Scratch

1. What is Block programming? write any four benefits of block programming.

→ Block programming is the way of programming where codes are in block which can be dragged and drop instead of typing codes manually. It is beginner friendly programming designed to help new learners and kids.

The 4 benefits of block programming are given as:-

- Visual learning → Block programming has drag and drop interface.
- Modularity → Code can be reused, which encourages in efficient programming practices.
- Collaboration → It allows for easy sharing and collaboration enhancing community learning.
- Immediate feedback → The result of the code can be immediately seen which helps in learning and encourages experimentation.

2. What is Scratch? Write any four features.

→ Scratch is block-based visual programming language developed by MIT which is used for creating interactive stories, games and animations.

-The four features of Scratch are given as:-

a) Scratch is easy to learn → It is very easy to learn. Scratch interface is designed keeping young learners in mind, making learning to code fun and interactive.

b) Scratch is beginner friendly → Scratch is designed to learn programming concepts in an interactive and fun way. Basic coding and programming concepts are easy to learn and Scratch makes it very easy to learn.

c) Scratch is safe. → Scratch is completely safe platform, we can set our project visibility either private or public according to our wish.

d) Scratch is suitable for all age group → Scratch coding is suitable for kids, teenagers or people of all ages. Basically for all beginners as well as people with coding experience can come and use it to make games, animations with motive of learning basic programming and coding.

8. Define
stage, block, palette, Scripts Area, Sprite list and menu Bar.

i) Stage → It The place where our games, animation stories are displayed or shown is Stage. It is the main Area where our program output is shown.

ii) Blocks palette → It is the place where code blocks are present kept under 9 divisions as well as is appeared when clicked on code tab. It is the place from where we drage the code from.

iii) Scripts Area → It is the place where we code by dragging and dropping code blocks from block palette Area.

iv. Sprite list → It is the place under Stage Area where all Sprites names and thumbnails are displayed.

v. Menu bar → Uppermost Area which is used for project management (Save, load, etc) and adjust the environment.

4. What are the types of blocks on the basis of shape?

→ The types of blocks on the basis of shape are given as:-

a) Hat → Hat blocks are at the top of code and start a script. They are triggered by clicking green flag, sprite, etc. There are 26 hat blocks.
Example:- When green flag clicked

b) Stack → Stack blocks ~~are flat at top~~ have notch at top and bump at the bottom, They are most common and central part of the script.

c) Boolean → It is hexagonal shape. It returns either true or false in conditions.
example → touching mouse-pointer?

d) Reporter → In oval shaped, They return a value.
example → mouse x, length of "apple"

e) C-Block → They are wrappers around other blocks like a C-shape. It stands for control blocks
example → if <....> then [...]

f) Cap block → ~~Flat~~ notched on top, rounded at bottom. It is used for ending the script.
example → stop all
→ Stop this script

* List and explain 8 block categories in Scratch

→ Block categories explained below:-

a) Control

a) motion → It is in color blue, It is used for moving, turning, etc the b sprites, stage around the stage.

example → move 10 steps

b) Looks → Purple coloured blocks used for changing sprite appearance.

examples → say "hello" for 2 seconds

→ show, hide

c) Sound → Pink/~~red~~ coloured used for adding sound and music.

example → Start sound [pop]

d) Events → Yellow coloured used as trigger to start scripts when something happens.

e) control → Orange coloured used for controlling the flow of codes/actions.

example → wait 1 seconds

f) Sensing → Light blue colored used for detection of user input or environment.

example → touching [mouse-pointer] ?

g) Operators → Green colored used for performing math, logic or text operations.

h) Variables → Dark orange colored used for storing and changing value.

i) My blocks → Red coloured used for creating custom own blocks. It is used for reusing codes.