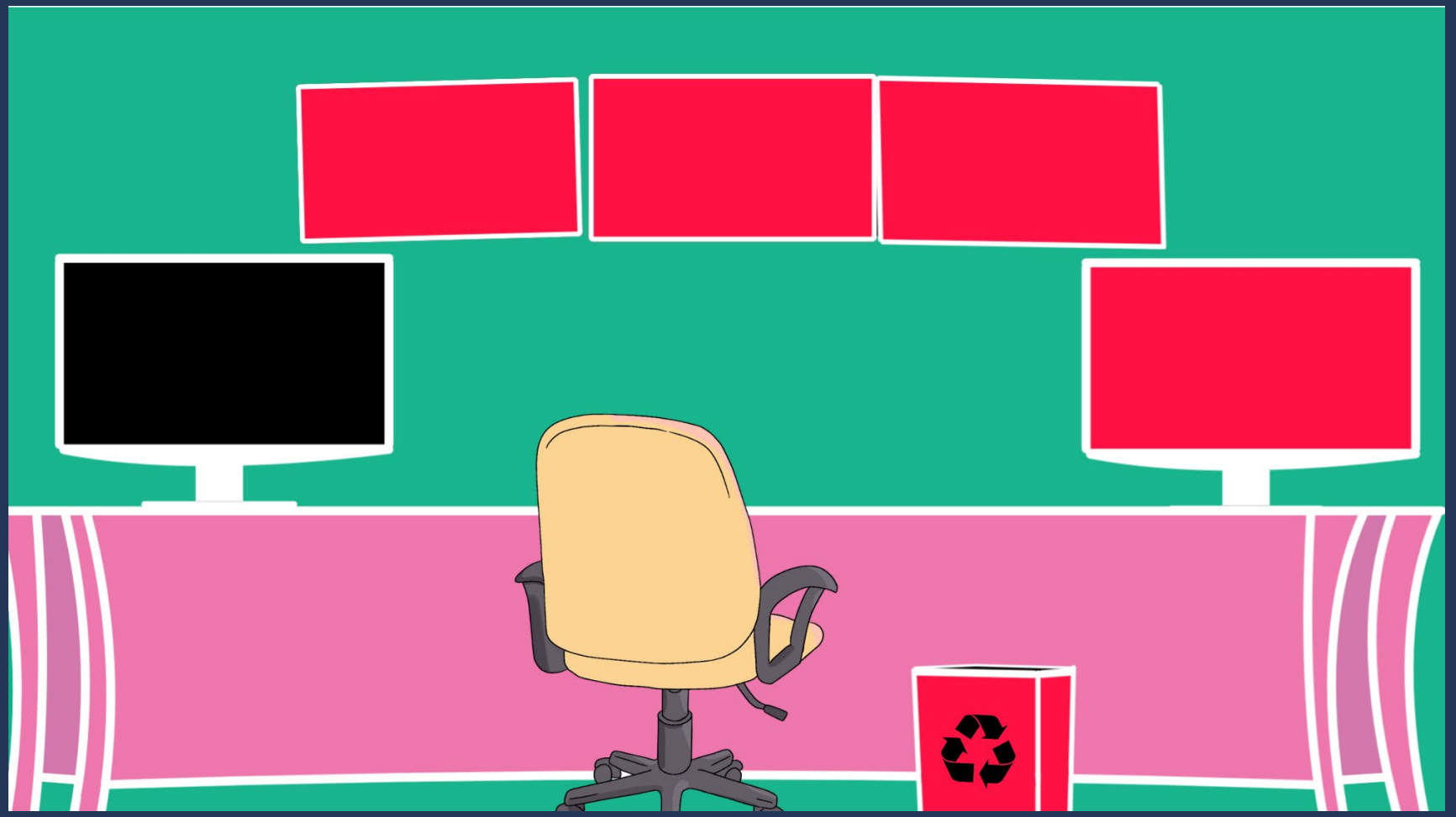
- The game is divided into three locations that follow the journey of operating a wind farm:
- Level 1 – onshore planning and project management
- Level 2 – safety and travelling offshore on the vessel
- Level 3 – turbine maintenance and energy production
- The locations and tasks change between levels, but the controls, colour scheme, currency and SCADA guide remain consistent.



Main screen

- The main screen is inspired by a wind farm control room. It works as the central hub where the player can select levels, view progress and learn more about the project.
- Different screens lead to the onshore, vessel and turbine sections.
- Large buttons and clear labels make the screen easier to use on the museum touch table.
- SCADA can explain what each option does.

Main screen design



Inspired by the control room. The different screens will lead to different levels and more information.
The colours mostly match with the Sheringham museum so it can be more easily integrated and not look out of place in the museum.

Level 1 – Onshore

Level 1 shows the different jobs and tasks on the **onshore** side of a wind farm - planning and production before the wind farm is up and running.

This would include;

- Multiple choice questions about the windfarm to gain money.
- Hiring the right people and amount to work on your wind farm.
- Accepting and rejecting contracts
- Random pop-up tasks and knowledge
  - Talking to the press/public
  - Archaeology
- Creating a path from the wind turbines to the onshore substation

Did you know?
Archeology digs need to be carried out before digging can be started with the cables
What type of things do you think they find?

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Archeology digs need to be carried out before digging can be started with the cables
What type of things do you think they find?

!

The public want to know how much noise the wind farm and construction will generate.
What will you tell them?

- There will be no noise
- The noise will be unbearable
- There will be noise during contruction but after there will be none

The public were not pleased when they found out how much noise was actually generated in construction.
You were fined◊1000

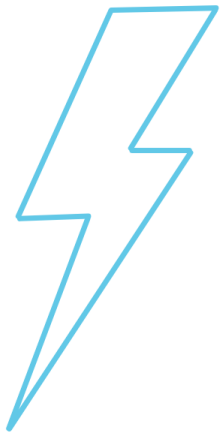
The public were unimpressed they filed complaints and rejected the cnstruction of your windfarm.
Start over

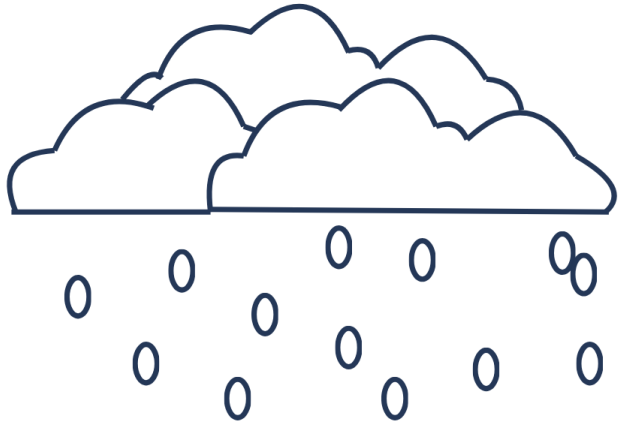
The public were pleased with the honesty some people were still displeased but you were given permission to start construction.

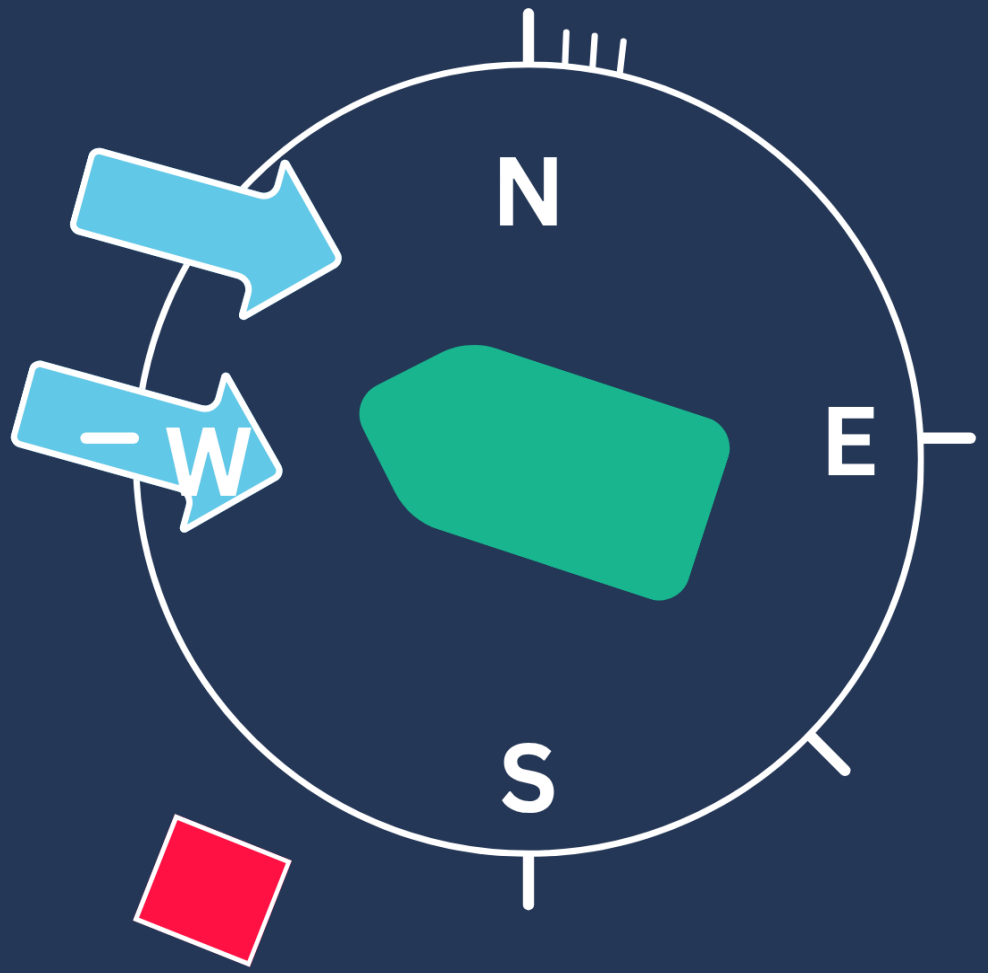
Level 2 – Transition

Level 2 would be showing the transition from onshore to offshore this would include;

- Looking at weather and sea conditions to determine if it's safe for the boat to leave
- Finding the safety concerns
- Animations/sequences of the boat moving to the wind farm
  - pop-up about animals
- Inside of the boat and what is on it
- Rotating yaw and blades so it's safe for the boat to join to the wind turbine
- Getting the jack-up vessel to the right level to connect properly to the wind turbine



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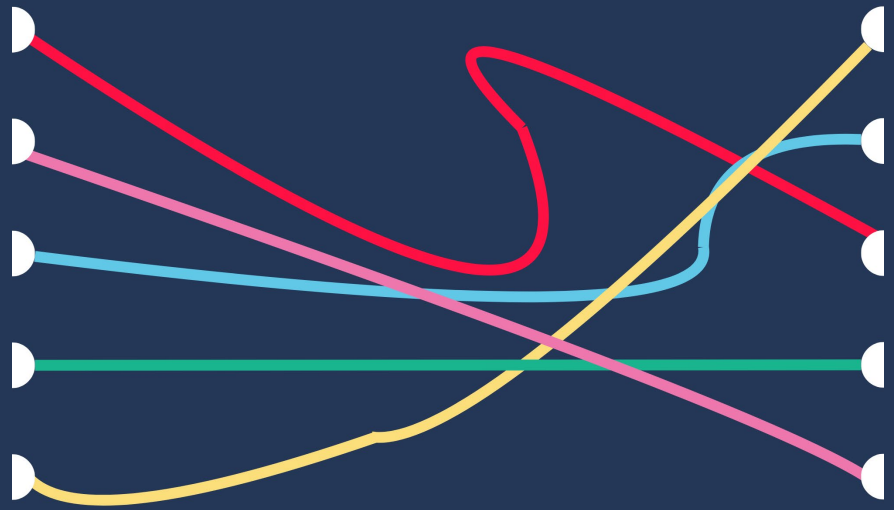
Level 3 – Offshore

Level 3 would include the practical offshore tasks and what is needed to be done to maintain a windfarm to keep it safe and productive. This would include;

- Cleaning grease
- Wires
- Drone inspection
- ROV
- Planned and unplanned maintenance
- Right wind level that will allow max amount of energy production

Safety, maintenance and energy production must be balanced



Action at the end of game

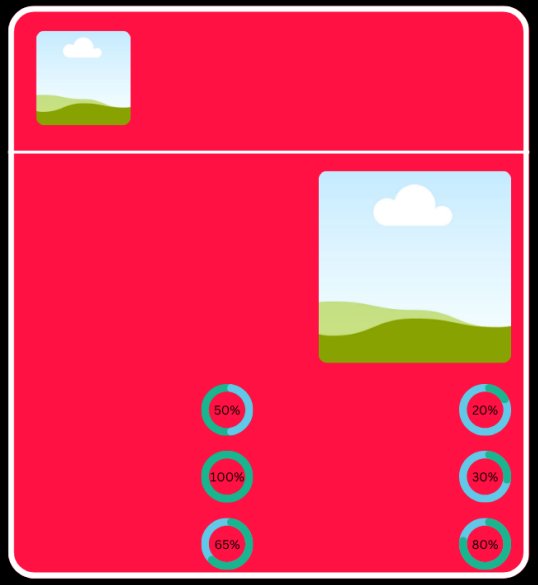
Once the game ends the player can;

- See their score
- How much money they have
- The wind farm roles they've discovered

A QR code at the end would lead them to;

- More information about wind and renewable energy
- Careers involved

This will also that it is possible to see how engaging the game is.


50%
20%
100%
30%
65%
80%

Scan to try the prototype of the game (will only work on andriod sorry)