Core functionalities Source Code Group-7(Team Chat App)

1.User Registration, sign in, sign out, delete account via clerk: This code wraps up the children content with various providers that handle different functionalities. ClerkProvider manages authentication, ThemeProvider handles UI themes (defaulting to dark mode and not supporting system preferences), SocketProvider facilitates real-time socket communication, and QueryProvider likely deals with data fetching or state management. The layout also ensures accessibility with language settings and supports theme-based background color customization.

```
efault function RootLayout({
children: React.ReactNode
  <ClerkProvider>
    <html lang="en" suppressHydrationWarning>
      <body className={cn(</pre>
        font.className,
        "bg-white dark:bg-[#313338]"
      ) }>
        <ThemeProvider
          defaultTheme="dark"
          enableSystem={false}
          storageKey="discord-theme"
              {children}
            </QueryProvider>
          </SocketProvider>
        </ThemeProvider>
```

Adding the middle ware to access the routes of the clerk api.

```
export const config = {
  matcher: ['/((?!.+\\.[\\w]+$|_next).*)', '/', '/(api|trpc)(.*)'],
};
```

Then using the sign in, signup and sign in pages provided by the clerk in the app specific routes.

```
import { SignIn } from "@clerk/nextjs";
export default function Page() {
  return <SignIn />;
}
```

```
import { SignUp } from "@clerk/nextjs";
export default function Page() {
  return <SignUp />;
}
```

2. UI Theme toggle(dark, light, system default), navigation bar with create server, user account signout and delete account inside manage account. This asynchronous React component NavigationSidebar fetches the current user's profile and the servers they are a member of from the database. If no profile is found, it redirects to the home page. It then renders a navigation sidebar with UI elements for navigating between servers, a separator, and a scrollable area for server items. At the bottom, it includes a theme toggle and a user button for sign-out functionality, styled specifically for the sidebar context.

```
const NavigationSidebar
const profile = await currentProfile();
  return redirect("/");
const servers = await db.server.findMany({
 where: {
   members: {
       profileId: profile.id
   className="space-y-4 flex flex-col items-center h-full text-primary w-full dark:bg-[#1E1F22]
og-[#E3E5E8] py-3"
     className="h-[2px] bg-zinc-300 dark:bg-zinc-700 rounded-md w-10_mx-auto"
      {servers.map((server) => (
        <div key={server.id} className="mb-4">
           id={server.id}
           imageUrl={server.imageUrl}
    </ScrollArea>
    <div className="pb-3 mt-auto flex items-center flex-col gap-y-4">
        appearance={{
           avatarBox: "h-[48px] w-[48px]"
```

3. Mode toggle for theme UI : The `ModeToggle` function is a React component that renders a button triggering a dropdown menu, allowing users to switch between light, dark, or system UI themes, utilizing the `useTheme` hook for theme management.

```
export function ModeToggle() {
  const { setTheme } = useTheme()
```

```
<DropdownMenuTrigger asChild>
      <Button className="bg-transparent border-0" variant="outline" size="icon">
dark:scale-0" />
        <Moon className="absolute h-[1.2rem] w-[1.2rem] rotate-90 scale-0 transition-all</pre>
        <span className="sr-only">Toggle theme</span>
      </Button>
      <DropdownMenuItem onClick={() => setTheme("light")}>
        Light
      </DropdownMenuItem>
      <DropdownMenuItem onClick={() => setTheme("dark")}>
      //DropdownMenuItem>
      <DropdownMenuItem onClick={() => setTheme("system")}>
        System
      </DropdownMenuItem>
    </DropdownMenuContent>
  </DropdownMenu>
```

4. create server modal : The `CreateServerModal` component allows users to create a new server by submitting a form with a server name and image, utilizing form management with validation and integrating an Axios POST request for server creation, with UI controls for modal display based on state.

```
const CreateServerModal
const { isOpen, onClose, type } =
                                  useModal();
const router = useRouter();
const isModalOpen = isOpen && type === "createServer";
const form = useForm({
 resolver: zodResolver(formSchema),
   imageUrl: "",
const isLoading = form.formState.isSubmitting;
const onSubmit = async (values: z.infer<typeof formSchema>) => {
   await axios.post("/api/servers", values);
   form.reset();
   router.refresh();
   onClose();
   console.log(error);
const handleClose = () => {
 form.reset();
 onClose();
 <Dialog open={isModalOpen} onOpenChange={handleClose}>
```

```
<DialogContent className="bg-white text-black p-0 overflow-hidden">
       <DialogHeader className="pt-8 px-6">
  <DialogTitle className="text-2xl text-center font-bold">
           Customize your server
         </DialogTitle>
           Give your server a personality with a name and an image. You can always change it later.
         </DialogDescription>
       </DialogHeader>
       < Form { . . . form} >
              onSubmit={form.handleSubmit(onSubmit)} className="space-y-8">
                className="space-y-8 px-6">
             <div className="flex items-center justify-center text-center">
               <FormField
                 name="imageUrl"
                   <FormItem>
                         endpoint="serverImage"
                         onChange={field.onChange}
             <FormField
               control={form.control}
               name="name"
                   <FormLabel
                     className="uppercase text-xs font-bold text-zinc-500 dark:text-secondary/70"
                     Server name
                       disabled={isLoading}
                       className="bg-zinc-300/50 border-0 focus-visible:ring-0 text-black
focus-visible:ring-offset-0"
                 </formItem>
           <DialogFooter className="bg-gray-100 px-6 py-4">
             <Button variant="primary" disabled={isLoading}>
               Create
             </Button>
           </DialogFooter>
       </Form>
```

5.Invite code functionality: The `InviteModal` component enables users to invite friends to a server by copying or generating a new invite link, incorporating state management for loading and copied states, and using Axios to update the invite code, all within a modal UI.

```
const InviteModal = () => {
const { onOpen, isOpen, onClose, type, data } = useModal();
const origin = useOrigin();
const isModalOpen = isOpen && type === "invite";
const { server } = data;
const [copied, setCopied] = useState(false);
const [isLoading, setIsLoading] = useState(false);
const onCopy = () => {
  navigator.clipboard.writeText(inviteUrl);
  setCopied(true);
  setTimeout(() => {
    setCopied(false);
 const onNew = async () => {
     setIsLoading(true);
     const response = await axios.patch(`/api/servers/${server?.id}/invite-code`);
     onOpen("invite", { server: response.data });
    catch (error) {
     console.log(error);
     setIsLoading(false);
  <Dialog open={isModalOpen} onOpenChange={onClose}>
     <DialogContent className="bg-white text-black p-0 overflow-hidden">
      <DialogHeader className="pt-8 px-6">
     <DialogTitle className="text-2xl text-center font-bold">
           Invite Friends
         </DialogTitle>
       <div className="p-6">
           className="uppercase text-xs font-bold text-zinc-500 dark:text-secondary/70"
           Server invite link
         </Label>
           liv className="flex items-center mt-2 gap-x-2">
             className="bg-zinc-300/50 border-0 focus-visible:ring-0 text-black
focus-visible:ring-offset-0"
             value={inviteUrl}
           <Button disabled={isLoading} onClick={onCopy} size="icon">
                 <Check className="w-4 h-4" />
           </Button>
          onClick={onNew}
```

6.Chat input component : The `ChatInput` component allows users to send messages or files within a chat environment, integrating a form for message content submission with additional options for uploading files and inserting emojis, enhancing interactive and dynamic communication capabilities in the application. **ChatItem Component :** The `ChatItem` component renders individual chat messages, supporting message editing, deletion, file previews (images/PDFs), and navigating to a member's conversation, leveraging state management for editing mode and integrating custom hooks for forms and modals, all within a responsive design.

```
const ChatInput = ({
apiUrl,
query,
type,
 ChatInputProps) => {
const { onOpen } = useModal();
const router = useRouter();
const form = useForm<z.infer<typeof formSchema>>({
 resolver: zodResolver(formSchema),
 defaultValues: {
   content: "",
const isLoading = form.formState.isSubmitting;
const onSubmit = async (values: z.infer<typeof formSchema>) => {
    const url = qs.stringifyUrl({
     url: apiUrl,
   await axios.post(url, values);
    form.reset();
   router.refresh();
    console.log(error);
    <form onSubmit={form.handleSubmit(onSubmit)}>
     <FormField
          <FormItem>
            <FormControl>
              <div className="relative p-4 pb-6">
```

ChatItem Component:

```
const ChatItem = ({
member,
timestamp,
fileUrl,
deleted,
currentMember,
isUpdated,
socketUrl,
socketQuery
: ChatItemProps) => {
const [isEditing, setIsEditing] = useState(false);
const { onOpen } = useModal();
const params = useParams();
              useRouter();
const onMemberClick = () => {
                   currentMember.id) {
   router.push(`/servers/${params?.serverId}/conversations/${member.id}`);
useEffect(() => {
  const handleKeyDown = (event: any) => {
      (event.key
      setIsEditing(false);
  window.addEventListener("keydown", handleKeyDown);
  ceturn () => window.removeEventListener("keyDown", handleKeyDown);
```

```
const form = useForm<z.infer<typeof formSchema>>({
  resolver: zodResolver(formSchema),
   defaultValues: {
 const isLoading = form.formState.isSubmitting;
 const onSubmit = async (values: z.infer<typeof formSchema>) => {
     const url = qs.stringifyUrl({
       query: socketQuery,
     });
     await axios.patch(url, values);
     form.reset();
     setIsEditing(false);
     console.log(error);
useEffect(() => {
   form.reset({
 const fileType = fileUrl?.split(".").pop();
const isAdmin = currentMember.role === MemberRole.ADMIN;
const isModerator = currentMember.role === MemberRole.MODERATOR;
const isOwner = currentMember.id === member.id;
const canDeleteMessage = !deleted && (isAdmin | |
                                                           isModerator || isOwner);
const canEditMessage = !deleted && isOwner && !fileUrl;
const isPDF = fileType === "pdf" && fileUrl;
const isImage = !isPDF && fileUrl;
        className="relative group flex items-center hover:bg-black/5 p-4 transition w-full">
iv className="group flex gap-x-2 items-start w-full">
<div onClick={onMemberClick} className="cursor-pointer hover:drop-shadow-md transition">
          <UserAvatar src={member.profile.imageUrl} />
          <div className="flex items-center gap-x-2">
             <div className="flex items-center">
               cursor-pointer">
                 {member.profile.name}
               <ActionTooltip label={member.role}>
                 {roleIconMap[member.role]}
               </ActionTooltip>
                  n className="text-xs text-zinc-500 dark:text-zinc-400">
               {timestamp}
          {isImage && (
               href={fileUrl}
               target=" blank"
```

```
rel="noopener noreferrer"
            className="relative aspect-square rounded-md mt-2 overflow-hidden border flex
items-center bg-secondary h-48 w-48"
              src={fileUrl}
              alt={content}
              fil1
              className="object-cover"
          <div className="relative flex items-center p-2 mt-2 rounded-md bg-background/10">
            <FileIcon className="h-10 w-10 fill-indigo-200 stroke-indigo-400" />
              href={fileUrl}
              target=" blank"
              rel="noopener noreferrer"
              className="m1-2 text-sm text-indigo-500 dark:text-indigo-400 hover:underline"
              PDF File
        ) }
        {!fileUrl && !isEditing && (
          {content}
            {isUpdated && !deleted && (
                   n className="text-[10px] mx-2 text-zinc-500 dark:text-zinc-400">
                (edited)
              className="flex items-center w-full gap-x-2 pt-2"
              onSubmit={form.handleSubmit(onSubmit)}>
                <FormField
                  control={form.control}
                  name="content"
                            className="p-2 bg-zinc-200/90 dark:bg-zinc-700/75 border-none border-0
focus-visible:ring-0 focus-visible:ring-offset-0 text-zinc-600 dark:text-zinc-200"
                            placeholder="Edited message"
                      </FormControl>
                <Button disabled={isLoading} size="sm" variant="primary">
                </Button>
```

```
Press escape to cancel, enter to save
          </Form>
    {canDeleteMessage && (
          v className="hidden group-hover:flex items-center gap-x-2 absolute p-1 -top-2 right-5
bg-white dark:bg-zinc-800 border rounded-sm">
        {canEditMessage && (
          <ActionTooltip label="Edit">
              onClick={() => setIsEditing(true)}
              className="cursor-pointer ml-auto w-4 h-4 text-zinc-500 hover:text-zinc-600
dark:hover:text-zinc-300 transition"
        ) }
            onClick={() => onOpen("deleteMessage", {
              apiUrl: `${socketUrl}/${id}`,
              query: socketQuery,
            className="cursor-pointer ml-auto w-4 h-4 text-zinc-500 hover:text-zinc-600
dark:hover:text-zinc-300 transition"
        </ActionTooltip>
```

7. SocketProvider: The `SocketProvider` component manages the lifecycle of a WebSocket connection using Socket.io, encapsulating the connection logic to maintain a real-time communication channel. It initializes the connection on component mount, updates connection status on connect and disconnect events, and ensures clean disconnection on unmount, providing a context to access the socket instance and connection status throughout the app.

```
const SocketProvider
children
children: React.ReactNode
const [socket, setSocket] = useState(null);
const [isConnected, setIsConnected] = useState(false);
useEffect(() => {
                         new (ClientIO as any) (process.env.NEXT_PUBLIC_SITE_URL!, {
  const socketInstance =
   path: "/api/socket/io",
    addTrailingSlash: false,
  socketInstance.on("connect", () => {
   setIsConnected(true);
  });
  socketInstance.on("disconnect", () => {
   setIsConnected(false);
  setSocket(socketInstance);
    socketInstance.disconnect();
```

```
}, []);

return (
     <SocketContext.Provider value={{ socket, isConnected }}>
          {children}
          </SocketContext.Provider>
)
}
```

8.Direct message communication between memberOne and memberTwo: This API handler function manages the creation of direct messages within a conversation in a Next.js application, verifying request methods, user authentication, and required fields before persisting the message to the database and broadcasting it to relevant clients using Socket.io.

```
function handler(
req: NextApiRequest,
res: NextApiResponseServerIo,
   (req.method !== "POST") {
   turn res.status(405).json({ error: "Method not allowed" });
 const profile = await currentProfilePages(req);
 const { content, fileUrl } = req.body;
 const { conversationId } = req.query;
 if (!profile) {
   return res.status(401).json({ error: "Unauthorized" });
  if (!conversationId) {
    return res.status(400).json({ error: "Conversation ID missing" });
   return res.status(400).json({ error: "Content missing" });
 const conversation = await db.conversation.findFirst({
   where: {
     id: conversationId as string,
         memberOne: {
           profileId: profile.id,
         memberTwo: {
           profileId: profile.id,
     memberOne: {
       include: {
     memberTwo: {
       include: {
```

```
(!conversation) {
       turn res.status(404).json({ message: "Conversation not found" });
  const member = conversation.memberOne.profileId === profile.id ? conversation.memberOne :
conversation.memberTwo
  if (!member) {
      eturn res.status(404).json({ message: "Member not found" });
  const message = await db.directMessage.create({
      content,
      fileUrl,
      conversationId: conversationId as string,
      memberId: member.id,
      member: {
        include: {
          profile: true,
  const channelKey = `chat:${conversationId}:messages`;
  res?.socket?.server?.io?.emit(channelKey, message);
   eturn res.status(200).json(message);
   catch (error) {
  console.log("[DIRECT MESSAGES POST]", error);
     turn res.status(500).json({ message: "Internal Error" });
```

9.Channel Message component: This API handler manages the creation of messages within a specific channel on a server, validating user authentication, server, and channel membership before saving the message to the database and broadcasting it via WebSocket to update the channel in real-time for all members.

```
export default async function handler(
    req: NextApiRequest,
    res: NextApiResponseServerIo,
) {
    if (req.method !== "POST") {
        return res.status(405).json({ error: "Method not allowed" });
}

try {
    const profile = await currentProfilePages(req);
    const { content, fileUrl } = req.body;
    const { serverId, channelId } = req.query;

    if (!profile) {
        return res.status(401).json({ error: "Unauthorized" });
    }
    if (!serverId) {
        return res.status(400).json({ error: "Server ID missing" });
    }

    if (!channelId) {
        return res.status(400).json({ error: "Channel ID missing" });
}
```

```
turn res.status(400).json({ error: "Content missing" });
const server = await db.server.findFirst({
 where: {
   id: serverId as string,
   members: {
     some: {
       profileId: profile.id
   members: true,
if (!server) {
  return res.status(404).json({ message: "Server not found" });
const channel = await db.channel.findFirst({
if (!channel) {
    turn res.status(404).json({ message: "Channel not found" });
const member = server.members.find((member) => member.profileId === profile.id);
if (!member) {
  ceturn res.status(404).json({ message: "Member not found" });
const message = await db.message.create({
 data: {
    fileUrl,
   memberId: member.id,
   member: {
     include: {
const channelKey = `chat:${channelId}:messages`;
res?.socket?.server?.io?.emit(channelKey, message);
return res.status(200).json(message);
catch (error) {
console.log("[MESSAGES_POST]", error);
  turn res.status(500).json({ message: "Internal Error" });
```

10.Emoji Picker: The `EmojiPicker` component integrates an emoji selection tool into the application, automatically adapting its theme to match the current user interface theme and enabling users to enrich their messages with emojis.

11.File Upload: The `FileUpload` component utilizes UploadThing to manage file uploads, allowing users to upload, display, and remove files directly within the application. For image files, it showcases a thumbnail preview with a convenient option to delete the file. PDF uploads are represented by an icon and file name, including a delete button for easy removal. When no file is selected, the component presents a user-friendly dropzone, powered by UploadThing, enabling seamless file sharing and management within the chat environment.

```
className="bg-rose-500 text-white p-1 rounded-full absolute top-0 right-0 shadow-sm"
       type="button"
if (value && fileType === "pdf") {
   <div className="relative flex items-center p-2 mt-2 rounded-md bg-background/10">
     <FileIcon className="h-10 w-10 fill-indigo-200 stroke-indigo-400" />
       target=" blank"
       rel="noopener noreferrer"
       className="m1-2 text-sm text-indigo-500 dark:text-indigo-400 hover:underline"
       {value}
       onClick={() => onChange("")}
       className="bg-rose-500 text-white p-1 rounded-full absolute -top-2 -right-2 shadow-sm"
       type="button"
  endpoint={endpoint}
   onClientUploadComplete={(res) => {
     onChange (res?.[0].url);
   onUploadError={ (error: Error) => {
     console.log(error);
```